Appendix A:
Initial Study, Notice of Preparation, and Responses to NOP

Part 1: Initial Study

CITY OF SANTA CLARITA

BOUQUET CANYON ROAD RESIDENTIAL COMMUNITY

INITIAL STUDY

Prepared for:

CITY OF SANTA CLARITA
COMMUNITY DEVELOPMENT DEPARTMENT
23920 VALENCIA BLVD., SUITE 302
SANTA CLARITA

Prepared by:

Michael Baker INTERNATIONAL

3760 KILROY AIRPORT WAY, SUITE 270
LONG BEACH, CA 90806

DECEMBER 2018

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INITIAL STUDY
CITY OF SANTA CLARITA

Project title/master case number:	Bouquet Canyon Road Residential Community/Master Case No. 18-089
Lead agency name and address:	City of Santa Clarita Community Development Department 23920 Valencia Blvd., Suite 302 Santa Clarita, CA 91355
Contact person and phone number:	Hai Nguyen, Associate Planner (661) 255-4365
Project location:	Approximately 57 acres of mostly undeveloped land in the community of Saugus in the City of Santa Clarita, in the County of Los Angeles. Specifically, the site is located on the eastern and southern sides of Bouquet Canyon Road, between Copper Hill Drive to the north and Plum Canyon Road to the south. The subject property is designated as Assessor's Parcel Numbers: 2812-008-003; 2812-008-013; 2812-008-021; 2812-008-022; and 2812-008-031. Please refer to Figure 1-Regional Location Map and Figure 2-Project Vicinity Map.
Applicant's name and address:	Bouquet Canyon Project Owner, LLC, Contact: Scott Covington 888 San Clemente Drive #100, Newport Beach, CA 92660
General Plan designation:	Urban Residential 2 (UR2), 5 du/acre and Urban Residential 5 (UR5), 19-30 du/acre
Zoning:	Urban Residential 2 (UR2) and Urban Residential 5 (UR5)
Description of project and setting:	<u>Project Description</u> Development of a new residential community of 461 housing units with related infrastructure, dedicated open space areas, public trails, public parks, private recreation, and landscape elements on approximately 57 acres of primarily undeveloped land. Proposed homes would be located within five distinct planning areas, and would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. Parkland and recreational amenities include a hilltop park, five neighborhood parks, a linear park, a tot lot, and two private recreation sites. A major project component includes the closure of a portion of Bouquet Canyon Road, between Pam

Court and Hob Avenue, and the construction of a new alignment of Bouquet Canyon Road, consistent with the Santa Clarita General Plan Circulation Element. The new roadway would be constructed between segments of existing Bouquet Canyon Road, from approximately 1,500 feet north of Plum Canyon Road to approximately 700 feet south of Shadow Valley Lane. The new road segment would include a bridge over a seasonal stream course.

Site access to four of the five planning areas would be provided from Bouquet Canyon Road via two gated entries—one in the northwest corner area, opposite Pam Court, and the other on the southern side, from the new section of the street. Access to the fifth planning area, which is located along the northeastern edge of the site, would be from a drive located opposite David Way.

The project anticipates minimizing grading on the significant ridgeline to the greatest extent possible while providing the necessary cut and fill to establish the new Bouquet Canyon Road alignment.

Additionally, the project includes the channelization of part of the flood zone through the northeastern part of the site to carry high storm flows while retaining a natural stream course for low flows; as a result, a majority of the natural landscape in that area would be altered to construct flood control improvements.

Please refer to Figure 3-Proposed Site Plan for a depiction of the proposed development plan.

Required City Approvals

- Tentative Tract Map 82126 – to subdivide the subject property into 70 lots for residential land uses, streets, private drives, drainage infrastructure, slopes, and various open space lots.
- Conditional Use Permit 18-004 – for private gating of multi-family units, building heights greater than 35 feet, cluster development, and any import/export of dirt greater than 100,000 cubic yards of earth.
- Architectural Design Review 18-010 – for the proposed building design, styles, and forms.
- Development Review 18-009 – for the proposed physical design and layout of the project.
- Hillside Development Review Class IV 18-001 – to develop land with average cross slopes of 10 percent or more.
- Ridgeline Alteration Permit 18-001 – for development near a designated significant ridgeline in the ridgeline preservation overlay zone.

- Oak Tree Permit – required for any encroachments or removals of protected oak trees.

Project Setting

The project site is framed by steep slopes on the western and southern edges, with relatively flat land in the northern perimeters that is partially disturbed and partially in a natural state, with riparian vegetation. A variety of trees occur in the northern part of the site along the edge of Bouquet Canyon Road and within the lower interior area. Low-lying shrubs dominate the landscape in the flatter central portion of the site. A significant ridgeline feature is located on the northwestern portion of the site. The site is bisected by a seasonal creek bed. A portion of the project site is in a Federal Emergency Management Agency (FEMA) flood zone. One single-family residence is on site, on the western side, with access from Bouquet Canyon Road, near Fan Court.

Surrounding land uses:

Neighborhoods of single-family homes surround the site to the west, north, and southeast. Two probation camps operated by the County of Los Angeles are located just east of the site, and a neighborhood commercial center is located along Bouquet Canyon Road, just southwest of the site.

The local land use pattern is shown in Figure 4-Aerial View of Site and Surroundings.

Other public agencies whose approval is or may be required:

- California Department of Fish and Wildlife, Lakebed and Stream Alteration Permit
- Federal Emergency Management Agency, Conditional Letter of Map Revision and Letter of Map Revision
- Los Angeles Regional Water Quality Control Board, National Pollution Discharge Elimination System (NPDES) General Construction Permit, Clean Water Act Section 401 Certification
- U.S. Army Corps of Engineers, Clean Water Act Section 404 Permit

FIGURE 1
Regional Location Map

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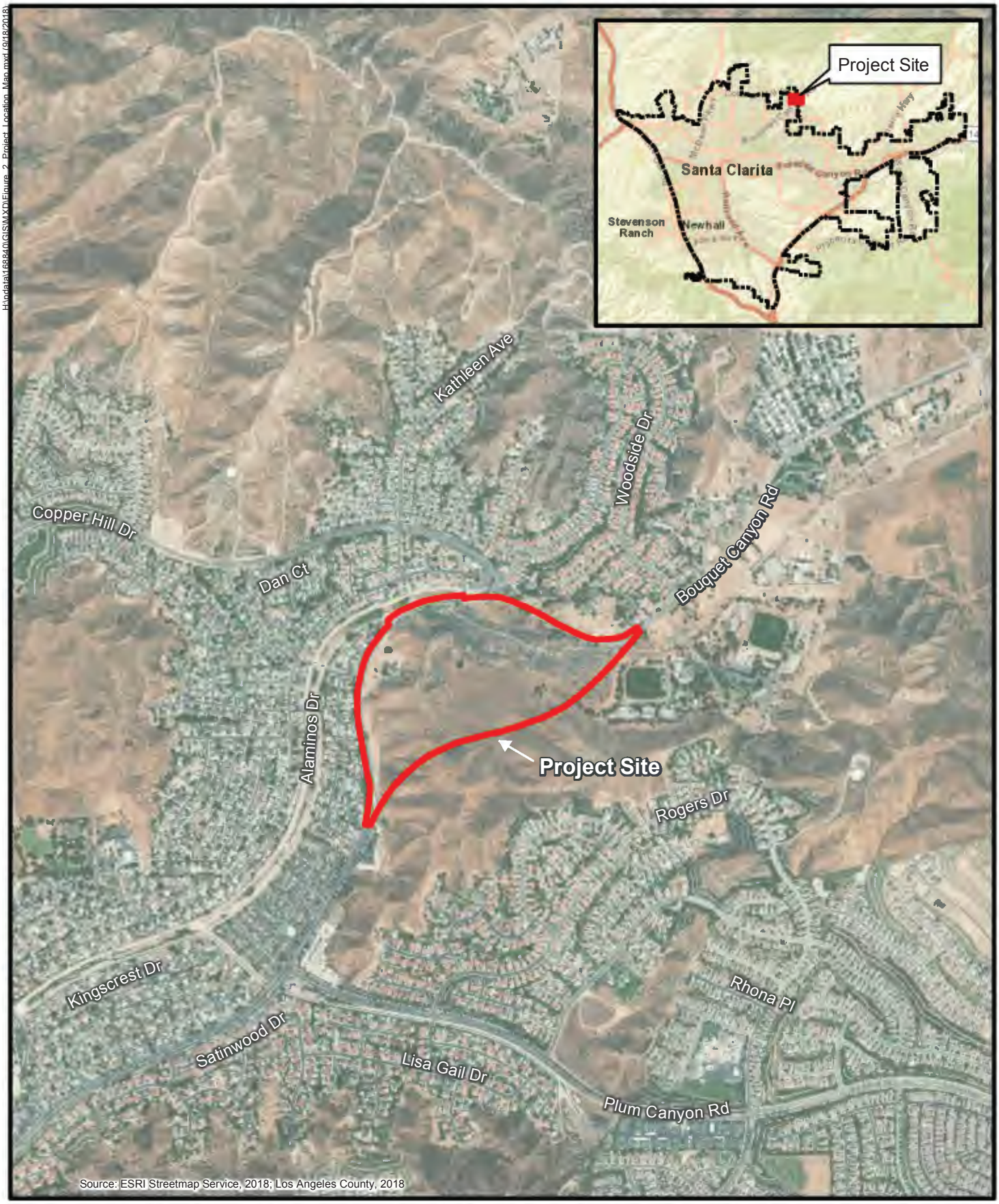

FIGURE 2
Project Location Map

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T:_CS\Work\Santa Clarita, City of\Bouquet Canyon Residential Project EIR_168840

BOUQUET CANYON SITE CALCULATIONS

PLANING AREA	SQ FT SUMMARY	UNITS
PA 1	118,500	45
PA 2	237,915	102
PA 3	232,518	132
PA 4	165,460	90
PA 5	176,847	92
Buildable Square Footage	931,240	461
Parks	3.28	AC
Entries	0.45	AC

PA 1
45' x 80' SFD - Two Story

			Plan	Mix	Percent	Sq. Ft.	Total Sq. Ft	Bed/Bath
Acres	5.68		Plan 1	15	33%	2,450	36,750	4 Bed/3.5 Ba
Total Lots	45		Plan 2	15	33%	2,600	39,000	4 Bed/3.5 Ba
Avg. Sq. Ft.	2,633		Plan 3	15	33%	2,850	42,750	5 Bed/4.5 Ba
Density	7.92	DU/AC			100%			
						Buildable Sq Ft	118,500	

PA 2
UA BUNGALOW

			Plan	Mix	Percent	Sq. Ft.	Total Sq. Ft	Bed/Bath
Acres	7.30		Plan 1	25	25%	2,136	53,400	3bd/3 Ba
Total Units	102		Plan 2	36	35%	2,201	79,236	3bd/3.5 Ba
Avg. Sq. Ft.	2,386		Plan 3	28	27%	2,505	70,140	4 bd/3.5 Ba
Density	13.97	DU/AC	Plan 4	13	13%	2,703	35,139	4 bd/3 Ba
					100%			
						Buildable Sq Ft	237,915	

PA 3
UA ROW

			Plan	Mix	Percent	Sq. Ft.	Total Sq. Ft	Bed/Bath
Acres	5.31		Plan 1	30	23%	1,517	45,510	3 Bed/2 Ba
Total Units	132		Plan 2	30	23%	1,576	47,340	2 Bed/2 Ba
Avg. Sq. Ft.	1,738		Plan 3	30	23%	1,857	55,710	3 Bed/3 Ba
Density	24.86	DU/AC	Plan 4	42	32%	1,999	83,958	3 Bed/3 Ba
					100%			
						Buildable Sq Ft	232,518	

PA 4
UA MOTOR COURT

			Plan	Mix	Percent	Sq. Ft.	Total Sq. Ft	Bed/Bath
Acres	4.85		Plan 1	20	22%	1,699	33,980	2bd/2.5 Ba
Total Units	90		Plan 2	20	22%	1,830	36,600	3bd/2 Ba
Avg. Sq. Ft.	1,852		Plan 3	20	22%	1863	37,260	3bd/2 Ba
Density	18.56	DU/AC	Plan 4	20	22%	1,894	37,880	3bd/3 Ba
			Plan 5	10	11%	1,974	19,740	4bd/2.5 Ba
					100%			
						Buildable Sq Ft	165,460	

PA 5
UA 40 TOWNS

			Plan	Mix	Percent	Sq. Ft.	Total Sq. Ft	Bed/Bath
Acres	4.47		Plan 1	27	29%	1,791	48,357	2 Bed/2.75 Ba
Total Units	92		Plan 2	35	38%	1,908	66,780	3 Bed/3.25 Ba
Avg. Sq. Ft.	1,919		Plan 3	30	33%	2,057	61,710	3 Bed/3.25 Ba
Density	20.58	DU/AC			100%			
						Buildable Sq Ft	176,847	

Source: Urban Arena, 2018

0 200 400
FEET

FIGURE 3
Site Plan

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900 0 900
Feet

Source: NearMap Imagery July 7, 2018

FIGURE 4
Aerial View of Site and Surroundings

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A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a **"Potentially Significant Impact"** or **"Less Than Significant Impact With Mitigation"** as indicated by the checklist on the following pages.

[X]	Aesthetics	[ ]	Agriculture and Forestry Resources	[X]	Air Quality
[X]	Biological Resources	[X]	Cultural Resources	[X]	Geology /Soils
[X]	Greenhouse Gas Emissions	[X]	Hazards & Hazardous Materials	[X]	Hydrology/Water Quality
[ ]	Land Use/Planning	[ ]	Mineral Resources	[X]	Noise
[ ]	Population/Housing	[X]	Public Services	[ ]	Recreation
[X]	Transportation/Traffic	[ ]	Tribal Cultural Resources	[X]	Utilities/Service Systems
[X]	Mandatory Findings of Significance				

B. DETERMINATION

On the basis of this initial evaluation:

[ ] I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

[ ] I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

[X] I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

[ ] I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

[ ] I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature
Name, Title Hai Nguyen, Associate Planner

Date 11/29/2018

Signature
Name, Title Patrick Leclair, Senior Planner

Date 11/29/18

C. EVALUATION OF ENVIRONMENTAL IMPACTS:

	Potentially Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	[X]	[ ]	[ ]	[ ]
b) Substantially damage scenic resources, including, but not limited to, primary/secondary ridgelines, trees, rock outcroppings, and historic buildings within a state scenic highway?	[X]	[ ]	[ ]	[ ]
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	[X]	[ ]	[ ]	[ ]
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	[X]	[ ]	[ ]	[ ]
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	[ ]	[ ]	[ ]	[X]
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	[ ]	[ ]	[ ]	[X]
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	[ ]	[ ]	[ ]	[X]
d) Result in the loss of forestland or conversion of forestland to non-forest use?	[ ]	[ ]	[ ]	[X]
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forestland to non-forest use?	[ ]	[ ]	[ ]	[X]
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	[X]	[ ]	[ ]	[ ]
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	[X]	[ ]	[ ]	[ ]

	Potentially Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	[X]	[ ]	[ ]	[ ]
d) Expose sensitive receptors to substantial pollutant concentrations?	[X]	[ ]	[ ]	[ ]
e) Create objectionable odors affecting a substantial number of people?	[ ]	[ ]	[X]	[ ]
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	[X]	[ ]	[ ]	[ ]
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	[X]	[ ]	[ ]	[ ]
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	[X]	[ ]	[ ]	[ ]
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	[X]	[ ]	[ ]	[ ]
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, including oak trees?	[X]	[ ]	[ ]	[ ]
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	[ ]	[ ]	[ ]	[X]
g) Affect a Significant Ecological Area (SEA) or Significant Natural Area (SNA) as identified on the City of Santa Clarita ESA Delineation Map?	[ ]	[ ]	[ ]	[X]
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	[X]	[ ]	[ ]	[ ]
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	[X]	[ ]	[ ]	[ ]
c) Directly or indirectly destroy or impact a unique paleontological resource or site or unique geologic feature?	[X]	[ ]	[ ]	[ ]
d) Disturb any human remains, including those interred outside of formal cemeteries?	[ ]	[ ]	[X]	[ ]

	Potentially Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	[ ]	[ ]	[X]	[ ]
ii) Strong seismic ground shaking?	[X]	[ ]	[ ]	[ ]
iii) Seismic-related ground failure, including liquefaction?	[X]	[ ]	[ ]	[ ]
iv) Landslides?	[X]	[ ]	[ ]	[ ]
b) Result in substantial wind or water soil erosion or the loss of topsoil, either on- or off-site?	[X]	[ ]	[ ]	[ ]
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	[X]	[ ]	[ ]	[ ]
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	[X]	[ ]	[ ]	[ ]
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	[ ]	[ ]	[ ]	[X]
f) Result in a change in topography or ground surface relief features?	[X]	[ ]	[ ]	[ ]
g) Result in earth movement (cut and/or fill) of 10,000 cubic yards or more?	[X]	[ ]	[ ]	[ ]
h) Involve development and/or grading on a slope greater than 10% natural grade?	[X]	[ ]	[ ]	[ ]
i) Result in the destruction, covering, or modification of any unique geologic or physical feature?	[ ]	[ ]	[ ]	[X]
VII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment?	[X]	[ ]	[ ]	[ ]
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	[X]	[ ]	[ ]	[ ]

VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	[ ]	[ ]	[X]	[ ]
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving explosion or the release of hazardous materials into the environment (including, but not limited to oil, pesticides, chemicals, fuels, or radiation)?	[X]	[ ]	[ ]	[ ]
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	[ ]	[ ]	[ ]	[X]
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	[ ]	[ ]	[ ]	[X]
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	[ ]	[ ]	[ ]	[X]
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	[ ]	[ ]	[ ]	[X]
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	[ ]	[ ]	[ ]	[X]
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	[X]	[ ]	[ ]	[ ]
i) Expose people to existing sources of potential health hazards (e.g., electrical transmission lines, gas lines, oil pipelines)?	[ ]	[ ]	[X]	[ ]

IX. HYDROLOGY AND WATER QUALITY – Would the project:

a) Violate any water quality standards or waste discharge requirements?	[X]	[ ]	[ ]	[ ]
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	[X]	[ ]	[ ]	[ ]
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	[X]	[ ]	[ ]	[ ]
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	[X]	[ ]	[ ]	[ ]

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	[X]	[ ]	[ ]	[ ]
f) Otherwise substantially degrade water quality?	[X]	[ ]	[ ]	[ ]
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	[X]	[ ]	[ ]	[ ]
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	[X]	[ ]	[ ]	[ ]
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	[X]	[ ]	[ ]	[ ]
j) Inundation by seiche, tsunami, or mudflow?	[X]	[ ]	[ ]	[ ]
k) Result in changes in the rate of flow, currents, or the course and direction of surface water and/or groundwater?	[X]	[ ]	[ ]	[ ]
l) Other modification of a wash, channel creek, or river?	[ ]	[ ]	[X]	[ ]
m) Impact stormwater management in any of the following ways:	[X]	[ ]	[ ]	[ ]
i) Potential impact of project construction and project post-construction activity on stormwater runoff?	[X]	[ ]	[ ]	[ ]
ii) Potential discharges from areas for materials storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas?	[X]	[ ]	[ ]	[ ]
iii) Significant environmentally harmful increase in the flow velocity or volume of stormwater runoff?	[X]	[ ]	[ ]	[ ]
iv) Significant and environmentally harmful increases in erosion of the project site or surrounding areas?	[X]	[ ]	[ ]	[ ]
v) Stormwater discharges that would significantly impair or contribute to the impairment of the beneficial uses of receiving waters or areas that provide water quality benefits (e.g., riparian corridors, wetlands, etc.)?	[X]	[ ]	[ ]	[ ]
vi) Cause harm to the biological integrity of drainage systems, watersheds, and/or water bodies?	[X]	[ ]	[ ]	[ ]
vii) Does the proposed project include provisions for the separation, recycling, and reuse of materials both during construction and after project occupancy?	[ ]	[ ]	[X]	[ ]
X. LAND USE AND PLANNING – Would the project:				
a) Disrupt or physically divide an established community (including a low-income or minority community)?	[ ]	[ ]	[X]	[ ]
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	[ ]	[ ]	[X]	[ ]
c) Conflict with any applicable habitat conservation plan, natural community conservation plan, and/or policies by agencies with jurisdiction over the project?	[ ]	[ ]	[ ]	[X]

XI. MINERAL AND ENERGY RESOURCES – Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	[ ]	[ ]	[ ]	[X]
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	[ ]	[ ]	[ ]	[X]
c) Use nonrenewable resources in a wasteful and inefficient manner?	[X]	[ ]	[ ]	[ ]

XII. NOISE – Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	[X]	[ ]	[ ]	[ ]
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	[X]	[ ]	[ ]	[ ]
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	[X]	[ ]	[ ]	[ ]
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	[X]	[ ]	[ ]	[ ]
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	[ ]	[ ]	[ ]	[X]
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	[ ]	[ ]	[ ]	[X]

XIII. POPULATION AND HOUSING – Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	[ ]	[ ]	[X]	[ ]
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere (especially affordable housing)?	[ ]	[ ]	[X]	[ ]
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	[ ]	[ ]	[X]	[ ]

XIV. PUBLIC SERVICES – Would the project result in:

a) Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?	[X]	[ ]	[ ]	[ ]
ii) Police protection?	[X]	[ ]	[ ]	[ ]
iii) Schools?	[X]	[ ]	[ ]	[ ]
iv) Parks?	[X]	[ ]	[ ]	[ ]
v) Other public facilities?	[ ]	[ ]	[X]	[ ]

XV. RECREATION – Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	[ ]	[ ]	[X]	[ ]
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	[ ]	[ ]	[X]	[ ]

XVI. TRANSPORTATION/TRAFFIC – Would the project:

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	[X]	[ ]	[ ]	[ ]
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	[X]	[ ]	[ ]	[ ]
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	[ ]	[ ]	[ ]	[X]
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	[X]	[ ]	[ ]	[ ]
e) Result in inadequate emergency access?	[X]	[ ]	[ ]	[ ]
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	[X]	[ ]	[ ]	[ ]

XVII. TRIBAL CULTURAL RESOURCES – Would the project cause a change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	[ ]	[X]	[ ]	[ ]
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	[ ]	[X]	[ ]	[ ]

XVIII. UTILITIES AND SERVICE SYSTEMS – Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	[ ]	[ ]	[X]	[ ]
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	[X]	[ ]	[ ]	[ ]
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	[X]	[ ]	[ ]	[ ]
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	[X]	[ ]	[ ]	[ ]
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	[X]	[ ]	[ ]	[ ]
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	[ ]	[ ]	[X]	[ ]
g) Comply with federal, state, and local statutes and regulations related to solid waste?	[ ]	[ ]	[X]	[ ]

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	[X]	[ ]	[ ]	[ ]

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	[X]	[ ]	[ ]	[ ]
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	[X]	[ ]	[ ]	[ ]

D. DISCUSSION OF ENVIRONMENTAL IMPACTS AND/OR EARLIER ANALYSIS

Section and Subsections	Evaluation of Impacts
I. AESTHETICS	**a)** **Potentially Significant Impact:** A scenic vista or viewshed may include views of both natural and built environments, and per the General Plan Conservation and Open Space Element (Santa Clarita 2011), may include views of scenic resources such as mountains and canyons, woodlands, water bodies, and/or specific resources such as Vasquez Rocks County Park. A "viewshed" is the range of vision in which scenic resources can be observed, defined by physical features that frame the boundaries or context of one or more scenic resources. Bouquet Canyon is one of 11 canyons identified in the Conservation and Open Space Element as a major scenic canyon that provides a visual backdrop to the urban environment and creates a sense of place for adjoining neighborhoods. Following the course of Bouquet Creek, Bouquet Canyon extends from Bouquet Reservoir south to the junction of Bouquet Canyon Road and Soledad Canyon Road. Bouquet Canyon is characterized by oak, willow, and sycamore groves and a rural development character in the area north of Saugus. This proposed development would be located on a 57.1-acre, primarily vacant site east of Bouquet Canyon Road and south of Copper Hill Drive in the community of Saugus. The proposed project features a significant ridgeline, as shown in the General Plan Conservation and Open Space Element Exhibit CO-1 (Hillsides and Ridgelines) (Santa Clarita 2011, p. CO-7). The project site is surrounded by existing single-family residences to the north and west, vacant open space and the Canyon Center commercial center to the south, and Los Angeles County Probation Department property to the east. Motorists driving along Bouquet Canyon Road and the surrounding uses have views of the significant ridgeline and the natural open landscape in the northern part of the site. Further analysis is required to determine whether the proposed project would have a significant adverse effect on a scenic vista and, if so, to develop measures to avoid, reduce, or otherwise mitigate the effect to a level of less than significant, if possible. Further analysis will be provided in the EIR to be prepared for this project. **b)** **Potentially Significant Impact:** The closest officially designated state scenic highway is part of the Angeles Crest Scenic Byway, State Highway 2, from near La Cañada-Flintridge north to the San Bernardino County line. This state scenic highway is approximately 30 miles from the project site. State Route 110 (SR 110), Arroyo Seco Historic Parkway, between milepost 25.7 and 31.9 in Los Angeles, is approximately 35 miles from the project site (Caltrans 2018). The distance and the mountainous terrain within the Santa Clarita Valley make it unlikely that the proposed project would be visible from a state scenic highway. As such, the proposed project would not adversely affect the viewshed from a state scenic highway. The Conservation and Open Space Element of the City's General Plan does not identify a scenic route or highway in the area. Exhibit CO-9 (Master Plan of Trails), of the Conservation and Open Space Element does identify a proposed Class I bicycle route to run along Bouquet Creek, terminating at Hob Avenue, directly north of the project site; however, no completion date is given in the General Plan (Santa Clarita 2011). If this trail were to be completed, cyclists would have a view of the ridgeline on

	the northwest side of the property and the flat, grassland on the north side of the property. The project site features a significant ridgeline on the northwestern portion of the site, as shown in the General Plan Conservation and Open Space Element Exhibit CO-1 (Santa Clarita 2011, p. CO-7). The proposed project would grade a portion of the ridgeline, while preserving some of this as public open space, and would provide a walking trail to the knoll top. A number of trees are found on the project site, which vary in size, species, and health, and there are a number of mature trees along the edge of Bouquet Canyon Road. No rock outcroppings or other unique natural geologic features exist on the project site. There are no cultural features, except one single-family residence on the western side that is mostly obscured from view by surrounding trees. Further analysis is required to determine whether the proposed project would substantially damage scenic resources, such as the ridgeline on the northwest side of the property, the natural landscape elements on the north side of the property, and existing trees, and if so, to develop measures to avoid, reduce, or otherwise mitigate the effect to a level of less than significant, if possible. Further analysis will be provided in the EIR to be prepared for this project. **c)** **Potentially Significant Impact:** The proposed project would substantially alter the visual character of the site, which is primarily undeveloped hillsides, natural landscape, and open grassland. This includes extensive grading and landform alteration associated with developing residential building pads, streets, and infrastructure, and construction of 461 new homes and the structural massing that will add to the site. A conditional use permit would be required for import/export of dirt (in excess of 100,000 cubic yards of earth); cluster development, which would concentrate development away from the steepest ridgelines on the property; and for building heights greater than 35 feet. Additionally, the proposed project would require hillside development review by the City; such review is required to develop on land with average cross slopes of 10 percent or more. As such, further analysis is required to determine whether the proposed project would substantially degrade the existing visual character or quality of the site and, if so, to develop measures to avoid, reduce, or otherwise mitigate the effect to a level of less than significant, if possible. Further analysis will be provided in the EIR to be prepared for this project. **d)** **Potentially Significant Impact:** The project site is primarily vacant, apart from one single-family home on the western side, and has little or no night lighting. The site is surrounded by development with a variety of low-intensity outdoor night lighting sources located at single-family homes to the north, west, and farther southeast, and a strip commercial center to the south. A Los Angeles County Probation Department property, to the east, has pole-mounted lighting in two fields. Further, the City of Santa Clarita operates street lights on Bouquet Canyon Road, as well as David Way and Hob Court to the north; Nicholas Circle to the southeast; and on Benz Road, Russ Jay Street, and Steve Jon Street to the west (Santa Clarita 2018). The proposed project would contain multiple new sources of outdoor night lighting, such as security lighting along internal walkways and on building exteriors, accent lighting on homes, in landscape areas and possibly at gated entries, the outside of residential homes, and street and parking area

	lighting. As such, further analysis is required to determine whether the proposed project would create a new source of substantial light or glare adversely affecting day or nighttime views and, if so, to develop measures to avoid, reduce, or otherwise mitigate the effect to a level of less than significant, if possible. Further analysis will be provided in the EIR to be prepared for this project. ***Sources of Information*** Caltrans (California Department of Transportation). 2018. California Scenic Highway Mapping System: Los Angeles County. Website. Accessed September 12. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways. Santa Clarita, City of. 2011. *General Plan Conservation and Open Space Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf. ———. 2018. Online GIS Mapping System. Accessed September 12. http://gis.santa-clarita.com/html5/MasterPUB.html.
II. AGRICULTURE AND FORESTRY RESOURCES	**a)** **No Impact:** The proposed project site is not in an area of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, Farmland of Local Potential, or Grazing Land as identified by the California Department of Conservation's (2016) California Important Farmland Finder. The site is classified as Other land type, which is described on the Important Farmland Finder as land that is not included in any of the other mapping categories. This land type category includes lands that are vacant and nonagricultural and are greater than 40 acres in size surrounded by urban development, such as the project site. Since the project site is not designated farmland, and would not convert designated farmland to non-agricultural uses, the proposed project would have no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. **b)** **No Impact:** Santa Clarita does not have agricultural preserve areas. Further, there is no Williamson Act contract land in the city. No land in Santa Clarita is zoned exclusively for agricultural use. Therefore, the proposed project would not conflict with zoning for agricultural use or Williamson Act contracts and would have no related impacts. **c)** **No Impact:** The proposed project site has a General Plan land use designation of Urban Residential 2 (UR2) and Urban Residential 5 (UR5) and is zoned Urban Residential 2 (UR2) and Urban Residential 5 (UR5). The project site is not located in an area zoned as Open Space-National Forest (OS-NF). Therefore, implementation of the proposed project would not conflict with the existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned as Timberland Production. No impact would occur. **d)** **No Impact:** The project site does contain mature trees, which are scattered throughout the 57.1-acre site; however, there is no substantial concentration of trees that would constitute a forest. The site has not been managed as timberland or managed to produce forest products. There would be no loss of forestland or the conversion of forestland; therefore, no impact would occur. **e)** **No Impact:** There are currently no agricultural operations being conducted on the project site, and the site is not zoned for agricultural uses. In

	addition, no forestland is located on the proposed project site or in the vicinity. No farmland or forestland would be converted to other uses under the proposed project, and no impact would occur. ***Sources of Information*** California Department of Conservation. 2016. California Important Farmland Finder. https://maps.conservation.ca.gov/dlrp/ciff/. Hennesy, Patrick. 2018. Research Data Specialist II, California Department of Conservation. Telephone call with Kara Palm, Michael Baker International Senior Planner, regarding farmland classification of project site. September 20.
III. AIR QUALITY	**a)** **Potentially Significant Impact:** Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. Those ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Bouquet Canyon Residential Project is in a nonattainment basin—the South Coast Air Basin (SCAB), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD is required, pursuant to the federal Clean Air Act and the California Clean Air Act, to reduce emissions of criteria pollutants for which the basin is in nonattainment, which include ozone, coarse particulate matter (PM10), fine particulate matter (PM2.5), and lead. Because of the violations of ambient air quality standards, an Air Quality Management Plan (AQMP) is required to be prepared for the SCAB. The AQMP analyzes air quality on a regional level and identifies region-wide attenuation methods to achieve the air quality standards. The current AQMP was adopted in 2016. The proposed project would produce emissions both during grading and construction in the short term and primarily by the generation of vehicle traffic during long-term operation. Such emissions could generate criteria pollutants emissions that could result in significant impacts to air quality in the area, and which could result in conflicts with the current AQMP. Further analysis and quantification of the project's emissions of criteria air pollutants is required to determine whether the project could conflict with the applicable provisions and broader goals of the 2016 AQMP. This analysis, which may also include mitigation measures, will be provided in the EIR to be prepared for this project. **b)** **Potentially Significant Impact:** Existing air quality is measured at established SCAQMD air quality monitoring stations. Monitored air quality is evaluated in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Further analysis and quantification of the project's emissions of criteria air pollutants is required to determine whether the project would violate any applicable air quality standards or contribute to an existing air quality standard violation. This analysis, which may also include mitigation measures, will be provided in the EIR to be prepared for this project.

c) **Potentially Significant Impact:** As discussed in response a) above, the SCAB is in nonattainment for ozone (both the 1-hour state standard and the 8-hour federal and state standards), PM_{10} (state standards), $PM_{2.5}$ (federal and state standards), and lead (federal standards). The SCAQMD established these thresholds in consideration of cumulative air pollution in the air basin. As such, projects that do not exceed the SCAQMD's thresholds are not considered to significantly contribute to cumulative air quality impacts. Further analysis and quantification of the project's emissions of the non-attainment criteria air pollutants is required to determine whether these emissions would be cumulatively considerable. This analysis, which may also include mitigation measures, will be provided in the EIR to be prepared for this project.

d) **Potentially Significant Impact:** Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14, the elderly over 65, persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. Most sensitive receptor locations are therefore schools, hospitals, and residences. Sensitive receptors likely to be affected by air quality impacts associated with project construction include the existing residences to the north, south, and west of the site.

The project would generate air pollutant emissions in the short term during construction from construction vehicle and machinery exhaust fumes and dust particles released during land disturbance. Moreover, the development of 461 new homes would add to vehicular traffic exhaust emissions on the local circulation network. No stationary sources of air emissions are proposed by the project. As such, there is the potential for both short-term and long-term air emissions to impact nearby sensitive receptors.

Further analysis and quantification of the project's emissions of air pollutants is required to determine whether these emissions would be significant enough to result in adverse effects to neighboring sensitive receptors. This analysis, which may also include mitigation measures, will be provided in the EIR to be prepared for this project.

e) **Less Than Significant Impact:** Established requirements addressing construction equipment operations and construction material use, storage, and disposal act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be highly localized, temporary, short term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. The project's potential construction-source odor impacts are therefore considered less than significant.

The SCAQMD CEQA Air Quality Handbook (1993) identifies certain land uses as sources of odors: agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed project would not include any of the land uses identified by the SCAQMD as odor sources.

The developed residential community would generate odors on an occasional and temporary basis from sources such as outdoor barbecues, repainting of exterior building surfaces, and exhaust from combustion-powered landscape machinery. Each home would have covered trash

	receptacles or covered dumpsters that may serve several homes. This method of trash storage would limit rain intrusion and the release of any trash odors to the atmosphere and would thus prevent release of significant rubbish odors from regular household trash. With the normal storage of closed trash containers and through compliance with the SCAQMD's Rule 402 (Nuisance), which restricts the discharging of air contaminants that could result in injury, detriment, nuisance, or annoyance—including odors—to the public, no significant impact related to odors would occur during the ongoing operations of the proposed project. Odors associated with daily residential activities would be minor and less than significant. ***Sources of Information*** SCAQMD (South Coast Air Quality Management District). 1993. CEQA Air Quality Handbook. http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook. ———. 2016. Air Quality Management Plan. https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.
IV. BIOLOGICAL RESOURCES	**a)** Potentially Significant Impact: The natural landscape on-site may support riparian or other sensitive habitat, along with wildlife species that forage or nest on a regular basis. The on-site drainage feature is a tributary to the Santa Clara River and would fall under the jurisdictional authority of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and the California Department of Fish and Wildlife (CDFW). It should also be noted that the CDFW's California Natural Diversity Database and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California database identify 15 special-status plant species, 26 special-status wildlife species, and 4 special-status plant communities as having the potential to occur within the vicinity of the project site. With extensive landform and landscape alterations proposed to create the proposed development plan, the project could adversely affect a variety of biological resources, including riparian vegetation and habitat that support rare, threatened, or endangered plants and wildlife species such as the burrowing owl and coastal California gnatcatcher. Thus, there is the potential for the construction and operation of the project to impact special-status species and habitat through converting the undisturbed land to suburban land uses. Further research and site surveys by professional terrestrial biologists are required to determine the presence and extent of sensitive habitat and the occurrence of sensitive plants or wildlife species that are protected under state or federal regulations, or which are considered to be at risk due to habitat loss and encroachment by urbanized land uses. Based upon the findings of this research, an assessment of the project's impacts due to construction activities and over the long-term operating life is needed to determine whether the project could result in significant impacts to sensitive biological resources. This research and impact assessment will be conducted as part of an EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **b)** **Potentially Significant Impact:** The project site supports a vegetated drainage course that is a tributary to the Santa Clara River; therefore, there is the potential for the presence of riparian habitat surrounding the drainage. Additionally, there are low-lying shrubs and trees scattered

throughout the site, which may provide habitat for wildlife species and vegetation that may constitute a sensitive natural community. The extensive land disturbance and construction of 461 residential units and associated infrastructure would substantially alter the largely undeveloped nature of the approximately 57-acre project site, and thus could result in a significant impact to any riparian habitat or sensitive natural communities that occur within this area.

Further research and site surveys by professional terrestrial biologists are required to determine the presence and extent of riparian habitat or sensitive natural communities. Based upon the findings of this research, an assessment of the project's impacts due to construction activities and over the long-term operating life is needed to determine whether the project could result in significant impacts to riparian or sensitive natural communities. This research and impact assessment will be conducted as part of an EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

c) **Potentially Significant Impact:** Wetlands are defined by Section 404 of the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs.

The on-site drainage feature is a tributary to the Santa Clara River, and may contain wetland features. As shown on Exhibit CO-5 (Significant Ecological Areas) of the General Plan Conservation and Open Space Element (2011, p. CO-32), while the project site does not lie within the Cruzan Mesa Vernal Pools Significant Ecological Area (SEA), this SEA is within the vicinity of the project site, east of Bouquet Canyon and Bouquet Canyon Road.

Further site investigations, including a delineation of jurisdictional water features, will be required to determine the presence and extent of any wetlands or other jurisdictional water features on-site. Based upon the findings of this research, an assessment of the project's impacts due to construction activities and over the long-term operating life is needed to determine whether the project could result in significant impacts to jurisdictional waters. This research and impact assessment will be conducted as part of an EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

d) **Potentially Significant Impact:** The project site is not located in any designated area that has a defined role in promoting wildlife movement, and there is no wildlife nursery on or near the project site. However, an SEA, as discussed in response c) above, is within the vicinity of the project site. SEAs play a key role in maintaining habitat connectivity in the region. Given the proximity of the project site to this resource, it is likely that common or sensitive wildlife moves through this area to some extent. Additionally, fish and wildlife movement may be facilitated by the drainage that runs through the project site.

The land clearance, earthwork, and development of 461 residential units and the associated infrastructure, including the alignment of the new Bouquet Canyon Road, could inhibit, disturb, or alter the existing patterns of wildlife movement across the primarily undeveloped project site.

Further research and site surveys by professional wildlife biologists are required to determine existing movement patterns, if any, throughout the site and any potential impacts to wildlife movement. Based upon the findings of this research, an assessment of the project's impacts due to construction activities and over the long-term operating life is needed to determine whether the project could result in significant impacts to wildlife movement and corridors. This research and impact assessment will be conducted as part of an EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

e) **Potentially Significant Impact:** The City defines oak trees as all species of the genus Quercus, including, but not limited to, valley oak (*Quercus lobata*), California live oak (*Q. agrifolia*), canyon oak (*Q. chrysolepis*), interior live oak (*Q. wislizenii*) and scrub oak (*Q. dumosa*), regardless of size. Pursuant to the City's Zoning Code, no person shall cut, prune, remove, relocate, endanger, damage, or encroach into the protected zone of any protected oak tree on any public or private property in Santa Clarita except in accordance with the conditions of a valid oak tree permit issued by the City, in conformance with Municipal Code Section 17.23.170 (Oak Tree Permit). The City defines a protected oak tree as any oak meeting the minimum circumference of 6 inches (approximately 2-inch diameter) at 4.5 feet above natural grade (breast height). To obtain a permit, an oak tree report is required that includes diameter, species, health assessment, appraisals of each tree's value according to the International Society of Arboriculture's current edition of the *Guide for Plant Appraisal*, photographs, and trunk, dripline, and protected zone location information. There are a number of trees on the project site and some of those may be oaks that are protected by the City's Oak Tree Permit standards. The proposed project development footprint would remove many of the trees on-site, and therefore could potentially impact protected oak trees.

An oak tree survey is required to determine the presence and/or location of protected trees. The findings of the survey will be summarized in an oak tree report. The report will include an assessment of the project's impacts due to construction activities and over the long-term operating life to determine whether the project could result in significant impacts to protected trees. The survey and report will be conducted as part of an EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

f) **No Impact:** As with all of Santa Clarita, the project site is not within a habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, the project would not conflict with any adopted habitat conservation plans, and the project would have no related impacts.

g) **No Impact:** The project site is not within an SEA as identified on Exhibit CO-5 of the City's General Plan Conservation and Open Space Element (Santa Clarita 2011, p. CO-32). The project site is also not within a Significant Natural Area identified by the CDFW. Therefore, the proposed project would not affect an SEA or Significant Natural Area.

Sources of Information

California Department of Fish and Wildlife. 2018. California Natural Diversity Database. Accessed July 19. https://www.wildlife.ca.gov/data/cnddb.

	California Native Plant Society. 2018. *Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39)*. Accessed July 19. http://www.rareplants.cnps.org. Santa Clarita, City of. 2011. *General Plan Conservation and Open Space Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
V. CULTURAL RESOURCES	**a) Potentially Significant Impact:** A review of the City's Historical Resources Map in the General Plan Conservation and Open Space Element (Santa Clarita 2011, p. CO-43) does not identify any known historical resources or landmarks at or within the vicinity of the project site. However, the project site is primarily undeveloped land, and there is some potential for discovering historical resources from prior human activities during the earthwork phase of project construction. A cultural resources records search and field survey are required to determine whether any historic resources have been documented on or in the vicinity of the site and to help determine the historic context and prospects of finding historic artifacts during construction. This research will be conducted as part of a cultural resources study to be included in the EIR to be prepared for this project. If potential for a significant impact to historic resources is identified, mitigation measures such as monitoring of earthwork will be recommended. **b) Potentially Significant Impact:** There are no known prehistoric or historic archaeological sites on the project site. However, the project site is largely undeveloped and project implementation will result in ground disturbance that may unearth previously unknown resources. Moreover, Native American settlements and ceremonial sites were often located in river valleys, such as the proposed project site. An archaeological resources records search and field survey are required to determine whether any resources have been documented on or in the vicinity of the site and to help determine the prehistoric and historic context and prospects of finding archaeological materials during construction. This research will be conducted as part of a cultural resources study to be included in the EIR to be prepared for this project. If potential for a significant impact to archaeological resources is identified, mitigation measures such as monitoring of earthwork will be recommended. **c) Potentially Significant Impact:** The presence of fossil-bearing rock or geologic formations underlying the project site has not been determined. Ground-disturbing activities could potentially result in disturbance of paleontological resources, if they occur within the disturbance area. Further analysis is required to determine if the geologic structure is known to have yielded fossil finds in Santa Clarita or other areas, and to determine if the proposed grading plan could result in disturbance of those materials within the proposed grading depths. This analysis will be conducted as part of the EIR to be prepared for this project. If potential for a significant impact to paleontological resources is identified, mitigation measures such as monitoring of earthwork will be recommended. **d) Less Than Significant Impact:** There are no known human remains on the site. The project site is not part of a formal cemetery and is not known to have been used for disposal of historic or prehistoric human remains. Thus, human remains are not expected to be encountered during construction of the proposed project. In the unlikely event that human remains are encountered during project construction, California Health and

	Safety Code Section 7050.5 requires the project to halt until the county coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Public Resources Code Section 5097.98. Compliance with these regulations would ensure the proposed project would not significantly impact human remains. ***Sources of Information*** Santa Clarita, City of. 2011. *General Plan Conservation and Open Space Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
VI. GEOLOGY AND SOILS	**a-i) Less Than Significant Impact:** The Santa Clarita area contains and is within the vicinity of several known active and potentially active earthquake faults and fault zones. Active faults are those having historically produced earthquakes or shown evidence of movement within the past 11,000 years, and potentially active faults are those demonstrating displacement within the last 1.6 million years. The California Geological Survey establishes regulatory zones around active faults, called Alquist-Priolo Earthquake Fault Zones. These zones extend from 200 to 500 feet on each side of the known fault, identifying areas where potential surface fault rupture could prove hazardous for buildings used for human occupancy. The City of Santa Clarita's General Plan Safety Element shows that the project site is not within an Alquist-Priolo Earthquake Fault Zone (Santa Clarita 2011a, p. S-4). Further, no faults are known to pass directly beneath the project site. The closest active fault is the San Gabriel fault (approximately 2 miles to the southwest of the project site). Given the distance to the project site, the potential for surface rupture beneath the proposed project would be low; therefore, the threat to people or structures resulting from rupture of a known fault line is considered to be less than significant. **a-ii) Potentially Significant Impact:** The project site could be subject to significant seismic ground shaking given the proximity to the San Gabriel fault line, as well as others in the area (e.g., the Tick Canyon fault, the Pelona fault, or the San Francisquito fault); however, the proposed development would be designed in accordance with the City and County building code regulations governing the construction of buildings in California to withstand minor earthquakes without major damage. That said, further analysis is required to determine the scope and magnitude of project impacts relating to placing people and structures at risk of loss, injury, or death due to strong seismic ground-shaking and whether any significant impact can be avoided, reduced, or otherwise mitigated through mitigation measures. Further analysis will be provided in the EIR to be prepared for this project. **a-iii, a-iv) Potentially Significant Impact.** Regarding ground failure such as liquefaction and landslides, the project site contains liquefaction hazard zones, as well as earthquake-induced landslide hazard zones identified by the California Division of Mines and Geology in its Seismic Hazard Zone Maps (California Geological Survey 1999). Further analysis is required, based on the results of a preliminary geotechnical investigations and report. This analysis would determine the scope and magnitude of project impacts relating to placing people and structures at risk of loss, injury, or death due to landslides and liquefaction, and to develop mitigation measures to avoid, reduce, or otherwise mitigate such impacts through

	appropriate project design and construction methods. Further analysis will be provided in the EIR to be prepared for this project. **b)** **Potentially Significant Impact:** The proposed development would include extensive grading activities that would remove existing ground cover and disturb existing soils. These disturbed soils could be exposed to wind and rain, thus potentially resulting in soil erosion. However, construction activities would need to comply with existing erosion control requirements. For example, the proposed development would comply with Southern California Air Quality Management District Rule 403, which would reduce the potential for wind erosion through a variety of dust control measures such as covering soil stockpiles, ceasing grading during high winds, and providing temporary soil binders. The project must also comply with the conditions of a General Construction Permit, pursuant to the National Pollutant Discharge Elimination System, which would reduce water erosion through requiring best management water quality control practices (e.g., erosion control measures) during construction. Compliance with these existing regulatory standards would generally avoid or reduce potential erosion impacts during construction to less than significant. Work within the floodplain and the stream course in the northern part of the site will require temporary means of maintaining storm flows while construction is in process. Further information and analysis of the construction activities in the floodplain and stream course area is required to determine whether the proposed plan contains sufficient measures to prevent erosion impacts and to identify additional measures, if warranted. Upon completion, the project would greatly reduce or eliminate erosion potential as compared with existing site conditions through construction of impervious surfaces throughout the developed areas. Landscaped areas, as well as manufactured slopes, would greatly reduce erosion potential when compared with existing conditions. Finally, the project proposes to channelize the flood zone in order to manage stormwater during high storm flows; this would reduce the potential for streambed erosion during storm events when stormwater flows could cause streambed scouring. Further analysis is needed to determine if the site runoff would substantially increase flows that could trigger erosion of the natural stream course in that area of the site. This analysis will also consider the potential beneficial effects of the proposed channel and revegetation improvements. Further analysis would identify measures to avoid, reduce, or otherwise mitigate potentially significant impacts through mitigation measures such as project design and construction methods. This analysis will be provided in the EIR to be prepared for this project. **c)** **Potentially Significant Impact:** As stated earlier in response a-iii, a-iv), the proposed project is located within a liquefaction hazard zone and an earthquake-induced landslide hazard zone. Given the scale of the proposed project, as well as the undulating terrain on which it would be constructed, further analysis is required, based on the results of a preliminary geotechnical investigation and report. This report would investigate possible geotechnical hazards that may affect the site, such as risks posed by landslides, liquefaction, and unstable soils resulting in lateral spreading, subsidence, or collapse. Further analysis would determine the scope and magnitude of project impacts related to unstable soil conditions and would identify measures to avoid, reduce, or otherwise mitigate potentially significant impacts through project design and construction methods. Further analysis will be provided in the EIR to be prepared for this project.

	d) **Potentially Significant Impact:** Further analysis is required to determine the subsurface conditions of the project site and whether the new homes, roads, and infrastructure would be located on any expansive soils. This additional analysis will be conducted as part of a geotechnical investigation and report to be completed and discussed in the EIR to be prepared for this project. **e)** **No Impact.** All of the wastewater generated by the proposed homes and on-site recreation facilities with plumbing systems would be discharged into the City of Santa Clarita municipal sewer system. No septic systems or other soil-based wastewater disposal systems would be part of the proposed project; therefore, the proposed project would have no impact related to soils incapable of supporting use of septic tanks. **f–h)** **Potentially Significant Impact:** The project site is characterized by steep hillsides in the southern and western portions of the project site, with a relatively flat northern portion of the site. The proposed project plan and grading envelope would disturb a majority of the site and substantially alter the existing ground surface character. The elevation ranges from approximately 1,365 feet above mean sea level (AMSL) near the northwest corner of the site to 1,520 feet AMSL near the southeastern corner of the site. A Conditional Use Permit would be required for this project site for the import/export of dirt in excess of 100,000 cubic yards of earth. Additionally, the proposed project would develop on land with average cross slopes of 10 percent or more, thus requiring Hillside Development Review by the City of Santa Clarita. Further analysis is required to determine the total volume of grading associated with the proposed project, and to evaluate the potential impacts of slope alterations, landform alterations, and extensive grading of the project site. This analysis would be informed by further geotechnical investigations and would determine whether any significant impact can be avoided, reduced, or otherwise mitigated through mitigation measures. Further analysis will be provided in the EIR to be prepared for this project. **i)** **No Impact:** Based on a field survey of the project site, and a review of the City of Santa Clarita's General Plan Safety Element (2011a) and Conservation and Open Space Element (2011b), there are no unique geologic or physical features on the project site. As such, the proposed project would have no impact resulting from destruction, covering, or modification of a unique geological or physical feature. No further review is required. ***Sources of Information*** California Geological Survey. 1999. Earthquake Zones of Required Investigation: Mint Canyon Quadrangle. Santa Clarita, City of. 2011a. General Plan Safety Element. Exhibit S-1 Earthquake Faults in Southern California Region. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/7%20-%20Safety%20Element.pdf. ———. 2011b. General Plan Conservation and Open Space Element. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
VII. GREENHOUSE GAS EMISSIONS	**a)** **Potentially Significant Impact:** Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). Based on numerous studies by climate scientists around the world, it has been shown that global temperatures have been rising as a result of more heat being

trapped by GHGs near the earth's surface. GHGs produced from human sources are widely seen as an important contributor to human-induced climate change. Globally, climate change has the potential to affect numerous environmental resources through impacts related to future air, land, and water temperatures and precipitation patterns. More specifically, according to the California Environmental Protection Agency's Climate Change Research Plan for California (2015), potential impacts of climate change in California may include worsened air quality, decreased snowpack and water supplies, sea level rise, an increase in extreme heat days per year, high ground-level ozone days, large forest fires, and drought.

Both natural processes and human activities emit GHGs, including the combustion of fossil fuels, agricultural practices, and landfills. The major sources of GHGs in California are transportation and industrial sources.

Construction of the proposed project would directly generate temporary GHG emissions, primarily due to the operation of construction equipment and truck trips. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling.

During the lifetime of the project, sources of GHG emissions include combustion of natural gas from heating and cooking related to the residential land uses, combustion of fossil fuels at electrical power generating plants that supply electricity to the local grid in this area, and automotive exhaust emissions from project-related vehicle trips. Other sources of GHG emissions may occur as a result of the use of consumer products, landscape maintenance, and the application of architectural coatings.

Further analysis is needed to quantify the project's direct and indirect generation of GHG emissions, and to examine the project's energy footprint with respect to applicable GHG reduction plans, policies and programs, as noted in the following response. This analysis will be conducted as part of the EIR being prepared for the project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

b) **Potentially Significant Impact:** In 2012, the City of Santa Clarita adopted a Climate Action Plan (CAP), which identifies the amount of GHGs emitted in Santa Clarita. The CAP establishes a 2005 base year and outlines a set of strategies to reduce the amount of GHGs produced in the city to a level that is consistent with the reduction goals identified in the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599). The CAP's target is to reduce total citywide emissions in 2020 to about 4 percent below the 2005 baseline level and to approximately 17 percent below a hypothetical 2020 business-as-usual level (defined as a level projected from anticipated growth, but without the local emissions reduction strategies set forth in the CAP). Although the project will ultimately be complete post-2020, it is appropriate to examine the project's characteristics relative to the applicable strategies in the City's CAP.

Other reduction plans and programs that may be considered to determine whether the project's GHG footprint could be significant include the 2016 Regional Transportation Plan/Sustainable Communities Strategy, prepared by the Southern California Association of Governments, pursuant

	to Senate Bill 375, and the California Air Resources Board's most recent Climate Change Scoping Plan. The project's GHG footprint will be examined in relation to the applicable plans, policies, and regulations adopted with the intent to reduce GHG emissions. This evaluation will be conducted as part of the EIR being prepared for the project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. ***Sources of Information*** California Environmental Protection Agency. *2015 Climate Change Research Plan for California*. http://climatechange.ca.gov/climate_action_team/reports/CAT_research_plan_2015.pdf. Santa Clarita, City of. 2012. *Climate Action Plan*. http://greensantaclarita.com/files/2012/10/APPROVED-CAP-AUGUST-2012.pdf.
VIII. HAZARDS AND HAZARDOUS MATERIALS	**a) Less Than Significant Impact:** Materials are generally considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode, or generate vapors when mixed with water (reactivity). The term "hazardous material" is defined in California Health and Safety Code Section 25501 as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment. The code additionally states that a hazardous material becomes a hazardous waste once it is abandoned, discarded, or recycled. The transportation, use, and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws. As a residential land use, the proposed project would involve the routine transport, use, and disposal of minor quantities of common household hazardous materials. These materials could include cleaning products, paints, solvents, adhesives, other chemical materials used in building maintenance and interior improvements, automotive lubricants, small combustion engine fuels and lubricants, expired pharmaceuticals, mercury thermometers, sharp or used needles, pesticides and herbicides, and electronic wastes from household and car batteries that are typical of residential land uses. This level of hazardous materials usage is considered acceptable in residential areas and has not been identified as a significant threat to the environment. Residents can dispose of household hazardous materials for free at any of the Los Angeles County Sanitation Districts' permanent disposal centers, and electronics can be disposed of at several private locations or electronic recycling events. The Los Angeles County Sanitation Districts and the Los Angeles County Department of Public Works sponsor household hazardous waste roundups, which are one-day events hosted on Saturdays at various locations around Los Angeles County. Also, S.A.F.E. (Solvents/Automotive/Flammables/Electronics) Collection Centers are permanent facilities that are open every weekend. The centers closest to the project site are in Sun Valley and Northridge. Based on the type of land use and the relatively minor level of usage, storage, and disposal of hazardous materials, along with the ready availability of household hazardous waste and electronic waste collection

	centers, the proposed project would not result in a significant impact involving the routine transport, use, or disposal of hazardous materials. **b)** **Potentially Significant Impact:** A foreseeable upset or accident involving hazardous materials could occur if project-related activities resulted in the release of hazardous materials or wastes. In general, this occurs if construction activities disturb contaminated soils or groundwater associated with current or past land uses on or within the vicinity of a site. The approximately 57-acre site is currently undeveloped, except for one single-family residence on the west side, and while there are no apparent hazardous materials concerns, additional research is needed to examine the potential for site contamination from prior land uses. Further evaluation of the project site in accordance with the American Society for Testing Materials Standard E1527-13 is required to determine the land use history of the project site and if there are any indicators that the project could result in an upset or accidental release of hazardous materials. This analysis, which may also include mitigation measures, will be provided in the EIR to be prepared for this project. **c)** **No Impact:** There are no schools located within one-quarter mile of the project site. The nearest school is Plum Canyon Elementary School, approximately 1.5 miles south/southwest of the project site. Moreover, the proposed residential development would not generate hazardous emissions or involve the handling of acutely hazardous materials, substances, or wastes. Regular handling of minor quantities of common household chemical agents and related materials would occur; however, as discussed in response a), a significant threat to the environment would not occur. **d)** **No Impact:** A review of the Geotracker database maintained by the California Water Resources Control Board, the Envirostar database maintained by the California Department of Toxic Substances Control, and the Cleanup Community Mapping maintained by the U.S. Environmental Protection Agency did not reveal the project site as listed on any databases compiled pursuant to Government Code Section 65962.5. Therefore, no impact would occur in relation to this issue. **e)** **No Impact:** There are no airports located within 2 miles of the project site, and the project site is not within an airport land use plan. The nearest public use airport is Van Nuys Airport, approximately 20 miles to the south. Therefore, the project would not result in a safety hazard for people residing or working in proximity to an airport, and the proposed project would have no associated impacts. **f)** **No Impact:** The project site is not in the vicinity of a private airstrip. There are no air transportation facilities, public or private, within 2 miles of the project site. Therefore, the project would not result in a safety hazard for people residing or working in proximity to a private airstrip, and the proposed project would have no associated impacts. **g)** **No Impact:** Both City and County emergency plans provide operational concepts, describe responsibilities, and outline procedures for emergency response. The County has adopted an Operational Area Emergency Response Plan, which describes the planned responses to emergencies associated with natural and man-made disasters and technological incidents. The City's 2003 Standardized Emergency Management Systems (SEMS) Multi-Hazard Functional Plan addresses planned responses to emergencies associated with natural disasters and technological incidents.

	The plan also identifies appropriate land use, design, and construction regulations to reduce losses from disasters. In addition, in 2006, the City of Santa Clarita adopted and implemented the National Incident Management System (NIMS), which provides another method of relaying emergency-related information is through the City's e-alert system. In relation to emergency evacuation, the Santa Clarita Valley has freeway access along three routes—Interstate 5 and State Route 14 going north and south, and State Route 126 going east and west—to use in the event of an emergency such as a fire or an earthquake. In addition, detour routes have been established through the Santa Clarita Valley if the local freeways are closed. Bouquet Canyon Road is not specifically designated as an emergency evacuation route. Traffic control during evacuation procedures would be based on the nature of the emergency and the condition of the roads. Temporary signage would be placed by the City and County Public Works Departments to ensure that evacuation routes are clearly marked for motorists. During the City's development review process for all pending development projects, emergency access is evaluated by the Los Angeles County Fire Department. Adequate road and driveway widths are required to provide access to fire trucks, along with turnouts and turnaround areas where deemed necessary. Given the size of the project (greater than 150 residential units), two access points are required. The project would provide a total of three access points: two along the current alignment of Bouquet Canyon Road and one along the future alignment of the new Bouquet Canyon Road. Furthermore, the project site is not utilized by any emergency response agencies, and no emergency response facilities exist in the project vicinity. Therefore, the proposed project would have no impact related to emergency response planning. **h)** **Potentially Significant Impact:** The project site is on approximately 57 acres of undeveloped land that is in a Fire Zone as designated on the City of Santa Clarita Fire Zone Map (Santa Clarita 2013) and within a Very High Fire Hazard Severity Zone on the California Department of Forestry and Fire Protection (2011) Local Responsibility maps. The project site, like many other undeveloped lands in the valley, is in a Very High Fire Hazard Severity Zone due to a combination of hilly terrain, dry weather conditions, and the presence of flammable native vegetation. In addition, the steep slopes on-site allow for the quick spread of flames during fires and pose difficulty for fire suppression due to access problems for firefighting equipment. The project applicant is required to comply with Los Angeles County Code Section 4908.1, Fuel Modification Plan in Fire Hazard Severity Zones, which requires any structure over 120 square feet located in a Very High Fire Hazard Severity Zone to create a fuel modification plan. Every fuel modification plan shall be reviewed by the Los Angeles County Fire Department Fuel Modification Unit for defensible space, fire safety, and compliance with Sections 325.2.1, 325.2.2, 325.10, and 503.2.1 of the Los Angeles County Code, the Fire Department's fuel modification guidelines, and California Code of Regulations, Title 14, Division 1.5, Chapter 7, subchapter 2. Compliance with these existing regulatory standards is mandatory, to be enforced through the City's standard building permit process.

	Further evaluation of the project is required to more closely examine development of a sizeable residential community in this wildland fire hazard area and compliance with applicable codes. This analysis, which may also include mitigation measures, will be provided in the EIR to be prepared for this project. **i) Less Than Significant Impact:** Hazards associated with overhead transmission lines range from exposure to electrical magnetic fields to live wires and flashovers when a person or equipment gets too close to an overhead line. Surface or subsurface-level natural gas or other fuel lines can pose risks when improper contact is made, resulting in leaks, fire, and/or explosions. No electrical transmission lines, gas lines, or other types of fuel lines extend across the site. Currently, there is an overhead electricity transmission line that extends from transmission poles aligned along Bouquet Canyon Road to the single-family residence in the western portion of the project site. Thus, the proposed project would not expose people to existing sources of potential health hazards from existing electrical, natural gas, or oil pipelines. The City of Santa Clarita Natural Hazard Mitigation Plan (2015) identifies that new development is to participate in undergrounding utilities when possible (Strategy SW-EW003); furthermore, the City's Municipal Code 17.57 requires that all utility lines less than 34 kilovolts are to be undergrounded and Municipal Code 4.04.480 requires that all utilities that can be undergrounded shall be undergrounded. Pursuant to these existing regulatory standards, all of the project's utility lines would be placed underground, in accordance with the specifications of the utility purveyor and the City's building codes, which are designed to ensure safe installations within residential communities. Proper compliance with the applicable standards for installation of underground utilities would reduce potential hazards associated with the project's on-site utility infrastructure to less than significant. ***Sources of Information*** California Department of Forestry and Fire Protection. 2011. *Fire Hazard Severity Zones in Local Responsibility Area.* http://www.fire.ca.gov/fire_prevention/fhsz_maps/FHSZ/los_angeles/Santa_Clarita.pdf. California Department of Toxic Substances Control. 2018. *EnviroStor Database.* Accessed September 19, 2018. https://www.envirostor.dtsc.ca.gov/public/. Santa Clarita, City of. 2013. *City of Santa Clarita Fire Zone Map*. https://www.santa-clarita.com/home/showdocument?id=2320. ———. 2015. *Local Hazard Mitigation Plan*. http://filecenter.santa-clarita.com/EmergencyMgmt/2015%20Hazard%20Mitigation%20Plan-Final%20Draft.pdf. State Water Resources Control Board. 2018. *Geotracker Database*. Accessed September 19, 2018. https://geotracker.waterboards.ca.gov/.
IX. HYDROLOGY AND WATER QUALITY	**a) Potentially Significant Impact:** The proposed project would change the site through extensive landform modification and by adding impermeable surfaces and urban land uses that would alter hydrological patterns and introduce new sources of water pollutants in site runoff. There is the potential for water pollutants to be generated in the short term during

	construction activities and in the long term due to the permanent changes to the site. Construction-related pollutants might include loose soils, liquid and solid construction materials and wastes, and accidental spills of concrete, fuels, and other materials. As an urban development, the proposed project would add typical, nonpoint-source pollutants to stormwater runoff, primarily due to runoff from impervious surfaces where a variety of pollutants can collect over time, such as driveways, streets, roofs, patios, and other paved surfaces. Landscaped areas can also generate water pollutants such as fertilizers and weed control agents, as well as green waste from landscape maintenance cuttings. Several measures to protect water quality and limit discharges are directed and implemented both through the preparation of various plans and adherence to established programs. As discussed below, the project will be required to demonstrate compliance with such plans and programs. Santa Clarita, including the project site, is mainly within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB), which is tasked with protecting the region's water quality and developing the region's water quality objectives that meet the standards set forth in Section 303 of the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act. The Los Angeles RWQCB defines water quality objectives and identifies strategies to protect the beneficial uses of regional waters through its Basin Plan. In addition, the National Pollutant Discharge Elimination System (NPDES) program (Section 402 of the Clean Water Act) regulates point source and nonpoint-source discharges to surface waters. Under this section, municipalities are required to obtain permits for the water pollution generated by stormwater in their jurisdictions. These permits are known as municipal separate storm sewer system (MS4) permits. Because the proposed project's stormwater runoff would be discharged into the local municipal storm drain system, it must be demonstrated that the runoff would be consistent with the standards established in the MS4 permit. Moreover, the City's Zoning Code Chapter 17.95, Standard Urban Stormwater Mitigation Plan Implementation, contains requirements for post-construction stormwater activities and facility operations of development and redevelopment projects to comply with the current MS4. In part, adherence requires that water quality impacts of development projects be lessened by using smart growth practices and integrating low-impact development (LID) design principles to mimic predevelopment hydrology through infiltration, evapotranspiration, and rainfall harvest. A LID plan is required for the proposed project to demonstrate compliance with the provisions of the City's Zoning Code. Lastly, to control construction-phase stormwater pollutants, the project applicant is required to prepare a stormwater pollution prevention plan (SWPPP), pursuant to the Statewide General Construction Permit (State Water Resources Control Board 2009-0009-DWQ Construction General Permit). The SWPPP must contain details of best management practices, including desilting basins or other temporary drainage or control measures, or both, as may be necessary to control construction-related pollutants. The City cannot issue a grading permit for the project until the SWPPP has been submitted to and approved by the City engineer. As with most residential developments, the project is a nonpoint source of pollution (pollutants resulting from diffused sources) and is not subject to

	waste discharge requirements of the Los Angeles RWQCB, which regulates point-source pollutants that originate from a single identifiable source. However, further research of the project's construction and long-term operational water quality impacts is required to determine whether there could be a conflict with the water quality objectives for this area, as established in the RWQCB Basin Plan. This analysis will include review of a preliminary SWPPP, a pre- and post-development hydrology study, and a LID plan as part of the EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **b) Potentially Significant Impact:** The project does not include any groundwater extraction wells because all water demand would be met through piped connections to the Santa Clarita Valley Water Agency's municipal water system. In relation to groundwater recharge, the Santa Clara River and its tributaries are the primary groundwater recharge areas for the Santa Clarita Valley. According to the Santa Clarita General Plan Conservation and Open Space Element (Santa Clarita 2011a), it appears that portions of the project site may be within the Saugus and Alluvial Aquifer recharge areas. As discussed in response a) above, the proposed project would alter site drainage through extensive landform modifications and by adding impermeable surfaces, which could change the rate of groundwater recharge. Further evaluation is required to determine whether the proposed development plan could significantly affect groundwater recharge to the extent that it could reduce the level of a groundwater aquifer and/or adversely affect the performance of existing groundwater wells in the vicinity. This additional analysis will be conducted as part of the EIR to be prepared for the proposed project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **c) Potentially Significant Impact:** The proposed project would channelize part of the flood zone through the site to carry high storm flows, and the natural landscape in that area would be altered to construct flood control improvements. Further analysis of the proposed flood control improvements is needed to examine the potential to induce or worsen potential erosion due to channelizing storm flows. Additionally, site conditions would transition from primarily undeveloped to, post-development, a combination of impervious surfaces and landscaped conditions, which would increase the rate and amount of site runoff that might result in increased erosion potential, on- or off-site. Further analysis of the hydrological characteristics of the developed site is required to determine whether the proposed drainage system and site improvements could induce or worsen erosion on- or off-site. This additional analysis will be conducted as part of the EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **d) Potentially Significant Impact:** There is a Federal Emergency Management Agency (FEMA) designated flood hazard zone mapped along the drainage course that traverses from the north-central portion to the northeastern portion of the site. The project would channelize part of the flood zone through the site to carry high storm flows while retaining a natural stream course for low flows. Proposed project changes to the existing hydrology and the modification or elimination of the existing flood hazard zone must be approved by FEMA.

	Further evaluation is required to determine the amount and pattern of runoff as a result of site modifications, including channelization of the flood zone and the increase in impervious surfaces, and if the project could result in significant flooding impacts on- or off-site. This evaluation will be conducted as part of the EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **e)** **Potentially Significant Impact:** The project will alter the existing landscape through grading and excavation and the construction of 461 residential units and associated infrastructure, which will introduce impervious surfaces into the project area. Collectively, these modifications would change the pattern and volume of runoff from present conditions and, potentially, the amount of stormwater that enters the municipal storm drain system. Based upon a preliminary review of the proposed project, it does not appear that the project would generate a substantial additional source of stormwater pollutants beyond those typical of residential land uses. Nonetheless, in addition to evaluating the ability of the municipal storm drain system to accommodate the project, further evaluation of the project's new sources of runoff and potential to generate any unusual water pollutants will be included in the EIR being prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **f)** **Potentially Significant Impact:** While no other potential sources of water quality degradation have been identified beyond those discussed in responses a), c), and e), further evaluation of the project's runoff characteristics and storm drainage plan will be conducted in the EIR to be prepared for the proposed project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **g)** **Potentially Significant Impact:** The FEMA Flood Insurance Rate Map (FIRM) for the project area identifies the northeastern part of the project site as being in a Zone A flood hazard area, which is an area subject to flooding in the 100-year event. A 100-year event is defined as any area that has a 1 percent chance of flooding in any given year. The project includes the channelization of the flood zone and the retention of the natural drainage course to accommodate low flows, and adjustments to the existing base flood mapping. Based on the proposed site plan, the project would not place any homes within a flood hazard zone. However, the proposed modifications to the base flood mapping will require FEMA approval, including a Conditional Letter of Map Revision prior to the issuance of grading permits and a Letter of Map Revision prior to the issuance of occupancy permits. Further review of the project's hydrology study regarding modifications to the base flood mapping is required to ensure that the hydrology analysis is consistent with FEMA standards and City criteria and to verify that the project would not place housing within a designated flood hazard area and would cause no related significant impacts. This additional review will be conducted as part of the EIR to be prepared for the proposed project. **h)** **Potentially Significant Impact:** See response g) above. Additional analysis is also required to verify that no structures would be placed within the modified flood hazard zone that could impede or redirect flood flows. This analysis will be conducted as part of the EIR to be prepared for the proposed project.

i) **Potentially Significant Impact:** According to Figure S-3 (Seismic Hazards) in the City's General Plan Safety Element (Santa Clarita 2011b, p. S-12), the project site may be in an inundation area as a result of the failure of the dam along the Bouquet Reservoir. Therefore, the proposed project may expose people or structures to a risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam, and this will be further evaluated in the EIR being prepared for the proposed project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

j) **Potentially Significant Impact:** There are no bodies of water near the project site that are capable of producing a seiche or tsunami. Mudflows occur in areas where slope stability is compromised. As discussed in Section VI, Geology and Soils, of this Initial Study, the project's slope stability and susceptibility to landslides or other ground or slope failure will be further evaluated as part of the EIR being prepared for the proposed project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

k) **Potentially Significant Impact:** The project would alter the site's drainage patterns, including the channelization of an existing flood zone. In addition, the project involves grading and excavation for the development of the 461 residential units and associated infrastructure, which will alter the existing drainage patterns on the project site. Further evaluation of the project's hydrological characteristics and the alteration of the site's hydrological patterns is needed to determine if the project will have significant impacts on the rate of flow, currents, or the course and direction of surface water and groundwater. This evaluation will be conducted as part of the EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

l) **Less Than Significant Impact:** As previously discussed in responses c), d) and g) above, the project will result in the alteration of the natural drainage course on-site and the channelization of the flood zone. There are no other washes, creeks, or rivers that will be impacted by the proposed project. The Santa Clara River is approximately 2 miles south of the project site and site development will not have a direct effect on the geomorphic conditions of the river. Thus, given there are no other washes, creeks, or rivers affected by the project, the project will have a less than significant impact in relation to this issue.

m-i–vii) Potentially Significant Impact: Please refer to responses a) through f), above. In addition, further analysis of potential impacts to the biological integrity of the natural drainage features on-site will be addressed as part of the assessment of impacts to biological resources; please refer to responses b) and c) in Section IV, Biological Resources, in this Initial Study. Please refer to the responses to f) and g) in Section XVIII, Utilities, regarding less than significant impacts related to handling of solid waste materials during construction and throughout the operating life of the project.

Sources of Information

Federal Emergency Management Agency. 2018. Flood Map Viewer. Accessed September 21. https://msc.fema.gov/portal/search?AddressQuery=Bouquet%20Canyon%20Road%20and%20Fan%20Court%2C%20S.

	Santa Clarita, City of. 2011a. City of Santa Clarita General Plan Conservation and Open Space Element. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf. ———. 2011b. City of Santa Clarita General Plan Safety Element. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/7%20-%20Safety%20Element.pdf.
X. LAND USE AND PLANNING	**a)** **Less Than Significant Impact:** Currently the project site is primarily undeveloped. There is a single residence in the northwestern portion of the site. There is no existing access through or around the site; Bouquet Canyon Road, which borders the western and northern edges of the site, provides the sole access to the project area. Additionally, with the exception of utility infrastructure being provided to the single residence, there are no utilities extending across the site. Neighborhoods of single-family homes surround the site to the west, north, and south. Two probation camps operated by the County of Los Angeles are located just east of the site, and a neighborhood commercial center is situated along Bouquet Canyon Road, just to the southwest of the site. Bouquet Canyon Road is the primary travel route in this area. The physical division of an established community is typically associated with the construction of a linear feature, such as a major highway or railroad tracks, or the removal of a means of access, such as a local road or bridge, which would impair mobility within an existing community or between a community and an outlying area. As noted in the project description of this Initial Study, a major project component includes the closure and abandonment of a portion of Bouquet Canyon Road, between Pam Court and Hob Avenue, and construction of a new segment of Bouquet Canyon Road through the southern portion of the site. The new alignment is consistent with the Santa Clarita General Plan Circulation Element, which indicates that the realignment of this portion of Bouquet Canyon Road is needed to implement future roadway improvements recommended in the City's Highway Plan (Table C-3). Closure of the existing segment of Bouquet Canyon Road between Pam Court and Hob Avenue would not separate the adjoining residential neighborhoods from the rest of the community, as the road already represents a strong edge feature that separates those homes from the project site. Vehicular access to all of those homes would remain available from Bouquet Canyon Road on both sides; therefore, local vehicular circulation and access to the nearby homes would not be seriously disrupted. No new major supporting infrastructure facilities would need to be constructed and extended to the project site that could result in a physical disruption to an established land use or the local pattern of development. Overall, the project would result in the conversion of this undeveloped site into residential and urban land uses, not an intrusion into an established neighborhood. As such, the project would represent an expansion of an existing residential area. The modifications to existing Bouquet Canyon Road and construction of the new segment of that street would have a less than significant impact on the physical structure of the established community. **b)** **Less than Significant Impact:** The City of Santa Clarita General Plan (2011b) designates the project site as Urban Residential 2 (UR2) and

	Urban Residential 5 (UR5). The site zoning classifications are identical to these land use designations. According to the City of Santa Clarita General Plan Land Use Element (2011b), the UR2 land use designation could include single-family homes and other residential uses at a maximum density of 5 dwelling units per 1 acre, and specific allowable uses and development standards shall be determined by the underlying zoning designation. Likewise, the UR5 land use designation provides for medium- to high- density apartment and condominium complexes in areas easily accessible to transportation, employment, retail, and other urban services. Allowable uses in this designation include multiple family dwellings at a minimum density of 18 dwelling units per 1 acre and a maximum density of 30 dwelling units per 1 acre. Similarly, the UR2 zoning provides for residential neighborhoods that typify much of the planning area, with uses such as single-family homes and other residential uses at a maximum density of 5 dwelling units per acre. The UR5 zoning provides for medium- to high-density apartment and condominium complexes in areas easily accessible to transportation, employment, retail, and other urban services. Allowable uses in this designation include multiple family dwellings at a minimum density of 18 dwelling units per acre and a maximum density of 30 dwelling units per acre. The project proposes the clustered development of 461 residential units located within five distinct planning areas, and would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. Parkland and recreational amenities include a hilltop park, five neighborhood parks, a linear park, a tot lot, and two private recreation sites. The proposed residential land use mix and densities represent a combination of both the UR2 and UR5 land use standards. This is considered to be consistent with the General Plan land use policies and zoning standards for the project site. The project will require a Ridgeline Alteration Permit, for development near a designated significant ridgeline in the northwestern portion of the site, which lies within a ridgeline preservation overlay zone. This is not considered to be a significant land use impact; however, the proposed encroachment or development along this ridgeline could result in significant aesthetic effects, which will be analyzed further in the EIR being prepared for the project as noted in Section I, Aesthetics, responses a) and b) of this Initial Study. The City of Santa Clarita General Plan Conservation and Open Space Element (2011c) does not identify any land use restrictions for the project site that would require conservation of part or all of the site as permanent open space for purposes of protecting wildlife habitat or other natural resources, or to avoid a hazard. Thus, the proposed project would not conflict with land use policies established in the Conservation and Open Space Element. The project site is not in an area that is subject to a specific plan or a local coastal program. Therefore, since the project would not conflict with any applicable land use plans, policies, or regulations, impacts are less than significant in relation to this issue.

	c) **No Impact:** As discussed in Section IV, Biological Resources, response f) of this Initial Study, the project site is not within a habitat conservation plan, natural community conservation plan, or other approved environmental resource conservation plan. Therefore, the project would not conflict with any adopted environmental conservation plans, and the project would have no related impacts. ***Sources of Information*** Santa Clarita, City of. 2011a. *General Plan Circulation Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/4%20-%20Circulation%20Element.pdf. ———. 2011b. *General Plan Land Use Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/2%20-%20Land%20Use%20Element.pdf. ———. 2011c. *General Plan Conservation and Open Space Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
XI. MINERAL AND ENERGY RESOURCES	**a, b)** **No Impact:** The project site is not within an Existing Mineral Extraction Area, nor is it within a Mineral Resource Zone, identified on Exhibit CO-2 (Mineral Resources) of the City's General Plan Conservation and Open Space Element (Santa Clarita 2011, p. CO-9). There are no producing, idle, or abandoned oil or natural gas wells, or any other types of mineral extraction activities on or near the site. The only nearby resource listed on Exhibit CO-2 is Placer Gold Gulch, approximately 1 mile southeast of the project site. The project site is not within a Community or Specific Plan and currently has a General Plan Land Use designation of Urban Residential 2 and Urban Residential 5. Mineral recovery is not an allowable use in these zones. Given the lack of known mineral resources on the site, as well as the City's zoning and land use regulations that prohibit mineral extraction, the project would have no impact on the availability of a known resource of value to the region or the state. **c)** **Potentially Significant Impact:** The proposed project would use a variety of building materials and energy resources during construction and would consume energy over the long-term operating life of the completed residential community. Many of the resources utilized for construction are nonrenewable, including sand, gravel, soils, metals, and hardscape materials, along with petroleum-based fuels to power construction machinery and vehicles. A highly competitive construction economy encourages the efficient use of materials and manpower during construction to both be cost-effective and meet financial goals. The proposed project would not require any unique construction methods or materials that would consume nonrenewable resources in an unusually intensive manner. As such, this project is not expected to consume nonrenewable resources during construction in a wasteful or inefficient manner. In addition, the proposed project would commit energy and water resources as a result of the long-term operation and maintenance of the development. Water resources are considered to be renewable through the natural hydrological cycle, although in Southern California, fresh water is a scarce resource during periodically prolonged drought conditions. Much of the electrical energy that would be utilized on-site would be generated

	through off-site combustion of nonrenewable fossil fuels at distant power generation facilities. In accordance with Appendix F of the CEQA Guidelines, further analysis of the project's energy consumption characteristics is required to determine whether the project would consume nonrenewable energy resources in a wasteful and inefficient manner. This additional analysis will be provided in the EIR to be prepared for this project. ***Sources of Information*** Santa Clarita, City of. 2011. *General Plan Conservation and Open Space Element.* https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
XII. NOISE	**a) Potentially Significant Impact:** The noise standards that apply to the proposed project include those in the Santa Clarita General Plan, the City's Municipal Code (Chapter 11.44, Noise Limits), and the California Building Code Standards, Title 24. The General Plan Noise Element, Exhibit N-8, identifies the normal acceptable range for residential low-density single-family homes and residential multifamily as 50-60 dBA community noise equivalent level (CNEL) (Santa Clarita 2011, p. N-31). Further, Policy N 3.1.1 sets an interior standard of 45 CNEL for residential development, and Policy N 3.1.2 requires developers of new residential units in neighborhoods where exterior noise levels exceed 65 CNEL to provide mitigation measures to reduce outdoor noise levels to 65 CNEL. Municipal Code Chapter 11.44 states that for residential zones, the base noise level shall not exceed 65 dBA Leq during the day and 55 dBA Leq during the nighttime, which is the equivalent of 65 dBA Leq CNEL. Similar to the Noise Element's stated interior standard of 45 CNEL, the California Building Code Standard, Title 24 states that interior noise levels attributed to exterior sources shall not exceed 45 dBA CNEL in any habitable room. The proposed project would generate both short-term construction noise and long-term operational noise. Further analysis is required to quantify the timing and the level of noise generation resulting from construction and operation of the proposed project and determine whether the City's noise standards could be exceeded, and to identify measures to avoid, reduce, or otherwise mitigate potentially significant impacts through project design and construction methods. Further analysis will be provided in the EIR to be prepared for this project. **b) Potentially Significant Impact:** Project construction is anticipated to generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of some types of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. If any blasting should be needed to break up hard rock within proposed grading areas, there could be ground vibrations from that activity, as well. The effect on buildings in areas surrounding the project site would vary depending on the distance from the vibration source, as well as soil type, ground strata, and construction characteristics of the buildings. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from

	construction activities rarely reach levels that damage structures. Impacts could also include human annoyance, which occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations (FTA 2006). In general, the FTA architectural damage criterion for continuous vibrations for non-engineered timber and masonry buildings is 0.2 inches per second. The project site is surrounded by neighborhoods of single-family homes to the west, north, and south; land owned and partially developed by the County of Los Angeles Probation Department to the east; and a commercial strip center along Bouquet Canyon Road to the south. Because the nearest homes and commercial or institutional structures are at a distance from the project site, serious vibration problems are not anticipated. Nonetheless, further analysis of construction period ground vibration is required to determine whether there could be a significant impact at existing structures nearest the construction activity. Further analysis would also identify measures to avoid, reduce, or otherwise mitigate potentially significant impacts through project design and construction methods, if warranted. Further analysis will be provided in the EIR to be prepared for this project. **c)** **Potentially Significant Impact:** Permanent noise would most likely result from long-term habitation and maintenance of the project site, specifically from residential areas, outdoor recreation areas, property maintenance, and automobile traffic associated with the development. As stated in response a), the General Plan Noise Element (2011) identifies the normal acceptable range for residential low-density single- family homes and residential multifamily as 50-60 dBA CNEL. Further, Noise Element Policy N 3.1.1 sets an interior standard of 45 CNEL for residential development, and Policy N 3.1.2 requires developers of new residential units in neighborhoods where exterior noise levels exceed 65 CNEL to provide mitigation measures to reduce outdoor noise levels to 65 CNEL. A quantitative noise study is required to further analyze and determine the scope and magnitude of project-related traffic noise and on-site operational activities on permanent ambient noise levels in the project vicinity, to determine whether any project-related noise increase could have a significant impact on surrounding land uses. If warranted, this analysis will also identify measures to avoid, reduce, or otherwise mitigate potentially significant impacts to ensure off-site noise levels do not exceed the City of Santa Clarita's noise standards. The noise study will be provided in the EIR to be prepared for this project. **d)** **Potentially Significant Impact:** Grading and site preparation, truck transport of large machinery and building materials, and construction of site improvements would temporarily increase ambient noise levels in the project vicinity. Construction noise could adversely affect the noise environment at surrounding land uses. The project would not include any long-term periodic noise increases from activities typically associated with residential land uses. Further analysis via a quantitative noise study is required to determine the scope and magnitude of temporary construction activities on ambient noise levels and to identify measures to avoid, reduce, or otherwise mitigate potentially significant impacts through project design and construction methods. Further analysis will be provided in the EIR to be prepared for this project.

	e) **No Impact:** There are no public airports in the City of Santa Clarita. As such, the proposed project would not be within 2 miles of a public airport, and it would not expose potential residents or workers to excessive noise levels. There would be no impact from this project. **f)** **No Impact:** There are no private airports in the City of Santa Clarita, or within the nearest unincorporated area. As such, the proposed project would not be located in the vicinity of a private airport, and it would not expose potential residents or workers to excessive noise levels. There would be no impact from this project. ***Sources of Information*** FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*. Chapter 12, Noise and Vibration During Construction. Santa Clarita, City of. 2011. *General Plan Noise Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/5%20-%20Noise%20Element.pdf.
XIII. POPULATION AND HOUSING	**a)** **Less than Significant Impact:** Growth-inducing impacts are caused by those characteristics of a project that foster or encourage population and/or economic growth. According to the California Department of Finance (DOF), the population of Santa Clarita in 2018 is 216,589, and the city contains a total of 74,294 housing units (DOF 2018).[1] The proposed project would add 461 dwelling units to the city's housing stock, which is expected to add 1,392 residents to the City's population (based on the city's average persons per household of 3.02, as reported by DOF in 2018). This would represent a 1.9 percent increase to the city's 2018 population, as reported by DOF, which is considered to be a less than significant increase. The project site is currently zoned as Urban Residential 2 and Urban Residential 5 in the City's General Plan Land Use Element (Santa Clarita 2011). The proposed project to develop 461 dwelling units is consistent with the General Plan's Land Use Element and does not require a land use or zoning change. The City's General Plan Housing Element (Santa Clarita 2013a) identifies a large portion of the project site as "Housing Site 2"; it notes that the site is currently vacant apart from one home, is zoned Urban Residential 5, and could allow for up to 1,360 units when considering current classification with density bonus allowances. The Housing Element further notes that the site's topography and floodway constraints mean that fewer than 1,360 units could be reasonably accommodated on the site (the Housing Element estimates 300 units on the site identified as 36.3 acres). Therefore, the proposed project is consistent with the City of Santa Clarita's General Plan Land Use Element and Housing Element. The Southern California Association of Governments (SCAG) develops socioeconomic estimates and growth projections for cities and transportation analysis zones within the SCAG region. These growth projections are used for SCAG's transportation planning, as well as referenced by many cities when planning for growth in their areas. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) lists a 2012 population for Santa Clarita of 202,000 (SCAG 2016). SCAG forecasts that the population of Santa Clarita will increase to 220,600 by 2020, and 250,900 by 2035. The increase in population resulting from the proposed project would account for 7 percent

[1] Number of housing units includes 44,707 single detached units; 8,592 single attached units; 3,113 two to four attached units; 15,279 five or more attached units; and 2,603 mobile homes.

	of the population growth between 2012 and 2020 and would account for 3 percent of population growth between 2012 and 2035. This increase is considered to be less than significant, as it is well within the total population growth forecast in the current RTP/SCS. The realignment of Bouquet Canyon Road associated with the proposed project is consistent with the City's General Plan Circulation Element (Santa Clarita 2013b) and does not represent an extension of road infrastructure to currently unserved areas. Since the project is consistent with the City's General Plan elements and with growth forecasts for the city, the project would not have significant growth-inducing impacts. Nonetheless, growth-inducing effects will be discussed in the EIR to be prepared for this project, as required by CEQA Guidelines Section 15126 (d). **b) Less than Significant Impact:** The project site is mostly vacant apart from one home on the northwestern side of the project site. The proposed project would remove the home and construct 461 residential dwelling units on the 57.1-acre site. One alternative project design option still under consideration would retain the occupied home and develop around that property. Under the current proposed design, the development would only result in the removal of that one existing home and would therefore not displace a substantial number of existing housing units, which would require replacement of housing elsewhere. As such, the proposed project would have a less than significant impact. **c) Less than Significant Impact:** The project site is mostly vacant apart from one home on the northwestern side of the project site. As stated, the proposed project would remove the home and construct 461 residential dwelling units on the 57.1-acre site. One alternative project design option still under consideration would retain the one home and incorporate it into the development's design. The household size of the home is not known; however, it is estimated at fewer than 10 people. Therefore, the proposed project would not displace a substantial number of people that would require replacement housing elsewhere. As such, the proposed project would have a less than significant impact. ***Sources of Information*** DOF (California Department of Finance). 2018. Table 2: E-5 City/County Population and Housing Estimates, 1/1/2018. http://www.dof.ca.gov/forecasting/demographics/Estimates/E-5. Santa Clarita, City of. 2011. *General Plan Land Use Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/2%20-%20Land%20Use%20Element.pdf. ———. 2013a. *General Plan Housing Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/8%20-%20Housing%20Element.pdf. ———. 2013b. *General Plan Circulation Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/4%20-%20Circulation%20Element.pdf. SCAG (Southern California Association of Governments). 2016. 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction.
XIV. PUBLIC SERVICES	**a-i) Potentially Significant Impact:** The new residential community of 461 homes and related site improvements and the associated increase in

	population would create a demand for fire department services, such as the need to protect the new homes in the occurrence of a fire event and emergency medical response. Fire suppression and emergency medical response services for the project site and the surrounding area are provided by the Los Angeles County Fire Department (LACoFD). The EIR to be prepared for this project will examine potential impacts to LACoFD services in relation to the established standards for response times, staffing, and the provision of adequate resources. Further evaluation is required, including communication with LACoFD, to determine project impacts in relation to the ability of LACoFD to maintain acceptable service ratios, response times, and/or other performance objectives. This research and impact assessment will be conducted as part of the EIR. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **a-ii) Potentially Significant Impact:** The proposed project would add 461 residential units and associated infrastructure and introduce new persons into the project area. Correspondingly, the project would result in a demand for police protection services in relation to potential criminal activity related to property crimes or crimes against persons. Law enforcement services in Santa Clarita are provided by the Los Angeles County Sheriff's Department (LASD). The EIR to be prepared for this project will examine potential impacts to LASD services in relation to the established standards for response times, staffing, and the provision of adequate resources. Further evaluation is required, including communication with LASD, to determine project impacts in relation to the ability of LASD to maintain acceptable service ratios, response times, and/or other performance objectives. This research and impact assessment will be conducted as part of the EIR. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **a-iii) Potentially Significant Impact:** The proposed project would add 461 residences to the city's housing stock, which would increase the residential population. It is difficult to predict the level of household occupancy for the proposed units, as there are many variables in household formations, e.g., housing types, economic conditions, and household characteristics. However, future households may include one or more school-aged children who would attend local elementary, middle, and/or high schools. The project site is within the service boundaries of both Saugus Union School District and the William S. Hart Union High School District. The EIR will examine potential impacts to school services in relation to school capacities and the provision of adequate resources. Further evaluation is required, including communication with the two districts, to determine project impacts in relation to the ability of the districts to maintain acceptable classroom size, school capacities, or other performance objectives. This research and impact assessment will be conducted as part of the EIR being prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **a-iv) Potentially Significant Impact:** The project involves the development of 461 residential units, which will increase the population in the City of Santa Clarita. These new residents would likely utilize parks within the project site and the greater project area.

	Currently, the City of Santa Clarita operates 21 city parks that offer a variety of recreational amenities. Project implementation would result in the development of a hilltop park, five neighborhood parks, a linear park, a tot lot, and two private recreation sites. The City has established a ratio of 5 acres of parkland per 1,000 persons. The EIR will examine potential impacts to park facilities in relation to the established standards and the provision of adequate resources. Further evaluation is required to determine project impacts in relation to the City's ability to maintain acceptable service ratios and/or other performance objectives. This research and impact assessment will be conducted as part of an EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **a-v) Less Than Significant Impact:** Future residents of the developed project may occasionally visit other public facilities such as senior centers, community centers, pools, and libraries. All of these facilities are intended to serve the general public. The added population from this project would have a less than significant impact on the facilities, as only a small percentage of the project's total residents would visit a particular facility on a given day. The proposed project would not individually result in a need to construct new types of "other" public facilities. Additionally, as required by Santa Clarita Municipal Code Section 17.51.010(C), no land use permit or entitlement for a residential use is to be approved unless payment of the Library Facilities and Technology Mitigation Fee is made a condition of approval for any such entitlement. Payment of this fee would sufficiently offset the project's incremental increase in demand for local public libraries and contribute to the City's efforts to improve existing libraries and resources. The project would not result in a need to construct new libraries. Impacts would be less than significant. ***Sources of Information*** Santa Clarita, City of. 2008. *Parks, Recreation, and Open Space Master Plan Update*. https://www.santa-clarita.com/home/showdocument?id=2325. ———. 2011. *General Plan Conservation and Open Space Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
XIV. RECREATION	**a) Less Than Significant Impact:** The introduction of 461 residential units would correspondingly introduce persons into the project area who would use recreational facilities both within the project site and those in the greater vicinity. According to the City of Santa Clarita Parks, Recreation, and Open Space Master Plan Update (Master Plan), the City operates 21 parks, totaling 342 acres and ranging in area from about 0.5 to 80 acres, which provide a wide range of recreational facilities (Santa Clarita 2008). The Master Plan identifies 12 neighborhood parks, 2 regional parks, 3 county parks, and 5 community parks in the city. There are also dozens of passive and special use parks in the city and over 85 miles of off-street trails, which includes undeveloped trails and paseos. The Santa Clarita General Plan Conservation and Open Space Element (Santa Clarita 2011) identifies 13 County parks throughout the City's planning area, totaling 578 acres of

	parkland, plus nearby National Forest areas that also provide recreational options. Collectively, these facilities provide a variety of amenities such as child play areas, swimming pools, picnic areas, facilities for league sports, disc golf, equestrian trails, a skate park, campgrounds, hiking trails, cultural enrichment, and passive open space. The project itself would provide a variety of recreational facilities, including a hilltop park, five neighborhood parks, a linear park, a tot lot, and two private recreation sites. The residents in the development would likely visit and utilize the various existing parks, recreation facilities, and trails throughout the city and neighboring unincorporated areas. However, these visits would be intermittent and would not occur en masse. The existing park and recreation facilities can accommodate this type of occasional use and would not experience a physical deterioration from these types of uses and visits. Therefore, the project itself would not lead to substantial physical deterioration of any recreational facilities and would have less than significant impacts. **b) Less Than Significant Impact:** The proposed project includes the development of a hilltop park, five neighborhood parks, a linear park, a tot lot, and two private recreation sites. The proposed project does not involve, and would not require, the construction or expansion of off-site recreational facilities. The environmental effects associated with conversion of the presently undeveloped areas where the project's recreation facilities are proposed are discussed elsewhere in this Initial Study. There would be no unique or extreme effects attributable to the proposed recreational functions, as the on-site recreation areas would largely be limited to activities by on-site residents, with additional, low-intensity activity from the general public that would visit the site to access the public trails and the hilltop park. Therefore, the proposed on-site recreational facilities would have a less than significant impact. No further analysis is required. ***Sources of Information*** Santa Clarita, City of. 2008. *Parks, Recreation, and Open Space Master Plan Update*. https://www.santa-clarita.com/home/showdocument?id=2325. ———. 2011. *General Plan Conservation and Open Space Element.* https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
XVI. TRANSPORTATION/ TRAFFIC	**a) Potentially Significant Impact:** The project site is located on the eastern and southern sides of Bouquet Canyon Road, between Copper Hill Drive to the north and Plum Canyon Road to the south. Bouquet Canyon Road and Copper Hill Drive are classified by the City of Santa Clarita General Plan Circulation Element as existing secondary highways (4 lanes), and Plum Canyon Road is characterized as an existing major highway (6 lanes). The proposed project conforms with Exhibit C-2 (Circulation Map Joint Highway Plan) in the Circulation Element (Santa Clarita 2011, p. C-17), which shows a new alignment of Bouquet Canyon Road through the southern part of the site as a segment of "Secondary Highway-Proposed." Preparation of a detailed traffic impact study (TIS) is required to calculate the magnitude of project impacts regarding trip generation and circulation, and the effects on the performance of the surrounding street and highway network. This analysis will include a review of trip generation, trip

	distribution, and circulation for existing conditions, ambient growth conditions, and full project buildout. The TIS will follow City of Santa Clarita traffic study guidelines and will be consistent with guidelines set forth in the Los Angeles County Congestion Management Program (Metro 2010). The TIS will also examine potential effects on local circulation and access to adjacent neighborhoods, due to the proposed closure of the segment of existing Bouquet Canyon Road, between Pam Court and Hob Avenue, and the rerouting of traffic along the proposed new segment of Bouquet Canyon Road. If significant impacts to local circulation or to the level of service (LOS) of impacted intersections and roadways are identified, the TIS would also identify measures to avoid, reduce, or otherwise mitigate potentially significant impacts. The TIS will be included in the EIR to be prepared for this project. **b)** **Potentially Significant Impact:** The Los Angeles County Metropolitan Transportation Authority (Metro) adopted its most recent Congestion Management Program (CMP) in 2010 (Metro 2010). The CMP determines the geographic area for study with the following criteria: all CMP arterial monitoring intersections, including monitored freeway on- or off-ramp intersections, where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours. The CMP criteria for determining a significant impact is an increase in demand by 2 percent of capacity, causing LOS F. If the facility is already at LOS F, a significant impact occurs when the proposed project increases demand by 2 percent of capacity. The closest CMP monitoring station is located at the intersection of Magic Mountain Parkway and Valencia Boulevard. Further analysis is required to determine whether the amount of project-generated traffic at that intersection would be 50+ and thus trigger further review under CMP analysis requirements. This analysis will be included in the TIS to be prepared as part of the EIR for this project. **c)** **No Impact:** The project site is not within an airport land use plan or near a public airport or public use airport, as there are no airports in Santa Clarita. Consequently, the proposed project would not affect any airport facilities and would not cause a change in the directional patterns of aircraft. Therefore, the proposed project would not impact air traffic patterns. **d)** **Potentially Significant Impact:** The proposed project is primarily residential, with supporting recreation and surface parking facilities; there would be no risk of hazards associated with traffic generated by incompatible uses (such as farm equipment) occurring as a result of this development. Vehicle movement into and out of the proposed project would be via one gated entrance on old Bouquet Canyon Road (on the northwest side of the project site), one gated entrance on the proposed new section of Bouquet Canyon Road (on the south side of the project site), one non-gated entrance off of old Bouquet Canyon Road (on the northeast side of the project site), and one surface parking lot on the southeast side of the project site, allowing non-residents to access the site's trailhead without entering the community. Further analysis is required to determine if the proposed project's design would create hazards at entrance and exit intersections and whether any significant impact can be avoided, reduced, or otherwise mitigated through mitigation measures. The proposed design of the new segment of Bouquet Canyon Road will also be examined to verify that it conforms to the City's street design standards, particularly with respect to the connections to the existing Bouquet Canyon Road at each end. Further analysis will be

included in the TIS, which will be provided in the EIR prepared for this project.

e) **Potentially Significant Impact:** The project's ingress/egress and circulation are required to meet the Los Angeles County Fire Department's standards, which ensure that new developments provide adequate access for emergency vehicles. The internal network of surface streets serving the residences in the community would be 26 feet wide and would not permit street parking to allow ample space for their use as fire lanes. Final project plans are subject to review and approval by the fire department to ensure that the site's access complies with all department ordinances and policies. With the required compliance with all ordinances and City review procedures, the project design would not cause significant impacts due to inadequate emergency access.

During the project construction phases, when the existing segment of Bouquet Canyon Road between Hob Avenue and Pam Court is closed, and the proposed new segment of Bouquet Canyon Road is under construction, there may be a period of time when the neighborhoods that are accessed from Hob Avenue and Pam Court are

While vehicular access would be maintained to all surrounding neighborhoods throughout and following the project's construction phases, further analysis is required to examine the impacts of closing Bouquet Canyon Road between Hob Avenue and Pam Court with respect to emergency access.

f) **Potentially Significant Impact:**

Transit

Public bus and rail transit services are available in the greater Santa Clarita area. Public bus transit service is currently provided by the City of Santa Clarita Transit system. The nearest bus route is Route 4, which provides service along Bouquet Canyon Road and stops at the intersection of Hob Avenue and Pin Court immediately north of the project site, at Bouquet Canyon Road and Russ Jay Street on the west side of the project site, and at Bouquet Canyon Road and Steve Jon Street on the southwest side of the project site. Route 4 travels between Los Angeles Residential Community Ranch to the northeast of Santa Clarita and the Newhall Metrolink Station, passing major destinations such as Saugus High School, Arroyo Seco Junior High School, the courthouse and city hall, the Santa Clarita Senior Center, and the McBean Regional Transit Center (Santa Clarita Transit 2018).

Further analysis is required to determine the extent of the project's impact to existing bus service along Bouquet Canyon Road, due to closure of the segment between Pam Court and Hob Avenue, and to determine whether any other aspects of the project design could adversely affect any existing bus stops.

Bicycle Facilities

Bouquet Canyon Road is classified as an existing Class II bicycle route in the General Plan's Circulation Element between the Santa Clara River and Plum Canyon Road, to the south of the project site (Santa Clarita 2011, p. C-55). A Class I bicycle route is proposed in the Circulation Element to run along Bouquet Creek, terminating at Hob Avenue on the north side of the project site. Class I bicycle routes are defined as paved rights-of-way completed separated from streets. Further analysis of the proposed project

	is required to determine whether it would accommodate, enhance, or conflict with that proposed route. **Pedestrian Facilities** The project is designed to encourage pedestrian activity and walking as a travel mode within the private community. The proposed project would include site enhancements to promote walkability, such as trails to recreation areas like the tot lot playground on the north side of the project site and a hilltop park on top of the ridgeline on the west side of the property. The project's trail system would connect to public sidewalks in residential areas to the north and west through access points near Pam Court and Hob Avenue. Trail connections to residential areas to the south are infeasible due to steep terrain; however, the greater Santa Clarita area would have access to the trail system through a trailhead parking area on the southeast portion of the project site. There are existing public sidewalks along the west side of Bouquet Canyon Road; however, the sidewalk spans from Steve Jon Street to Pam Court, with no pedestrian infrastructure between Pam Court and Hob Avenue on the north side of the project site. Due to many street intersections between Steve Jon Street and Pam Court, the existing public sidewalk is fragmented. There are no existing sidewalks between David Way and the Los Angeles County property to the east of the project site. Further analysis is required to determine what additions to the public sidewalk network would be provided by the project and whether the project could conflict with any existing or planned public pedestrian routes. This additional analysis of potential impacts to transit, bicycle, or pedestrian routes and facilities will be provided in the EIR to be prepared for this project. ***Sources of Information*** Metro (Los Angeles County Metropolitan Transportation Authority). 2010. *Congestion Management Program*. https://www.metro.net/projects/congestion_mgmt_pgm. Santa Clarita, City of. 2011. *General Plan Circulation Element*. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/4%20-%20Circulation%20Element.pdf. Santa Clarita Transit. 2018. Route 4/14. Accessed September 14. http://santaclaritatransit.com/routes-schedules.
XVII. TRIBAL CULTURAL RESOURCES	**a, b) Less Than Significant Impact:** Assembly Bill (AB) 52, in effect as of July 1, 2015, introduces into CEQA the tribal cultural resource as a class of cultural resources and additional considerations relating to Native American consultation. California Public Resources Code (PRC) Section 21074 defines a tribal cultural resource as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe." A tribal cultural resource may be considered significant if it: is included in a local or state register of historical resources; is determined by the lead agency to be significant pursuant to criteria set forth in PRC Section 5024.1; is a geographically defined cultural landscape that meets one or more of the criteria in PRC Section 5024,1; or is a historical resource described in PRC Section 21084.1, a unique archaeological resource described in PRC Section 21083.2, or is a non-unique archaeological resource if it conforms with the above criteria.

		Given the project site's proximity to the Santa Clara River, the presence of a stable watercourse on-site, and the numerous findings of prehistoric Native American resources in the general area, there is the potential for tribal cultural resources to be present on-site. Site preparation will include ground-disturbing activities to provide for the development of 461 residential units and ancillary infrastructure. These activities could result in disturbing or unearthing tribal cultural resources. To determine whether any tribal cultural resources have been previously documented in this area, a records search of the California Historical Resources Information System at the South Central Coastal Information Center will be conducted as part of the EIR to be prepared for this project. This search will include a review of all previously recorded cultural resources, as well as previously conducted cultural resources studies on the project site and within a 0.5-mile radius surrounding the site. In accordance with AB 52 (PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 5097.94), the City of Santa Clarita has initiated communication with the Fernandeño Tataviam Band of Mission Indians to determine if the project site is within their ancestral tribal settlements and/or trade routes or otherwise of importance to Native Americans, which indicate a potential for encountering tribal cultural resources within the project site. The Fernandeño Tataviam Band of Mission Indians has responded with a request for further consultation, to develop mitigation measures to prevent impacts to tribal cultural resources as a result of earth-moving activities during project development.
XVIII. UTILITIES AND SERVICE SYSTEMS	**a)**	**Less Than Significant Impact:** Most wastewater generated in Santa Clarita is treated by the Santa Clarita Valley Sanitation District (SCVSD), which includes two existing water reclamation plants (WRPs) operated by the Los Angeles County Sanitation Districts (LACSD). These are the Saugus WRP and the Valencia WRP, which are interconnected, forming the Santa Clarita Valley Joint Sewerage System; see Exhibit CO-3 (Water Resources) (Santa Clarita 2011, p. CO-13). The joint powers agreement that created the regional system allows the Valencia WRP to accept flows that exceed the capacity of the Saugus WRP. The water is treated to tertiary levels (biological treatment followed by filtration and disinfection) and is discharged to the Santa Clara River. Both WRPs operate under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Los Angeles Regional Water Quality Control Board to regulate volumes of wastewater flows, treatment methods, and the water quality and disposal of the treated effluent. The proposed project would result in the generation of the same constituents typically found in residential wastewater discharge; therefore, the proposed project would not generate atypical discharge such as industrial or agricultural effluent. As such, the project's wastewater would not require any unique types of treatment processes. Existing wastewater treatment facilities are designed to treat domestic sewage; thus, typical domestic sewage does not exceed wastewater treatment requirements. Since the project would not generate atypical wastewater, the project would not have a significant impact on treatment requirements.
	b)	**Potentially Significant Impact:** As stated, wastewater service in the area is provided by the SCVSD, which includes the interconnected Saugus WRP and Valencia WRP that form the Santa Clarita Valley Joint Sewerage System. Regarding existing water infrastructure in the valley, the Santa

Clarita Valley Water Agency (SCV Water) was created on January 1, 2018, by an act of the state legislature (Senate Bill [SB] 634) through the merger of the three water agencies in the Santa Clarita Valley; it serves a population of 273,000 via 70,000 retail water connections. The merger included Castaic Lake Water Agency and its Santa Clarita Water Division, Newhall County Water District, and the Valencia Water Company.

This proposed project would represent a substantial increase in water demand and wastewater generation as compared to the mostly vacant project site. Further analysis is required to determine whether regional water and wastewater infrastructure is sufficient to meet the demands of the proposed project. If new, off-site infrastructure is required to address the increase in water demand or wastewater generation, then analysis of the impacts associated with this new infrastructure will be included in the EIR to be prepared for this project.

Water and wastewater connections to existing infrastructure in Bouquet Canyon Road would have short-term and common construction impacts typical of such connections that occur in public roadways. Short-term disruptions to traffic flows and short-term noise and air quality impacts could occur during this construction. Traffic flow impacts would be addressed through common traffic control measures, to be identified in the proposed project's construction plans and specifications. Noise and air quality impacts will be addressed as part of the project-wide impacts in the noise and air quality studies to be prepared as part of the EIR.

c) **Potentially Significant Impact:** Currently, the project site is bisected by a seasonal creek bed and a portion of the site is in a FEMA Flood Zone. The natural drainage provided by this creek flows to the west-northwest. The proposed project would channelize part of the flood zone through the site to carry high storm flows while retaining a natural stream course for low flows. As a result, a majority of the natural landscape in that area would be altered to construct flood control improvements. The proposed project also includes four new basins throughout the project site as stormwater control measures.

As required by the City of Santa Clarita and the countywide MS4 permit, the final design of the development's drainage system must be engineered so that post-development peak runoff discharge rates are equal to or less than pre-development peak runoff rates. Discharge of project runoff into one or more of the City's existing drainage inlets has not been determined; therefore, potential impacts cannot be identified at this time.

Further analysis is required to examine impacts to biological resources associated with the flood control channel improvements in the northern part of the site, and to examine hydrology and water quality impacts resulting from the proposed channelization and other project drainage improvements. A hydrology study, a low- impact development plan, and possibly other engineering evaluations are required to determine the project's changes in site hydrology and potential impacts to existing municipal storm drainage facilities as well as the natural environment. These studies will be developed in accordance with the applicable criteria established by the City, Los Angeles County Flood Control District and FEMA and evaluated as part of the EIR to be prepared for this project.

d) **Potentially Significant Impact:** As stated, SCV Water was created by SB 634 in 2018 and serves a population of 273,000 in the Santa Clarita Valley via 70,000 retail water connections. SCV Water's sources are derived from

	the State Water Project and local groundwater resources generated primarily from the Santa Clara River. The project site is located within the Santa Clara River Valley Groundwater Basin, East Sub-basin (identified in California Department of Water Resources Bulletin 118), which is composed of two aquifer systems, the Alluvial Aquifer and the Saugus Formation. The alluvium aquifer generally underlies the Santa Clara River and its tributaries, with the Saugus Formation underlying most of the upper Santa Clara River areas. In 2016, approximately 56 percent of the total water use in the Santa Clarita Valley was met by local groundwater resources. As required by the California Urban Water Management Planning Act, urban water suppliers are required to assess water supply reliability and compare total projected water use with the expected water supply over the next 20 years in five-year increments. The act also requires an assessment for a single dry year and multiple dry years. Therefore, the Castaic Lake Water Agency in coordination with its various water purveyors prepared the 2015 Urban Water Management Plan to determine if current and future water supplies are sufficient to meet the projected needs of the service area. The proposed new residential community of 461 homes with associated irrigated landscape areas would represent a substantial increase in water demand in this area. Further analysis and consultation with SCV Water are required to determine whether existing water resources and water supply entitlements are sufficient to meet this demand, without impacting other water users or emergency supply requirements. This analysis will be conducted as part of the EIR to be prepared for this project. **e)** **Potentially Significant Impact:** As stated, wastewater service in the area is provided by the SCVSD, which includes the interconnected Saugus WRP and Valencia WRP that form the Santa Clarita Valley Joint Sewerage System. The proposed new residential community of 461 homes would result in a substantial increase in wastewater generation as compared with the existing, mostly vacant project site. Further analysis is required to determine if the Santa Clarita Valley Joint Sewerage System has sufficient capacity to treat the volume of wastewater generated by the proposed project. This analysis will be conducted as part of the EIR to be prepared for this project. **f)** **Less Than Significant Impact:** Three Class III (nonhazardous) landfills serve Santa Clarita: the Chiquita Canyon Landfill, the Antelope Valley Landfill, and the Sunshine Canyon Landfill. The City of Santa Clarita administers special programs for sharps (medical) waste through a mail back program and drop-off locations for bulky items. Through its Countywide Integrated Waste Management Plan, the Los Angeles County Department of Waste Resources regularly conducts needs assessments, forecasts of future waste generation and disposal patterns, and projections of landfill disposal capacities. In its 2016 annual report charting progress toward the goals of the Integrated Waste Management Plan, the Los Angeles Department of Public Works (2017) determined that there are at least 15 years of remaining landfill capacity on a countywide basis. Specifically, the Antelope Valley Landfill has a remaining capacity of 23 years; Chiquita Canyon Landfill, with the approved expansion, has a remaining capacity of 45 years; and Sunshine Canyon Landfill has a remaining capacity of 21 years. Beyond these landfill lifespans, the County

is responsible for continuing to ensure there is adequate capacity for disposal of municipal wastes generated throughout the Santa Clarita Valley.

The proposed project would be required to participate in the City of Santa Clarita's ongoing solid waste recycling and waste reduction programs. These programs include residential waste and recycling services, as described in response g), below. The City also administers other trash and recycling programs, such as free disposal of bulky items, bulky item pickup, electronic waste disposal, and assistance with disposal of household hazardous waste (e.g., paint, pool chemicals, medication, batteries, household cleaners). The solid waste generated by this proposed development would be diverted from landfills through these programs in the same manner as other residential uses in the City of Santa Clarita. As a result of these diversion programs, and because of the existing capacity of the landfills serving this area, this proposed development would have less than significant impact on regional landfill capacity.

g) Less Than Significant Impact: The project would comply with the City's solid waste reduction programs, which are designed to comply with federal, state, and local statutes and regulations related to solid waste. These statutes and regulations include the California Integrated Solid Waste Management Act, the California Beverage Container Recycling and Litter Reduction Act, and the City's solid waste disposal policies and practices. The Integrated Solid Waste Management Act requires that jurisdictions maintain a 50 percent or better diversion rate for solid waste. The City operates recycling services with standard weekly residential service from Waste Management. Residents can dispose of their accumulated recyclables, such as plastic bottles, aluminum cans, glass, paper, and cardboard, together in their recycling bins.

The construction and operation of the proposed project would generate typical municipal solid wastes, which would be disposed of in accordance with the City's existing solid waste management programs. The City's Construction and Demolition (C&D) Ordinance (05-09) requires all new residential construction projects to recycle a minimum of 65 percent of all inert materials and 65 percent of all other materials.

The proposed project is required to comply with the applicable solid waste franchise's recycling system, and thus, will meet the City's and California's solid waste diversion regulations. Therefore, the proposed project would not result in a significant impact involving compliance with solid waste regulatory standards.

Sources of Information

Castaic Lake Water Agency. 2003. *Groundwater Management Plan, Santa Clara River Valley Groundwater Basin, East Subbasin, Los Angeles County, California*. https://water.ca.gov/LegacyFiles/groundwater/docs/GWMP/SC-1_CastaicLakeWA_GWMP_2003.pdf.

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Castaic Lake Water Agency, CLWA Santa Clarita Water Division, Newhall County Water District, and Valencia Water Company. 2017. *Castaic Lake Water Agency 2015 Urban Water Management Plan for Santa Clarita Valley*. Prepared by Kennedy/Jenks Consultants, Nancy Clemm, P.E.,

	Luhdorff & Scalmanini Consulting Engineers, and Stacy Miller Public Affairs. Los Angeles County Department of Public Works. 2017. *Countywide Integrated Waste Management Plan 2016 Annual Report*. https://dpw.lacounty.gov/epd/swims/ShowDoc.aspx?id=6530&hp=yes&type=PDF. Luhdorff and Scalmanini Consulting Engineers. 2017. *2016 Santa Clarita Valley Water Report.* https://scvhistory.com/scvhistory/scvwaterreport2016.pdf. Santa Clarita, City of. 2011. *General Plan Conservation and Open Space Element.* https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.
XIX. MANDATORY FINDINGS OF SIGNIFICANCE	**a) Potentially Significant Impact:** Currently the project site is undeveloped, with the exception of a single residence in the northwestern portion of the site. The project will result in transforming the landscape of the site from its primarily natural state to urban land uses. As discussed in Section IV, Biological Resources of this Initial Study, the natural landscape on-site may support riparian or other sensitive habitat, along with wildlife species that forage or nest on the site on a regular basis. With the extensive landform and landscape alterations proposed to support the development of 461 homes and the associated infrastructure, the project could adversely affect a variety of biological resources, including riparian vegetation and habitat that support rare, threatened, or endangered plants and wildlife. Thus, there is the potential for the construction and operation of the project to impact special-status species and habitat or restrict the range of such species through converting the undisturbed land to suburban land uses. Additionally, the project would alter the natural drainage course located on-site and may disrupt wildlife dispersal and migration. As discussed in Section V, Cultural Resources of this Initial Study, the project site is primarily undeveloped and located in an area where a natural stream course occurs as a tributary to the Santa Clara River, which may have been a place where earlier Native Americans settled or traveled through or possibly conducted ceremonial activities. Thus, there is the potential for yet unknown prehistoric cultural resources to be discovered during excavation and grading activities. Because this site has not been investigated for cultural resources, there is also some possibility that historic period resources may occur and be discovered during project grading. As discussed in both the aforementioned sections, further analysis and assessments of the project's impacts due to construction activities and over the long-term operating life are needed to determine whether the project could result in significant impacts to sensitive biological or cultural resources. This research and impact assessment will be conducted as part of the EIR to be prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed **b) Potentially Significant Impact:** The environmental effects of the project, along with the environmental effects of other planned projects within the northern Santa Clarita area, could potentially create cumulative impacts, some of which may be significant. At this time, a list of pending projects

	to be considered for cumulative impact analysis has not been established. A cumulative project list will be developed, an analysis of cumulative impacts will be conducted, and the project's contribution to any cumulative impacts will be considered further in the EIR being prepared for this project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed. **c)** **Potentially Significant Impact:** As discussed in the Initial Study, further evaluation is needed to determine if the project will have environmental effects that would cause substantial adverse effects on humans either directly or indirectly. Such effects could result, for example, from the generation of air pollutant emissions during construction and over the operating life of the project, from the increase in ambient noise levels attributable to the project's construction and operational activities, and possibly due to accidental releases of hazardous materials during the site development phases. This evaluation, which may include specialized assessments, research, and reports prepared by certified or licensed professionals, will be included as part of the EIR being prepared for the project. If potentially significant impacts are identified, measures to avoid or mitigate those impacts will be developed.

Appendix A:
Initial Study, Notice of Preparation, and Responses to NOP

Part 2: Notice of Preparation

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NOTICE OF PREPARATION

TO: **Distribution List**

Lead Agency:

Agency Name:	City of Santa Clarita
Street Address:	23920 Valencia Boulevard, Suite 302
City/State/Zip:	Santa Clarita, CA 91355
Contact:	Hai Nguyen, Associate Planner
Telephone:	(661) 255-4365

Consulting Firm:

Name:	Michael Baker International
Street Address:	3760 Kilroy Airport Way, Suite 270
City/State/Zip:	Long Beach, CA 90806
Contact:	Randy Nichols, EIR Project Manager
Telephone:	(562) 200-7168

SUBJECT: **Notice of Preparation of Draft Environmental Impact Report and Public Scoping Meeting for the Proposed Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment**

The City of Santa Clarita will be the lead agency and will prepare an Environmental Impact Report ("EIR") for the Proposed Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment. The project description, location, and the probable environmental effects are contained in the attached materials.

To Other Government Agencies

We need to know the views of your agency as to the scope and content of the environmental information, which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR prepared by our agency when considering your permit or other approval for the project.

To Individuals, Special Interest Groups and Other Interested Parties

We are requesting your written input regarding concerns about environmental effects that may result from this project, to help define the scope of the analysis to be provided in the EIR.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice. As such, the comment period for the Notice of Preparation begins on December 4, 2018 and ends on January 18, 2019. Please send your written response to Hai Nguyen at the address shown above. We would appreciate the name of a contact person in your agency.

Also, the City of Santa Clarita will conduct a public scoping meeting on Wednesday, January 9, 2019, beginning at 6:00 p.m., at City of Santa Clarita City Hall, Century Conference Room, located at 23920 Valencia Boulevard, Santa Clarita, CA 91355 to accept comments on the scope of the EIR for the Proposed Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment Project. This meeting will serve as a public forum to discuss the environmental issues already identified for the EIR, along with other issues identified by the public that should be included for further analysis within the EIR.

Date: 11/29/2018

Title: Hai Nguyen, Associate Planner
Telephone: (661) 255-4365

Reference: California Administrative Code, Title 14, Sections 15082(a), 15103, 15375

CITY OF SANTA CLARITA
NOTICE OF PREPARATION ATTACHMENT

Lead Agency:	City of Santa Clarita, Community Development Dept. 23920 Valencia Boulevard, Suite 302 Santa Clarita, California 91355
Contact Person & Phone Number:	Hai Nguyen, Associate Planner City of Santa Clarita Community Development Department 23920 Valencia Boulevard, Suite 302 Santa Clarita, CA 91355 (661) 255-4365
Project Applicant:	Bouquet Canyon Project Owner, LLC 888 San Clemente Drive, Suite 100 Newport Beach, CA 92660
Master Case:	Master Case No. 18-089
Project Location:	Approximately 57 acres of mostly undeveloped land in the community of Saugus in the City of Santa Clarita, in the County of Los Angeles. Specifically, the site is located on the eastern and southern sides of Bouquet Canyon Road, between Copper Hill Drive and Plum Canyon Road on the south (see Figure 2 of the attached Initial Study, "Project Location Map").
Assessor's Parcel Numbers:	2812-008-003; 2812-008-013; 2812-008-021; 2812-008-022; and 2812-008-031
General Plan/Zoning Designation:	Urban Residential 2 (UR2) and Urban Residential 5 (UR5)

Project Description:

A tentative tract map is proposed to subdivide the subject property into 70 lots to facilitate development of 461 housing units with related infrastructure, dedicated open space areas, trails, recreation areas, and landscape elements on 57.1 acres of primarily undeveloped land. Proposed homes would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. The project proposes two gated entries, one non-gated entry, and one public access trailhead parking lot. Proposed parkland and recreational amenities include a hilltop park, five neighborhood parks, a linear park, a tot lot, plus two private recreation sites (See Figure 3 of the attached Initial Study, "Site Plan").

The project would also include the closure of a portion of Bouquet Canyon Road, between Pam Court and Hob Avenue, and the construction of a new alignment of Bouquet Canyon Road as identified in the Santa Clarita General Plan Circulation Element. The new roadway would be constructed from approximately 1,500 feet north of Plum Canyon Road on the south end to a connection point to existing Bouquet Canyon Road approximately 700 feet south of Shadow Valley Lane. The new street alignment would eliminate a significant segment of a sub-standard road on a heavily traveled route that connects to Copper Hill Drive and the northern portion of Santa Clarita and beyond. Improvements would include widened lane and shoulder areas, a full-length bridge over a seasonal creek bed, pedestrian walkways, and a multi-use trail accessible to both the existing and adjacent neighborhoods as well as the proposed project. The trail would continue along the entire perimeter of the project with an offsite access point near Copper Hill Drive and a ridgetop open space park in the interior of the proposed project. The existing project site is primarily vacant, apart from one residential dwelling on the west side of the project site. The site is characterized by steep hillsides in the southern and western portions, and a flat seasonal creek and grassy northern portion. The steep

hillsides on the southern and western portions are dominated by sage scrub habitat, while the flatter northern portion is dominated by non-native grasses.

The project anticipates minimizing grading on the significant ridgeline, while providing the necessary cut and fill to establish the Bouquet Canyon Road realignment. Additionally, the project would include the channelization of part of the flood zone through the site to carry high storm flows while retaining a natural stream course for low flows; as a result, a majority of the natural landscape in that area would be altered to construct flood control improvements.

Required City Approvals

- Tentative Tract Map 82126 – to subdivide the subject property into 70 lots for residential land uses, streets, private drives, drainage infrastructure, slopes, and various open space lots.
- Conditional Use Permit 18-004 – for private gating of multi-family units, building heights greater than 35 feet, cluster development, and any import/export of dirt greater than 100,000 cubic yards of earth.
- Architectural Design Review 18-010 – for the proposed building design, styles, and forms.
- Development Review 18-009 – for the proposed physical design and layout of the project.
- Hillside Development Review Class IV 18-001 – to develop land with average cross slopes of 10 percent or more.
- Ridgeline Alteration Permit 18-001 – for development near a designated significant ridgeline in the Ridgeline Preservation Overlay Zone.
- Oak Tree Permit – required for any encroachments or removals of protected oak trees.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED BY THE PROPOSED PROJECT

Based on the findings of a preliminary environmental assessment contained in the attached Initial Study, an EIR will be prepared to evaluate the project's potential impacts on the environment. The topics to be discussed in the EIR include the following:

- Aesthetics: Views of the proposed residential community would be available to motorists traveling on Bouquet Canyon Road, as well as to surrounding residential areas to the north, west, and southeast. The proposed project would extensively alter the existing natural landforms and landscape elements and establish a built environment that replaces what is now open space. Therefore, the EIR will evaluate the project's effects on scenic vistas and aesthetic character and quality of the area. The EIR will also analyze whether the proposed development would create new sources of substantial light or glare.

- Air Quality: The project would generate air pollutants during both construction and operation. Construction of the project includes site clearance, excavation and grading, hauling of materials, and building construction, all of which would generate dust and equipment exhaust. In the long term, habitation of the proposed residential community would generate an increase in vehicular travel, thus increasing tailpipe emissions, along with emissions resulting from on- and off-site energy use and regular maintenance activities. The EIR will quantify the project's construction and operation emissions and compare the project's emissions to the South Coast Air Quality Management District's (SCAQMD) regional and localized thresholds of significance.

- Biological Resources: With extensive landform and landscape alterations that are part of the proposed development, the project could adversely affect a variety of biological resources, including riparian vegetation and habitat that could support rare, threatened, or endangered plants and wildlife species. The EIR will analyze effects on endangered and protected species; wetland, riparian, and other sensitive habitat; the movement of native or migratory fish and wildlife; and jurisdictional waters defined in Section 404 of the Clean Water Act that could result from project construction and long-term operation. The EIR will also include an oak tree survey and report to assess impacts on protected trees on the property.

- Cultural Resources: The proposed project would require substantial site grading prior to development. The EIR will include cultural resources and archaeological resources studies to determine whether any historic resources have been documented on or in the vicinity of the site; to determine the historic and archaeological context of the site; and to determine the prospects of finding historic or archaeological artifacts during construction. The EIR will also analyze the geologic structure of the project site to determine if the proposed grading plan could disturb paleontological (i.e. fossil) resources.

- Geology and Soils: The proposed project construction of 461 dwelling units, an extensive network of utility infrastructure, as well as a new segment of Bouquet Canyon Road, would require extensive grading that would exceed a volume of 10,000 cubic yards of earth, as well as substantial changes in the project site topography. As such, the EIR will include a geotechnical investigation, evaluating whether the project's construction or operation would place persons or structures at risk of damage or death resulting from seismic ground shaking, seismic-related ground failure, landslides, or unstable/expansive soil conditions and will analyze site runoff and whether flows would substantially increase, causing erosion in areas such as the natural stream course through the project site. The EIR will also determine the total volume of grading associated with site construction and will evaluate the potential impacts of slope alteration, landform alterations, and extensive grading of the project site.

- Greenhouse Gas Emissions: The project would generate temporary and long-term greenhouse gas (GHG) emissions from construction and operation activities, respectively. GHG emissions would primarily result from construction and material hauling equipment exhaust; increase in vehicle trips to and from the new residential buildings; use of consumer products and landscaping maintenance of the residential community; and energy and natural gas consumption in the new buildings. The EIR will quantify the project's direct and indirect GHG emissions, and will examine the project's energy footprint with respect to Assembly Bill 32, the Southern California Association of Governments' 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, the City of Santa Clarita's Climate Action Plan and sustainability goals and policies, and guidance provided by the California Air Resources Board and the South Coast Air Quality Management District.

- Hazards and Hazardous Materials: The approximately 57-acre site is currently undeveloped, except for one single-family residence on the west side, and while there are no apparent hazardous materials concerns, the EIR will examine the potential for site contamination from prior land uses. Further, the project site, like many other undeveloped lands in the Santa Clarita Valley, is in a Very High Fire Hazard Severity Zone due to a combination of hilly terrain, dry weather conditions, and the presence of flammable native vegetation. As a result, the proposed project is required to develop a Fuel Modification Plan, which is reviewed by Los Angeles County Fire Department and enforced through the City of Santa Clarita's building permit process. The EIR will include evaluation of the project to examine development of a sizeable residential community in this wildland fire hazard area and to ensure compliance with applicable codes through mitigation, as necessary.

- Hydrology and Water Quality: The proposed project would change the site through extensive landform modification and by adding impermeable surfaces and urban land uses that would alter hydrological patterns and introduce new sources of water pollutants in site runoff. There is the potential for water pollutants to be generated in the short term during construction activities and in the long term due to the permanent changes to the site. Further evaluation is necessary to determine the extent of these impacts, to be conducted as part of the EIR to be prepared for this project. The EIR will analyze construction- and operation-related water quality impacts and will include analysis of the Project's stormwater pollution prevention program, pre- and post-construction hydrology study, and the low-impact development plan. The EIR will also evaluate whether the landform modifications and construction of impervious surfaces would alter groundwater recharge, thus affecting area groundwater wells and whether the proposed development would induce or worsen on- or off-site erosion. This will include an evaluation of the project's runoff characteristics and stormwater drainage plan, as well as an evaluation of the ability of the

municipal storm drain system to accommodate the projected flows associated with the project. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the project area identifies the northeastern part of the project site as being in a Zone A flood hazard area, which is an area subject to flooding in the 100-year event. The project proposes to channelize high storm flows in that area, to reduce the extent of the flood hazard zone and allow for development of homes in that area. Further analysis will be included in the EIR to verify that the proposed flood zone modifications and channelization of the high storm flows are consistent with applicable federal and local standards.

- Noise: Construction and operation of the project would result in new noise and vibration sources in the project vicinity. Short-term construction noise, as well as groundborne vibrations, would result from the use of construction equipment, construction procedures, and haul trucks traveling to and from the project site. Operational noise would primarily result from habitation of the residential community, as well as from project-related traffic. Sensitive receptors (single-family residences) are located across Bouquet Canyon Road to the west and north of the project site. Other neighboring land uses that could be impacted by noise generated at the developed site and by project generated traffic include Los Angeles County Probation Department buildings to the east and a strip commercial center to the south. The EIR will evaluate short-term and long-term noise and vibration impacts from the construction and operation of the project and will determine if the City's noise standards could be exceeded and to identify suitable mitigation measures, if necessary.

- Public Services: The new residential community of 461 homes and related site improvements, as well as the associated increase in population would create a demand for public services. These include Fire Department services to protect the new homes in the occurrence of a fire event and provide emergency medical response; Sheriff's Department services to address criminal activity and property crimes; public educational services to accommodate students living in the community at area elementary, middle, and/or high schools; and recreation services through park space for community residents. The EIR will evaluate the project's potential impacts on local education and parks/recreation systems, and will determine whether Los Angeles County's Fire Department and Sherriff's Department have the capacity to maintain acceptable levels of service in the area.

- Transportation/Traffic: The proposed residential community would increase vehicle trips to and from the project site. The volume and distribution of this traffic will be determined through preparation of a detailed traffic impact study (TIS), which will be included in the EIR. This study will determine trip generation and circulation associated with the project, and project effects on the performance of the surrounding street and highway network, such as circulation and access to adjacent neighborhoods. The EIR will determine if the new residential development, as well as the realignment of Bouquet Canyon Road would create hazards/disruptions at entrance and exit intersections. Finally, the EIR will contain an evaluation of project impacts on existing the City's Transit system, bicycle facilities, and pedestrian facilities and whether project design would accommodate, enhance, or conflict with existing and planned transit and non-motorized travel routes.

- Utilities/Service Systems: The project would represent a substantial increase in water demand and wastewater generation as compared to the mostly vacant existing project site. Further analysis is required as part of the project's EIR to determine whether regional water and wastewater infrastructure is sufficient to meet the demands of the proposed project. If new, off-site infrastructure is required to address the increase in water demand or wastewater generation, then the EIR will include analysis of the impacts associated with this new infrastructure. The EIR will also evaluate whether the project's flood control channel improvements and other project draining improvements would cause significant environmental effects or exceed the capacity of existing municipal storm drainage facilities.

Other Required EIR Topics

In addition to the specific environmental issues noted above, the EIR will include sections to address the following topics, as required by the State CEQA Guidelines:

- Energy Conservation
- Growth Inducing Effects
- Significant Irreversible Environmental Changes
- Alternatives

Appendix A:
Initial Study, Notice of Preparation, and Responses to NOP

Part 3: Responses to the Notice of Preparation

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 82123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSON, Governor
CHARLTON H. BONHAM, Director

January 24, 2019

Mr. Hai Nguyen
City of Santa Clarita
Planning Department
23920 Valencia Boulevard, Suite 302
Santa Clarita, CA 91355
hnguyen@santa-clarita.com

Notice of Preparation of a Draft Environmental Impact Report for the Proposed Bouquet Canyon Residential Development, City of Santa Clarita, Los Angeles County

Dear Mr. Nguyen:

The California Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Bouquet Canyon Residential Development (Project). The NOP's supporting documentation includes an *Initial Study* (IS) provided by the City of Santa Clarita (City).

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & Game Code, §§ 711.7, subdivision (a) & 1802; Public Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect state fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Public Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & Game Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by state law, of any species protected under the California Endangered Species Act (CESA) (Fish & Game Code, § 2050 et seq.), or state-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish

& Game Code, §1900 et seq.) authorization as provided by the applicable Fish and Game Code will be required.

Project Description and Summary

Objective: The Project is proposing to subdivide a 57.1-acre parcel into 70 lots to facilitate development of 461 housing units with related infrastructure, dedicated open space areas, trails, recreation areas, and landscaping on primarily undeveloped land. Proposed homes would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. The project proposes two gated entries, one non-gated entry, and one public access trailhead parking lot. Proposed parkland and recreational amenities include a hilltop park, five neighborhood parks, a linear park, a tot lot, plus two private recreation sites.

The project would also include the closure of a portion of Bouquet Canyon Road, between Pam Court and Hob Avenue, and the construction of a new alignment of Bouquet Canyon Road. The new roadway would be constructed from approximately 1,500 feet north of Plum Canyon Road on the south end to a connection point to existing Bouquet Canyon Road approximately 700 feet south of Shadow Valley Lane. Road-related improvements would include widened lane and shoulder areas, a full-length bridge over a seasonal creek bed, pedestrian walkways, and a multi-use trail accessible to both the existing and adjacent neighborhoods as well as the proposed project.

Additionally, the project would include the channelization of part of the flood zone through the site to carry high storm flows while retaining a small stream course for low flows; as a result, a majority of the natural landscape in that area would be altered to construct flood control improvements.

Location: The Project is located on the eastern and southern sides of Bouquet Canyon Road, between Copper Hill Drive and Plum Canyon Road on the south.

The existing project site is primarily vacant, apart from one residential dwelling on the west side of the project site. The site is characterized by steep hillsides in the southern and western portions dominated by sage scrub habitat, is traversed on the northern part by Bouquet Creek, and the northern portion is dominated by grasses.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Additional comments or other suggestions may also be included to improve the document.

For impacts demonstrated to be unavoidable in the NOP, CDFW recommends the measures or revisions below be included in a science-based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Public Resources Code, § 21081.6 and CEQA Guidelines, § 15097).

Project Description and Related Impact Shortcoming

Mr. Hai Nguyen
City of Santa Clarita
January 24, 2018

Comment #1: Impacts to Bouquet Creek

Issue: CDFW is concerned that the Project proposes to channelize Bouquet Creek and create a small low flow channel as a landscape feature.

Specific Impact: CDFW is concerned the Project is filling an entire drainage that is occupied by the fully protected unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*). CDFW is concerned channelizing the high flow channel to allow more housing units and constructing a low flow channel thereby substantially reducing the floodplain, and altering geomorphic and hydrologic processes, will leave Bouquet Creek functioning as a water feature lacking the natural, self-sustaining processes of a stream.

Why impact would occur: Direct loss of stream and wetland habitat directly affects water quality downstream. Additionally, piping or undergrounding streams create sediment and erosion issues upstream and downstream, as well as changes the hydrograph of the stream, altering geomorphic processes and the listed species that depend on them. Urban runoff has been shown to be high in nutrients, as well as other contaminants.

Evidence impact would be significant: The Project may substantially adversely affect the existing stream pattern and geomorphologic processes of the Project site through the alteration or diversion of a stream. Absent specific mitigation, the Project could result in substantial erosion or siltation on-site or off-site of the Project. Channelization of Bouquet Creek may result in the removal of sensitive vegetation communities and listed species.

Recommended potentially feasible mitigation measure(s):

Mitigation Measure #1: As a Responsible Agency under CEQA Guidelines section 15381, CDFW has authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (including vegetation associated with the stream or lake) of a river or stream or use material from a streambed. For any such activities, the project applicant (or "entity") must provide written notification to CDFW pursuant to section 1600 et seq. of the Fish and Game Code. CDFW's issuance of a Lake or Streambed Alteration (LSA) Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document of the local jurisdiction (Lead Agency) for the project. To minimize additional requirements by CDFW pursuant to section 1600 et seq. and/or under CEQA, the document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, minimization, mitigation, monitoring and reporting commitments for issuance of the LSA Agreement.

Mitigation Measure #2: CDFW, as described in Fish & Game Code § 703(a) is guided by the Fish and Game Commission's policies. The Wetlands Resources policy (http://www.fgc.ca.gov/policy/) of the Fish and Game Commission "...seek[s] to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California. Further, it is the policy of the Fish and Game Commission to strongly discourage development in or conversion of wetlands. It opposes, consistent with its legal authority, any development or conversion which would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission opposes wetland development proposals unless, at a minimum, project mitigation assures there will be "no net loss" of either wetland habitat values

or acreage. The Commission strongly prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values".

Mitigation Measure #3: CDFW recommends redesigning the Project to avoid impacts to the existing, natural extent of Bouquet Creek and its floodplain.

If this is not feasible, especially given that this segment of drainage is contains unarmored threespine stickleback habitat, as well as facilitates regional wildlife movement and provides a source of water to wildlife, CDFW recommends creation of similar habitat (including full hydrologic and geomorphic function) at a ratio of no less than 6:1.

Comment #2: Impacts to Unarmored Threespine Stickleback (*Gasterosteus aculeatus williamsoni)*

Issue: CDFW is concerned that the Project is impacting Bouquet Creek, which is occupied by unarmored threespine stickleback. According to CNDDB, there are numerous historical records of unarmored threespine stickleback, a state fully protected species, in Bouquet Creek. Except as provided in the Fish and Game Code (e.g., for necessary scientific research), take of any fully protected species is prohibited and cannot be authorized by CDFW (Fish and Game Code § 5515 and § 3511). "Take" is defined in Section 86 of Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Specific impacts: The Project may result in the loss of streams, associated watershed function, and biological diversity that could directly or indirectly impact the local population of unarmored threespine stickleback.

Why impacts would occur: Unarmored threespine stickleback is a small, freshwater fish inhabiting slow-moving reaches or quiet-water microhabitats of streams and rivers. Unarmored threespine stickleback feed primarily on benthic insects, small crustaceans, and snails, and to a lesser degree on flatworms, nematodes, and terrestrial insects. Unarmored threespine stickleback typically prefer a lower stream gradient, slower water velocity, broader channel, and lack of native or invasive aquatic predators. Juveniles and sub-adults also tend to be found in the protection of vegetation, in slow moving or standing water. Adults are found in all areas of the stream. They tend to gather in areas of slower moving or standing water. In places where water is moving rapidly, they tend to be found behind obstructions or at the edge of the stream, especially under the edge of algal mats (Sasaki, 1977). Ground disturbing activities from grading and filling, water diversions and dewatering would physically remove or otherwise alter existing streams or their function and associated riparian habitat on the Project site. Downstream and upstream areas and associated biological resources beyond the Project development footprint may also be impacted by Project related releases of sediment and altered watershed effects resulting from Project activities.

Water diversions can cause changes in flow regimes of streams. Thus, diversions can impact unarmored threespine stickleback by:

- Reducing the transport of fine sediment downstream causing streams to become graded or buried (Poff et al., 1997, Bauer et al., 2015);

- Disconnecting channels from still or slow-moving backwaters that are used by UTS, leading to reductions in reproduction and recruitment (Junk et al., 1989, Sparks, 1995, Poff et al., 1997);
- Wash-out and stranding of fish (Cushman, 1985);
- Changing benthic food sources;
- Altering habitat cover and algae;
- Dewatering small streams used by unarmored threespine stickleback; and
- Increasing water temperatures of streams that can slow growth, increase predation risk, and increase susceptibility to disease (Moore and Townsend, 1998, Marine and Cech, Jr., 2004).

Evidence impacts would be significant: Unarmored threespine stickleback is an endangered species pursuant to the federal Endangered Species Act (16 U.S.C. § 1531 *et seq.*) and CESA (Fish & G. Code, § 2050 *et seq.*) and a Fully Protected species (Fish & G. Code § 5515). Therefore, this species qualifies as an endangered, rare, or threatened species under CEQA consistent with CEQA Guidelines, Section 15380.

Unarmored threespine stickleback, once widespread in streams in southern California; are now only found in the upper Santa Clara River and its tributaries. The species is threatened by loss and alteration of their habitat through water diversions, development, dams, and pollution as well as introduction of invasive species that predate or compete with unarmored threespine stickleback (USFWS, 2009).

Based on the foregoing, Project impacts resulting from channelizing a portion of Bouquet Creek and only allowing for a low flow bypass channel would potentially reduce the range of unarmored threespine stickleback.

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: CDFW cannot authorize the take of any fully protected species as defined by State law. State fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for its take except for collecting those species for necessary scientific research and relocation of the bird species for protection of livestock (Fish & G. Code, §§ 3511, 4700, 5050, 5515). CDFW has advised the Permittee that take of any species designated as fully protected under the Fish and Game Code is prohibited. CDFW recognizes that certain fully protected species are documented to occur on, or in, the vicinity of the project area, or that such species have some potential to occur on, or in, the vicinity of the project area, due to the presence of suitable habitat. CDFW recommends the City fully avoid all impacts to unarmored threespine stickleback.

Comment # 3: Impacts to Sensitive Species

Issue: The Project location is within the floodplain and active channel of Bouquet Creek. CDFW is concerned the Project may affect sensitive species that occur within Bouquet Creek at this location and immediately above and below the Project.

Specific impact: Unarmored threespine stickleback, a State fully protected species, has been documented within Bouquet Creek above and below the proposed Project. Additionally, least Bell's vireo *(Vireo bellIipusillus)*, a state endangered species; coastal California gnatcatcher

(*Polioptila californica californica*), a federally listed species; San Fernando spineflower (*Chorizanthe parryi var. Fernandina*), a state endangered species; western spadefoot toad (*Spea hammondii*), a California Species of Special Concern (SSC); spotted bat (*Euderma maculatum*), a SSC; and Palmer's mariposa lily (*Calochortus palmeri var. palmer*), a state ranked 1B plant, are all known to occur in the vicinity of the proposed Project. Suitable habitat for burrowing owl (*Athene cunicularia*), a state SSC, occurs on the Project site. The Project may have direct and indirect effects to listed and sensitive species identified above.

Why impact would occur: Grading, vegetation removal, and other ground disturbances could crush and bury listed or sensitive plants and animals, resulting in direct mortality. The Project may also affect adjacent habitat by loud noises, lighting, increased human presence and activity, fugitive dust, increased temperatures from asphalt (heat island effect), hydrocarbons from asphalt paving within Bouquet Creek floodplain, and spreading invasive weeds, resulting in stress, displacement, and mortality of these species.

Evidence impact would be significant: Inadequate avoidance, minimization, and mitigation measures for impacts to these listed species will result in the Project continuing to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or United States Fish and Wildlife Service (USFWS).

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure #1: The City should identify alternative locations and a reduced density option allowing for avoidance to Bouquet Creek and its floodplain.

Mitigation Measure #2: The Project should use alternatives to hydrocarbon-based asphalt paving. Asphalt pavement continues to leach hydrocarbons and heavy metals, becoming a significant point source of environmental contamination (Sadler, 1999).

Mitigation Measure #3: Given this Project is proposed for a sensitive location (within Bouquet Creek), the potential for direct and indirect impacts to sensitive, listed, and fully protected species should be further addressed. The DEIR should include information on species locations and how the project will be sited to avoid impacts to this species or vegetation communities. If the Project will impact a sensitive species or vegetation community, specific mitigation to offset the loss of habitat (acreage and type) should be included in the DEIR. Any mitigation proposed should be covered under a conservation easement, include a long-term management plan, and ensure funding to manage the mitigation land in perpetuity.

Comment #4: Impacts to Burrowing Owl (*Athene cunicularia*)

Issue: A review of California Natural Diversity Database (CNDDB) indicates multiple occurrences of burrowing owl within two miles north of the Project site. The Project site has the potential to support burrowing owls

Specific impact: The Project may result in direct and indirect burrowing owl mortality or injury, the disruption of natural burrowing owl breeding behavior, and loss of breeding, wintering and foraging habitat for the species. Project impacts would contribute to statewide population

declines for burrowing owl. Within the Antelope Valley, the species still persists in low densities and continues to experience significant direct and cumulative habitat loss.

Why impact would occur: Impacts to burrowing owl could result from vegetation clearing and other ground disturbing activities. Project disturbance activities may result in crushing or filling of active burrowing owl burrows causing the death or injury of adults, eggs and young. The Project will remove burrowing owl foraging habitat by eliminating native vegetation that supports essential rodent, insect, and reptile that are prey for burrowing owl. Rodent control activities could result in direct and secondary poisoning of burrowing owl ingesting treated rodents.

Evidence impact would be significant: Take of individual burrowing owls and their nests is defined by Fish and Game Code section 86, and prohibited by sections 3503, 3503.5 and 3513. Without appropriate take avoidance surveys prior to project operations including, but not limited to, ground and vegetation disturbing activities and rodent control activities, adverse impacts to burrowing owl may occur because species presence/absence has not been verified. In addition, burrowing owl qualifies for enhanced consideration afforded to species under CEQA, which can be shown to meet the criteria for listing as endangered, rare or threatened (CEQA Guidelines, § 15380(d)).

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: To reduce Project impacts to burrowing owl to less than significant, CDFW recommends that the Project adhere to CDFW's March 7, 2012, *Staff Report on Burrowing Owl Mitigation* (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843). All survey efforts should be conducted, and results included in the DEIR to allow CDFW to analyze impacts, avoidance, minimization and mitigation measures.

Mitigation Measure #2: Permanent impacts to occupied owl burrows and adjacent foraging habitat should be offset by setting aside replacement habitat to be protected in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity, which should include an appropriate endowment to provide for the long-term management of mitigation lands. CDFW recommends that the City require a burrowing owl mitigation plan, with details included in the DEIR, be submitted to CDFW for review and approval prior to Project implementation.

Mitigation Measure #3: For proposed preservation and/or restoration, the final environmental document should include measures to protect the targeted habitat values from direct and indirect negative impacts in perpetuity. The objective should be to offset the project-induced qualitative and quantitative losses of burrowing owl habitat values. Issues that should be addressed include, but are not limited to, restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate endowment should be provided for the long-term management of mitigation lands. CDFW recommends that mitigation occur at a state-approved bank or via an entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012), which amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.

Mitigation Measure #4: Project use of rodenticides that could result in direct or secondary poisoning to burrowing owl should be avoided.

Comment #5: Value of Proposed Open Space

Issue: CDFW is concerned that the proposed avoided open space area would be surrounded on all sides by development. The proposed open space location appears to be 400 feet wide or less.

Specific impact: Haskell Canyon Open Space is located to the north of the proposed Project, and David March Park is located to the south of the proposed Project. CDFW is concerned the proposed on-site, isolated open space will be surrounded on all sides by development, thereby cutting off connection to the existing, protected open spaces. This provides relatively low biological value due to habitat fragmentation and increased edge effects. CDFW is concerned the proposed Project will affect a larger wildlife reserve and movement corridor.

Why impact would occur: Smaller patch size of land means the land is subject to greater influences of edge effect. These include Argentine ant invasions known to occur when irrigation is introduced, as well as competition from non-native species, heat island effect, shading, noise, lighting, human disturbance, fuel modification, and not having enough land to properly establish territories and/or carry out all parts of a lifecycle.

Evidence impact would be significant: Large concrete slabs, paving, trails, debris basins, housing, v-ditches, and irrigated areas retain moisture in the soil. Invasive Argentine ants thrive in this perennially moist zone. Invasion and establishment of Argentine ant colonies may occur due to soil disturbance, introduction of hardened surfaces (paving, cement, storm drains and structures), and irrigation (Menke, 2007). Sites within 200 meters (656 feet) of urban areas are more likely to have been invaded by Argentine ants (Mitrovich, 2010). This is significant because Argentine ants negatively impact and displace native ants, altering the ecosystem. Studies show native honeybees spend 75 percent less time foraging on inflorescences with Argentine ants, reducing seed production and long-term population viability of native plants (Lach, 2008). Since the proposed open space area is a 400-foot-wide bubble that would be surrounded by developments, trails, and irrigated slopes, the value of this open space will be dramatically reduced for native plants and animals. Studies have demonstrated that habitat patches that are road-less and inaccessible to humans serve to better conserve many target species than do areas with roads and accessible habitat patches (National Research Council, 1995). Additionally, studies show that habitat remnants from 24-247 acres do not retain their complement of native vertebrate species for longer than a few decades, leading to collapse of the ecosystem (Soule, 1992).

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: CDFW recommends clustering development, reducing the footprint of the development, and/or eliminating parks and development to reduce the disturbance acreage. CDFW also recommends combining any open space into fewer, larger areas that will be less affected by edge effect, thereby increasing their biological value.

Mitigation Measure #2: It is not clear if fuel modification will occur in the proposed open space. The DEIR should clearly define areas that will be subject to fuel modification and remove this

acreage from natural open space calculations. CDFW considers areas subject to fuel modification (e.g., thinning, trimming, irrigating) impacts to the ecosystem that should be mitigated.

General Comments

1) To enable CDFW to adequately review and comment on the proposed project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in an DEIR:

   a) A complete discussion of the purpose and need for, and description of, the proposed project, including all staging areas and access routes to the construction and staging areas.

   b) A range of feasible alternatives to ensure that alternatives to the proposed project are fully considered and evaluated; the alternatives should avoid or otherwise minimize impacts to sensitive biological resources, particularly wetland/riparian habitat which appears to occur within the project site. Specific alternative locations should be evaluated in areas with lower resource sensitivity where appropriate.

Biological Resources within the Project's Area of Potential Effect

2) To provide a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats, the EIR should include the following information:

   a) Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis placed on resources that are rare or unique to the region.

   b) A thorough, recent floristic-based assessment of special status plants and natural communities, following the CDFW's recent updated Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW, 2018). The protocols are available at the following website: http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959). CDFW recommends that floristic, alliance- and/or association-based mapping and vegetation impact assessments be conducted at the project site and neighboring vicinity. The Manual of California Vegetation, second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2008). Adjoining habitat areas should be included in this assessment where site activities could lead to direct or indirect impacts off-site. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

   c) A current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. CDFW's California Natural Diversity Data Base in Sacramento should be contacted at www.wildlife.ca.gov/biogeodata/ to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

An inventory of rare, threatened, endangered, and other sensitive species on site and within the area of potential effect. CDFW recommends the final environmental document address species which meet the CEQA definition, including SSC (CEQA Guidelines, §§ 15380, 15063, and 15065). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable are strongly recommended. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service. In assigning "impact significance" to populations of non-listed species, such as SSC, factors to consider include population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features.

Analyses of the Potential Project-Related Impacts on the Biological Resources

3) To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the DEIR:

   a) Potential adverse impacts from lighting, noise, human activity, exotic species, and drainage should also be included. The latter subject should address: project-related changes on drainage patterns on and downstream of the project site; the volume, velocity, and frequency of existing and post-project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and, post-project fate of runoff from the project site. The DEIR analysis should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary, and related potential impacts to habitat supported by groundwater. Mitigation measures proposed to alleviate such impacts should be included in the DEIR.

   b) Indirect project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a Natural Community Conservation Program [NCCP; Fish & Game Code, § 2800 *et seq.*]). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR.

   c) The land use designations and zoning of areas for development projects or other uses that are nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these land use/zoning conflicts should be included in the EIR.

   d) A cumulative effects inventory and analysis. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Mitigation for the Project-related Biological Impacts

4) The DEIR should include measures to fully avoid and otherwise protect Rare Natural Communities from project-related impacts. CDFW considers these communities as threatened habitats having both regional and local significance.

5) The DEIR should include mitigation measures for adverse project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable, and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. For off-site mitigation, we recommend use of a CDFW-approved mitigation bank or other acceptable location approved by CDFW. Any lands proposed as mitigation should have a recorded conservation easement and be dedicated to an entity which has been approved to hold/manage lands pursuant to Assembly Bill 1094 (2012), which amended Government Code sections 65965-65968.

6) For proposed preservation and/or restoration, the DEIR should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

7) Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

   To ensure that all measures to avoid or mitigate significant impacts to biological resources are implemented, the DEIR should include a mitigation monitoring and reporting program that clearly describes the impact, proposed measure, implementing entity, timeframe, reporting entity/mechanism, and completion date.

Filing Fees

The project, as proposed, could have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & Game Code, § 711.4; Pub. Resources Code, § 21089).

Conclusion

We appreciate the opportunity to comment on the project to assist the City in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the City has to our comments and to receive notification of any forthcoming hearing date(s) for the project. If you have any questions or comments regarding this letter, please contact Kelly Schmoker-Stanphill, Senior Environmental Scientist (Specialist), at (626) 335-9092 or by email at Kelly.schmoker@wildlife.ca.gov.

Sincerely,

Erinn Wilson
Environmental Program Manager I

cc: CDFW
Victoria Tang – Los Alamitos
Andrew Valand – Los Alamitos
Kelly Schmoker – Glendora
Jeffrey Humble- Los Alamitos

Scott Morgan (State Clearinghouse)

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Mr. Hai Nguyen
City of Santa Clarita
January 24, 2018

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DEPARTMENT OF TRANSPORTATION
DISTRICT 7 – Office of Regional Planning
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
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FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

January 14, 2019

Hai Nguyen
City of Santa Clarita
23920 Valencia Boulevard, Suite 302
Santa Clarita

RE: Bouquet Canyon Residential Development & Bouquet Canyon Rd Realignment – Notice of Preparation for Environmental Impact Report
GTS # 07-LA-2018-02075
SCH# 2018121009
Vic. LA / 14 / 29.681

Dear Mr. Nguyen:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The project's tentative tract map is proposed to subdivide the subject property into 70 lots to facilitate development of 461 housing units with related infrastructure, dedicated open space areas, trails, recreation areas, and landscape elements on 57.1 acres of primarily undeveloped land. Proposed homes would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. The project would also include the closure of a portion of Bouquet Canyon Road, between Pam Court and Hob Ave, and the construction of a new alignment of Bouquet Canyon Rd. The project anticipates minimizing grading on the significant ridgeline. The project would include the channelization of part of the flood zone through the site to carry high storm flows while retaining a natural stream course for low flows.

Caltrans has reviewed the Notice of Preparation (NOP) and has the following comments:

- Caltrans looks forward to reviewing your Traffic Impact Study (TIS) in order to assess the effects on performance to Interstate 5 and State Route 14. In the TIS please include Trip Generation and distribution to and from the development, and the development's impacts to the state highway system, if any.

- Under Senate Bill 743 (2013), CEQA review of transportation impacts of a proposed development are adapting to eliminate consideration of delay-and capacity-based metrics such as level of service (LOS) and instead focusing analysis on another metric of impact "Vehicle Miles Traveled (VMT). Therefore, we are moving towards replacing LOS with VMT when evaluating traffic impact. For any future project, like the proposed EIR, we encourage the Lead Agency to integrate transportation and land use in a way that reduces Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions by facilitating the provision of more

proximate goods and services to shorten trip lengths and achieve a high level of non-motorized travel and transit use. We also encourage the Lead Agency to evaluate the potential of Transportation Demand Management (TMD) strategies and Intelligent Transportation System (ITS) applications in order to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements.

As a reminder, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods.

If you have any questions regarding these comments, please contact project coordinator Reece Allen, at reece.allen@dot.ca.gov and refer to GTS# 07-LA-2018-02075

Sincerely,

MIYA EDMONSON
IGR/CEQA Branch Chief

U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

December 18, 2018

Hai Nguyen, Associate Planner
City of Santa Clarita, Community Development Department
23920 Valencia Boulevard, Suite 302
Santa Clarita, California 91355

Dear Mr. Nguyen:

This is in response to your comments regarding the Notice of Preparation of a Draft Environmental Impact Report and Public Scoping Meeting for Proposed Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment project.

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the County of Los Angeles (Community Number 065043), Maps revised December 21, 2018 and City of Santa Clarita (Community Number 060729), Maps revised September 26, 2008. Please note that the City of Santa Clarita, Los Angeles County, California is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any ***development*** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

- All buildings constructed within a coastal high hazard area, (any of the "V" Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/business/nfip/forms.shtm.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The Santa Clarita floodplain manager can be reached by calling Christina Monde, Associate Engineer, at (661) 255-4959. The Los Angeles County floodplain manager can be reached by calling Patricia Wood, Senior Civil Engineer, at (626) 458-6131.

If you have any questions or concerns, please do not hesitate to call Brian Trushinski of the Mitigation staff at (510) 627-7183.

Sincerely,

Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch

cc:
Christina Monde, Associate Engineer, City of Santa Clarita
Patricia Wood, Senior Civil Engineer, Los Angeles County
Garret Tam Sing, State of California, Department of Water Resources, Southern Region Office
Brian Trushinski, NFIP Planner, DHS/FEMA Region IX
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

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FIFTH DISTRICT

October 31, 2018

Hai Nguyen, Associate Planner
City of Santa Clarita
Community Development Department
23920 Valencia Boulevard
Santa Clarita, CA 91355

Dear Mr. Nguyen:

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT, "BOUQUET CANYON RESIDENTIAL PROJECT," CONSISTS OF THE DEVELOPMENT OF 461 HOUSING UNITS WITH RELATED INFRASTRUCTURE, OPEN SPACE, TRAILS, RECREATION, AND LANDSCAPE ELEMENTS ON APPROXIMATELY 57-ACRES OF UNDEVELOPED LAND, SANTA CLARITA, FFER 201800108

The Notice of Preparation of a Draft Environmental Impact Report has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

1. Please identify the station that would provide first response to the project area along with the present staffing, facilities, engines, and other fire response resources.

   Fire Station 108 is the jurisdictional station for the project site; it is located at 28799 N. Rock Canyon Drive, Santa Clarita, CA 91390. It is staffed with a 4-person engine company (1-Captain, 1-Fire Fighter Specialist and 2-Fire Fighters).

2. What is the response time standard or goal for a project of this type in this area?

   The Fire Department uses national guidelines of a 5-minute response time for the 1st-arriving unit for fire and EMS responses and 8 minutes for the advanced life support (paramedic) unit in urban areas, and 8-minute response time for the 1st-arriving unit and 12 minutes for advanced life support (paramedic) units in suburban areas. The City of Santa Clarita is a mix of urban/suburban area.

3. What are the current LACoFD response times to this area? Will LACoFD be able to maintain an adequate level of the fire response service with the implementation of the proposed project?

   During 2017, Fire Station 108 had an average emergency response time of 6:14 minutes.

   Yes, w*hile each additional development creates greater demands on existing resources at this time it appears the project would not have a significant effect on service demands.*

4. Are there any plans to expand or construct new fire station facilities or would the project create the need for expanded or new facilities? If so, please explain.

   Currently, there are no plans for facility expansion or new facilities in the project area.

5. Do you have any concerns regarding emergency access to the project site or within the proposed development plan during or following construction?

   To be answered by Land Development Division.

6. Is the project site located within a formally designated High Fire Zone? If so, what are the conditions that make it so and what design criteria must be met to reduce or eliminate wildland fire hazards to an acceptable level?

   To be answered by Forestry Division.

LAND DEVELOPMENT UNIT:

The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, fire hydrants, brush clearance and fuel modification plans.

When involved with subdivision in a city contracting fire protection with the County of Los Angeles Fire Department, the Fire Department requirements for access, fire flows, and hydrants are addressed during the subdivision tentative map stage.

ACCESS REQUIREMENTS:

1. The proposed development may necessitate multiple ingress/egress access for the circulation of traffic and emergency response issues.

2. Access roads shall be maintained with a minimum of 10 feet of brush clearance on each side. Fire access roads shall have an unobstructed vertical clearance clear-to-sky with the exception of protected tree species. Protected tree species overhanging fire access roads shall be maintained to provide a vertical clearance of 13 feet 6 inches.

3. All on-site Fire Apparatus Access Roads shall be labeled as "Private Driveway and Fire Lane" on the site plan along with the widths clearly depicted on the plan. Labeling is necessary to assure the access availability for Fire Department use. The designation allows for appropriate signage prohibiting parking.

4. Fire Apparatus Access Roads must be installed and maintained in a serviceable manner prior to and during the time of construction.

5. All fire lanes shall be clear of all encroachments and shall be maintained in accordance with the Title 32, County of Los Angeles Fire Code.

6. The Fire Apparatus Access Roads and designated fire lanes shall be measured from flow line to flow line.

7. For detached single family homes only provide a minimum unobstructed width of 20 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Apparatus Access Roads to within 150 feet of all portions of the exterior walls of the first story of the building, as measured by an approved route around the exterior of the building.

a. The required 20-foot wide driving surface shall be increased to 26 feet when fire hydrants are required. The 26-foot width shall be maintained for a minimum of 25 feet on each side of the hydrant location.

8. For commercial, mixed use, and multi-family developments provide a minimum unobstructed width of 26 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Department vehicular access to within 150 feet of all portions of the exterior walls of the first story of the building, as measured by an approved route around the exterior of the building.

9. For commercial, mixed use, and multi-family developments over 30 feet in height, provide a minimum unobstructed width of 28 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Department vehicular access to within 150 feet of all portions of the exterior walls of the first story of the building, as

measured by an approved route around the exterior of the building when the height of the building above the lowest level of the Fire Apparatus Access Road is more than 30 feet high or the building is more than three stories. The access roadway shall be located within a minimum of 15 feet and a maximum of 30 feet from the building and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial Fire Apparatus Access Road is positioned shall be approved by the fire code official.

10. If the Fire Apparatus Access Road is separated by island provide a minimum unobstructed width of 20 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Department vehicular access to within 150 feet of all portions of the exterior walls of the first story of the building, as measured by an approved route around the exterior of the building.

11. The dimensions of the approved Fire Apparatus Access Roads shall be maintained as originally approved by the fire code official.

12. Dead-end Fire Apparatus Access Roads in excess of 150 feet in-length shall be provided with an approved Fire Department turnaround.

13. Fire Apparatus Access Roads shall be provided with a 32-foot centerline turning radius.

14. Fire Apparatus Access Roads shall be designed and maintained to support the imposed load of fire apparatus weighing 75,000 pounds and shall be surfaced so as to provide all-weather driving capabilities. Fire Apparatus Access Roads having a grade of 10 percent or greater shall have a paved or concrete surface.

15. Fire Apparatus Access Roads shall not exceed 15 percent in grade.

16. Fire Apparatus Access Roads shall not be obstructed in any manner, including by the parking of vehicles, or the use of traffic calming devices, including but not limited to, speed bumps or speed humps.

17. Traffic Calming Devices, including but not limited to, speed bumps and speed humps, shall be prohibited unless approved by the fire code official.

18. A minimum 5-foot wide approved firefighter access walkway leading from the Fire Department Access Road to all required openings in the building's exterior walls shall be provided for firefighting and rescue purposes.

19. Parking on Public and/or Private Fire Apparatus Access Roads

a. Provide a minimum width of 36 feet for parallel parking on both sides of the Fire Apparatus Access Road and/or on cul-de-sac design with a length of 701 feet to 1,000 feet.

b. Provide a minimum width of 34 feet for parallel parking on one side of the Fire Apparatus Access Road with through access and with one side of the roadway being designated "No Parking – Fire Lane."

c. Provide a minimum width of 34 feet for parallel parking on both sides of the Fire Apparatus Access Road when the street is designed to be a cul-de-sac less than 700 feet in- length.

20. The method of gate control shall be subject to review by the Fire Department prior to clearance to proceed to public hearing. All gates to control vehicular access shall be in compliance with the following:

a. The keypad location shall be located a minimum of 50 feet from the public right-of-way.

b. Provide a minimum 32-foot turning radius beyond the keypad prior to the gate entrance at a minimum width of 20' for turnaround purposes.

c. The gated entrance design with a single access point (ingress and egress) shall provide for a minimum width of 20 feet clear-to-sky with all gate hardware is clear of the access way.

d. Where the Fire Apparatus Access Road consists of a divided roadway the gate width shall be not less than 15 feet for residential use and 20 feet for commercial/industrial uses. Each side of the roadway shall be clear-to-sky.

e. Construction of gates shall be materials that allow manual operations by one person.

f. Gates shall be of the swinging or sliding type.

g. The security gate shall be provided with an approved means of emergency operation and shall be maintained operational at all times and replaced or repaired when defective.

h. Electric gate operators where provided shall be listed in accordance with UL 325.

i. Gates intended for automatic operation shall be designed, constructed, and installed to comply with the requirements of ASTM F2200.

j. All locking devices shall comply with the County of Los Angeles Fire Department Regulation 5, Compliance for Installation of Emergency Access Devices.

WATER SYSTEM REQUIREMENTS:

1. All fire hydrants shall measure 6"x 4"x 2-1/2" brass or bronze conforming to current AWWA standard C503 or approved equal and shall be installed in accordance with the County of Los Angeles Fire Code.

2. All required PUBLIC fire hydrants shall be installed, tested, and accepted prior to beginning construction.

3. All required private on-site fire hydrants shall be installed, tested, and approved prior to building occupancy.

4. Plans showing underground piping for private on-site fire hydrants shall be submitted to the Sprinkler Plan Check Unit for review and approval prior to installation. Fire Code 901.2 and County of Los Angeles Fire Department Regulation 7.

5. All on-site fire hydrants shall be installed a minimum of 25' feet from a structure or protected by a two (2) hour rated firewall. Exception: For fully sprinkled multi-family structures on-site hydrants may be installed a minimum of 10 feet from the structure. Indicate compliance prior to project proceeding to the public hearing process. Fire Code Appendix C106.1.

6. The required fire flow for the public fire hydrants for single-family residential homes less than a total square footage of 3,600 feet is 1,250 gpm at 20 pounds psi residual pressure for 2 hours with one public fire hydrant flowing. Any single-family residential home 3,601 square feet or greater shall comply with Table B105.1 of the Fire Code in Appendix B.

7. The required fire flow for the public fire hydrants for buildings other than single-family homes shall comply with Table B105.1 of the Fire Code in Appendix B.

8. The required fire flow for the on-site private fire hydrants for this project shall comply with Table B105.1 of the Fire Code in Appendix B.

9. An approved automatic fire sprinkler system is required for the proposed buildings within this development. Submit design plans to the Fire Department Sprinkler Plan Check Unit for review and approval prior to installation.

10. The public and on-site fire hydrant locations will be determined by the Fire Department with the submittal of plan.

FUEL MODIFICATION:

1. This property is located within the area described by the Fire Department as the Very High Fire Hazard Severity Zone and a Fuel Modification Plan will be required. For details, please contact the Department's Fuel Modification Unit which is located at Fire Station 32, 605 North Angeleno Avenue in the City of Azusa, CA 91702-2904. They may be reached at (626) 969-5205.

Additional Fire Department requirements may need to be addressed with the submittal of plans for review.

For any questions regarding the report, please contact FPEA Wally Collins at (323) 890-4243 or Wally.Collins@fire.lacounty.gov.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.

Under the Los Angeles County Oak tree Ordinance, a permit is required to cut, destroy, remove, relocate, inflict damage or encroach into the protected zone of any tree of the Oak genus which is 25 inches or more in circumference (eight inches in diameter), as measured 4 1/2 feet above mean natural grade.

A fuel management/modification and fire hazard reduction plan should be developed and implemented prior to construction.

If Oak trees are known to exist in the proposed project area further field studies should be conducted to determine the presence of this species on the project site.

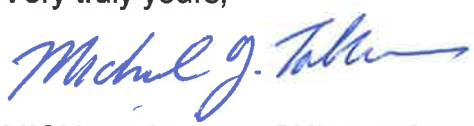
The County of Los Angeles Fire Department's Forestry Division has no further comments regarding this project.

HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments regarding the Lead Agency's "Fire Department Resources" questionnaire pertaining to the project site.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,



MICHAEL Y. TAKESHITA, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

MYT:ac

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

December 17, 2018

Hai Nguyen
City of Santa Clarita
23920 Valencia Boulevard, Suite 302
Santa Clarita, CA 91355

RE: SCH# 2018121009 Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment, Los Angeles County

Dear Ms. Nguyen:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Katy.Sanchez@nahc.ca.gov.

Sincerely,

for

Katy Sanchez
Associate Enviromental Planner

cc: State Clearinghouse

SANTA MONICA MOUNTAINS CONSERVANCY
RAMIREZ CANYON PARK
5750 RAMIREZ CANYON ROAD
MALIBU, CALIFORNIA 90265
PHONE (310) 589-3200
FAX (310) 589-3207
WWW.SMMC.CA.GOV

March 24, 2019

Hai Nguyen
City of Santa Clarita
23920 Valencia Boulevard, Suite 302
Santa Clarita, California 91355

Bouquet Canyon Residental Development
and Bouquet Canyon Road Realignment
Notice of Preparation
SCH No. 2018121009

Dear Mr. Nguyen:

The Santa Monica Mountains Conservancy (Conservancy) offers the following comments on the proposed tentative tract map to facilitate the development of 461 housing units on 57.1 acres. The project is antithetical to the City's objectives to maintain land forms and obtain commensurately-scaled open space dedications. The project eliminates a substantial section of Bouquet Creek in its full natural form with alluvial scrub vegetation and eliminates a prominent ridgeline in order to generate fill material. As proposed, the project would result in unavoidable significant adverse biological and visual (aesthetic) impacts. As proposed the project would not provide any ecologically substantial open space area or open space area that remains connected to an un-channelized section of Bouquet Creek.

Bouquet Creek is known fish habitat for the federally endangered and state fully protected unarmored threespine stickleback. USFWS evaluated the presence of UTS in Bouquet Creek and 1998, 2003, and 2005 surveys concluded that UTS are abundant in the creek and successfully reproduced. Even under drought conditions, a refugium in the upper stream maintains a large population. "Take" of species that are "fully protected" is only authorized under the Fully Protected Fish Statute at Section 5515 of the California Fish & Game Code. The DEIR needs to ascertain whether the development would have significant adverse impacts on the unarmored threespine stickleback, a species of fish listed as "fully protected" under Section 5515 of the California Fish and Game Code and as an endangered species under the CESA. (14 Cal. Code Regs. Section 670.5). The DEIR should not contradict implicating California policy that protects its fish and wildlife. Yes the application of two different wildlife protection statutes exists – the Fully Protected Fish Statute and the CESA – to the same species, the unarmored threespine stickleback. The Draft Environmental Impact Report (DEIR) should not attempt to "harmonize" the two statutes as this would be unnecessary, illogical and inconsistent with the canons of statutory

interpretation including without limitation *expressio unius et exclusio alterius,* and other legal principles. (See *Pacific Lumber Co. v. State Water Resources Control Bd*. (2006) 37 Cal.4th 921 ("*Pacific Lumber*").

Section 5515 simply reflects a decision of the Legislature, as acknowledged by the CDFW, that fully protected species are entitled to greater protection than endangered and threatened species. To wit and in the instant matter, "***The Department is unable to authorize incidental take of "fully protected" species when activities are proposed in areas inhabited by those species.***" ("Other Protections and CESA Procedures on CDFW's official Website, http://www.dfg.ca.gov/habcon/cesa/other_protects.html; (emphasis supplied)).

The DEIR needs to show that there is no adverse impact to UTS and/or its habitat, and any/all mitigation actions cannot result in take of UTS. As such, any take associated with the project and its mitigation authorized under ESA would undermine the fully protected statute.

Stream channelization is documented in the UTS Recovery Plan (USFWS 1985) as a threat to UTS, as it "increases water velocity in pools, eliminates shallow backwaters and reduces aquatic vegetation." Therefore, the protection and restoration for the establishment of pools, shallow backwater areas, and aquatic vegetation in Bouquet Canyon Creek is important for preservation of the UTS population.

The Draft Environmental Impact Report (DEIR) must include alternatives that: 1) do not chop off the top of the prominent ridgeline for a linear park with a full length ridgeline road; 2) do not channelize any of the onsite length of Bouquet Creek except the minimum to allow the new bridge over the creek; and 3) do provide 10 acres of ungraded, permanently protected habitat that abuts a future un-channelized section of Bouquet Creek to provide habitat connectivity to National Forest lands. To provide the least damaging alternative for decision makers to analyze, the DEIR must include an alternative that fully encompasses all three of the above described parameters.

If the need for fill to construct a realignment of Bouquet Canyon Road is what is driving the project design, then the DEIR must state that fact. To compensate for the need to mine the prominent ridgeline for fill, the project should aggressively mitigate that adverse aesthetic impact by including many acres of ungraded onsite contiguous open space in public view corridors along either existing Bouquet Canyon Road or the proposed realignment of the road. Shy of such specific open space mitigation being required, the project must be conditioned to purchase at least ten contiguous acres of natural habitat along a nearby section of Bouquet

habitat must have a recorded conservation easement or be dedicated in fee simple to a public agency. It must also provide the land interest holder with an upfront longterm monitoring payment of $50,000 to generate annual visitation funding.

The DEIR must address the potential of growth-inducing impacts of the new road alignment providing access and utilities to the abutting large open space parcels to southeast. The DEIR must also address the potential adverse ecological impacts of street lighting and vehicle traffic on the private HOA open space area that abuts the road realignment.

The use of County correctional facility land to facilitate the proposed development appears to be a gift of public funds. What compensation will the County receive for the loss of its land to private uses and other public uses?

The DEIR must analyze whether the proposed new road alignment and large slope easements through the Plum LLC lots to the southeast will eliminate habitat that was mitigation for the adjoining existing housing development. Does the project description properly include these offsite components proposed on land that the applicant currently has no interest in?

The DEIR must address how the proposed project would surround all of the site with sections of existing or proposed Bouquet Canyon roadway. With exception the cement culvert carrying Bouquet Canyon Creek under the new road alignment the site would be biologically isolated.

The DEIR must carefully analyze what new barrier will be constructed between the correctional facility and the new road alignment. What adverse impacts will the additional traffic and closer proximity of traffic have on the youth in the correctional facility?

Does the project contain all the necessary infrastructure and long-term funding to address TMDL issues?

Please direct questions and future documents to Paul Edelman of our staff at the above letterhead address, at edelman@smmc.ca.gov, and 310-589-3200 ext. 128.

Sincerely,

IRMA MUÑOZ
Chairperson

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

December 4, 2018

To: Reviewing Agencies

Re: Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment
SCH# 2018121009

Attached for your review and comment is the Notice of Preparation (NOP) for the Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Hai Nguyen
City of Santa Clarita
23920 Valencia Boulevard, Suite 302
Santa Clarita, CA 91355

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2018121009
Project Title Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment
Lead Agency Santa Clarita, City of

Type NOP Notice of Preparation

Description Note: Review Per Lead

A tentative tract map is proposed to subdivide the subject property into 70 lots to facilitate development of 461 housing units with related infrastructure, dedicated open space areas, trails, recreation areas, and landscape elements on 57.1 acres of primarily undeveloped land. Proposed homes would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. The project would also include the closure of a portion of Bouquet Canyon Road, between Pam Court and Hob Ave, and the construction of a new alignment of Bouquet Canyon Rd. The project anticipates minimizing grading on the significant ridgeline. The project would include the channelization of part of the floodzone through the site to carry high storm flows while retaining a natural stream course for low flows.

Lead Agency Contact

Name Hai Nguyen
Agency City of Santa Clarita
Phone (661) 255-4365 **Fax**
email
Address 23920 Valencia Boulevard, Suite 302
City Santa Clarita **State** CA **Zip** 91355

Project Location

County Los Angeles
City Santa Clarita
Region
Cross Streets Bouquet Canyon Rd and Copper Hill Dr
Lat / Long 34° 27' 26" N / 118° 29' 33" W
Parcel No. 2812-008-003, -013, -021, -022, -031
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways Santa Clara River, Bouquet Creek
Schools Canyon HS, Leona Cox ES, Rosedell ES, Saugus HS
Land Use urban residential 2 and UR5

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Noise; Other Issues; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Tribal Cultural Resources; Vegetation; Water Quality; Water Supply; Wetland/Riparian

Reviewing Agencies Resources Agency; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Fish and Wildlife, Region 5; Office of Emergency Services, California; Department of Housing and Community Development; Native American Heritage Commission; State Lands Commission; Caltrans, District 7; Air Resources Board, Transportation Projects; State Water Resources Control Board, Division of Drinking Water; Regional Water Quality Control Board, Region 4; Santa Monica Mountains Conservancy

Note: Blanks in data fields result from insufficient information provided by lead agency.

Document Details Report
State Clearinghouse Data Base

Date Received 12/04/2018 ***Start of Review*** 12/04/2018 ***End of Review*** 01/18/2019

Note: Blanks in data fields result from insufficient information provided by lead agency.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH# 2018121009

Project Title: Bouquet Canyon Residential Development and Bouquet Canyon Road Realignment

Lead Agency: City of Santa Clarita | Contact Person: Hai Nguyen

Mailing Address: 23920 Valencia Boulevard, Suite 302 | Phone: (661) 255-4365

City: Santa Clarita | Zip: 91355 | County: Los Angeles

Project Location: County: Los Angeles | City/Nearest Community: Santa Clarita

Cross Streets: Bouquet Canyon Road and Copper Hill Dr. | Zip Code: 91355

Longitude/Latitude (degrees, minutes and seconds): 34 ° 27 ′ 26 ″ N / 118 ° 29 ′ 33 ″ W | Total Acres: 57.1

Assessor's Parcel No.: 2812-008-003; 2812-008-013; 2812-008-021; 2812-008-022; and 2812-008-031 | Section: | Twp.: | Range: | Base:

Within 2 Miles: State Hwy #: | Waterways: Santa Clara River, Bouquet Creek

Airports: | Railways: | Schools: Canyon HS, Leona Cox ES, Rosedell ES, Saugus HS

Document Type:

CEQA: [x] NOP [ ] Early Cons [ ] Neg Dec [ ] Mit Neg Dec [ ] Draft EIR [ ] Supplement/Subsequent EIR (Prior SCH No.) [ ] Other:

NEPA: [ ] NOI [ ] EA [ ] Draft EIS [ ] FONSI Other: [ ] Joint Document [ ] Final Document [ ] Other:

Governor's Office of Planning & Research

DEC 04 2018

STATE CLEARINGHOUSE

Local Action Type:

[ ] General Plan Update [ ] General Plan Amendment [ ] General Plan Element [ ] Community Plan [ ] Specific Plan [ ] Master Plan [ ] Planned Unit Development [x] Site Plan [ ] Rezone [ ] Prezone [ ] Use Permit [x] Land Division (Subdivision, etc.) [ ] Annexation [ ] Redevelopment [ ] Coastal Permit [ ] Other:

Development Type:

[x] Residential: Units 461 Acres 27.6
[ ] Office: Sq.ft. Acres Employees
[ ] Commercial: Sq.ft. Acres Employees
[ ] Industrial: Sq.ft. Acres Employees
[ ] Educational:
[x] Recreational: one hilltop park, five neighborhood parks, one linear park, one tot lot, two private recreation sites
[ ] Water Facilities: Type MGD
[ ] Transportation: Type
[ ] Mining: Mineral
[ ] Power: Type MW
[ ] Waste Treatment: Type MGD
[ ] Hazardous Waste: Type
[ ] Other:

Project Issues Discussed in Document:

[x] Aesthetic/Visual
[x] Agricultural Land
[x] Air Quality
[x] Archeological/Historical
[x] Biological Resources
[ ] Coastal Zone
[x] Drainage/Absorption
[ ] Economic/Jobs
[ ] Fiscal
[x] Flood Plain/Flooding
[x] Forest Land/Fire Hazard
[x] Geologic/Seismic
[x] Minerals
[x] Noise
[x] Population/Housing Balance
[x] Public Services/Facilities
[x] Recreation/Parks
[x] Schools/Universities
[ ] Septic Systems
[x] Sewer Capacity
[x] Soil Erosion/Compaction/Grading
[x] Solid Waste
[x] Toxic/Hazardous
[x] Traffic/Circulation
[x] Vegetation
[x] Water Quality
[x] Water Supply/Groundwater
[x] Wetland/Riparian
[x] Growth Inducement
[x] Land Use
[x] Cumulative Effects
[ ] Other: Energy, GHG, Tribal Resources

Present Land Use/Zoning/General Plan Designation:

Urban Residential 2 (UR2) and Urban Residential 5 (UR5)

Project Description: *(please use a separate page if necessary)*

A tentative tract map is proposed to subdivide the subject property into 70 lots to facilitate development of 461 housing units with related infrastructure, dedicated open space areas, trails, recreation areas, and landscape elements on 57.1 acres of primarily undeveloped land. Proposed homes would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. The project would also include the closure of a portion of Bouquet Canyon Road, between Pam Court and Hob Avenue, and the construction of a new alignment of Bouquet Canyon Road. The project anticipates minimizing grading on the significant ridgeline. The project would include the channelization of part of the floodzone through the site to carry high storm flows while retaining a natural stream course for low flows.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

NOP Distribution List

County: Los Angeles

SCH# 2018121009

Resources Agency

- [ ] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Denise Peterson
- [ ] **California Coastal Commission**
  Allyson Hitt
- [ ] **Colorado River Board**
  Elsa Contreras
- [ ] **Dept. of Conservation**
  Crina Chan
- [x] **Cal Fire**
  Dan Foster
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [x] **Office of Historic Preservation**
  Ron Parsons
- [ ] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve Goldbeck
- [ ] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
  Curt Babcock
- [ ] **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
  Jeff Drongesen
- [ ] **Fish & Wildlife Region 3**
  Craig Weightman
- [ ] **Fish & Wildlife Region 4**
  Julie Vance
- [x] **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
  Heidi Calvert
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
  William Paznokas
  Marine Region

Other Departments

- [ ] **California Department of Education**
  Lesley Taylor
- [x] **OES (Office of Emergency Services)**
  Monique Wilber
- [ ] **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] **Dept. of General Services**
  Cathy Buck
  Environmental Services Section
- [x] **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Erik Vink
- [ ] **Delta Stewardship Council**
  Anthony Navasero
- [ ] **California Energy Commission**
  Eric Knight
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Supervisor
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [x] **State Lands Commission**
  Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- [ ] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR**
  Christian Bushong
- [ ] **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Susan Zanchi
- [ ] **Caltrans, District 4**
  Patricia Maurice
- [ ] **Caltrans, District 5**
  Larry Newland
- [ ] **Caltrans, District 6**
  Michael Navarro
- [x] **Caltrans, District 7**
  Dianna Watson
- [ ] **Caltrans, District 8**
  Mark Roberts
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight**
  Jack Wursten
- [x] **Transportation Projects**
  Nesamani Kalandiyur
- [ ] **Industrial/Energy Projects**
  Mike Tollstrup
- [ ] **California Department of Resources, Recycling & Recovery**
  Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [x] **State Water Resources Control Board**
  Cindy Forbes – Asst Deputy
  Division of Drinking Water
- [ ] **State Water Resources Control Board**
  Div. Drinking Water #_____
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- [ ] **Dept. of Toxic Substances Control Reg. #_____**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [x] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

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- [x] Santa Monica Mtns. Conservancy

Last Updated 5/22/18

Appendix B: Air Quality, Energy, and Greenhouse Gas Modeling Worksheets

Part 1: Air Quality and Greenhouse Gas Modeling Worksheets

Bouquet Canyon Project_MHDT & Tier 4 Mitigation

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	10.52	1000sqft	0.24	10,522.00	0
City Park	2.65	Acre	2.65	115,434.00	0
Health Club	10.75	1000sqft	0.25	10,746.00	0
Recreational Swimming Pool	9.68	1000sqft	0.22	9,676.00	0
Apartments Mid Rise	78.00	Dwelling Unit	2.05	78,000.00	223
Condo/Townhouse High Rise	227.00	Dwelling Unit	3.55	227,000.00	649
Single Family Housing	61.00	Dwelling Unit	19.81	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	513	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor Source: Southern California Edison, 2018 Sustainability Report, dated May 2019.

Land Use - Per project description.

Construction Phase - Based on applicant assumptions.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Anticipated trenching equipment.

Trips and VMT - Earthwork would be balanced on-site.

Grading -

Vehicle Trips - Per traffic study.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD standards and regulations. Tier 4 engines per mitigation measure.

Energy Mitigation - % Improvement based on efficiency of 2019 Title 24 Standards compared to 2016 Title 24 Standards.

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	45.00	187.00
tblConstructionPhase	NumDays	35.00	132.00
tblConstructionPhase	NumDays	440.00	792.00
tblConstructionPhase	NumDays	35.00	396.00
tblGrading	MaterialExported	0.00	2,069,664.00
tblGrading	MaterialImported	0.00	2,069,664.00
tblLandUse	LandUseSquareFeet	10,520.00	10,522.00
tblLandUse	LandUseSquareFeet	10,750.00	10,746.00

Bouquet Canyon Project_MHDT & Tier 4 Mitigation - Los Angeles-South Coast County, Annual

tblLandUse	LandUseSquareFeet	9,680.00	9,676.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	513
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblVehicleTrips	ST_TR	6.39	10.77
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	4.31	10.77
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.77
tblVehicleTrips	SU_TR	5.86	10.77
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	3.43	10.77
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	10.77
tblVehicleTrips	WD_TR	6.65	10.77
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	4.18	10.77
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.77

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4074	4.9557	3.0938	5.0400e-003	1.4772	0.1718	1.6490	0.5907	0.1582	0.7488	0.0000	448.6006	448.6006	0.1186	0.0000	451.5642
2021	0.4168	5.2533	3.8075	6.1500e-003	0.8901	0.1650	1.0551	0.2660	0.1518	0.4178	0.0000	548.1158	548.1158	0.1392	0.0000	551.5952
2022	0.2948	2.2804	2.9492	6.8700e-003	0.2825	0.0944	0.3769	0.0757	0.0881	0.1638	0.0000	617.1930	617.1930	0.0902	0.0000	619.4488
2023	0.4114	2.5661	3.5805	9.5500e-003	0.4869	0.0954	0.5823	0.1305	0.0897	0.2203	0.0000	861.7659	861.7659	0.0917	0.0000	864.0592
2024	1.2978	2.6222	3.9595	0.0106	0.5745	0.0930	0.6675	0.1538	0.0879	0.2417	0.0000	956.4651	956.4651	0.0945	0.0000	958.8284
2025	0.5981	1.1595	1.8035	4.8900e-003	0.2697	0.0378	0.3075	0.0722	0.0357	0.1079	0.0000	440.8521	440.8521	0.0437	0.0000	441.9436
Maximum	**1.2978**	**5.2533**	**3.9595**	**0.0106**	**1.4772**	**0.1718**	**1.6490**	**0.5907**	**0.1582**	**0.7488**	**0.0000**	**956.4651**	**956.4651**	**0.1392**	**0.0000**	**958.8284**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1264	1.5948	3.1091	5.0400e-003	0.5755	9.7800e-003	0.5853	0.2270	9.6200e-003	0.2367	0.0000	448.6002	448.6002	0.1186	0.0000	451.5638
2021	0.1541	2.1031	3.9520	6.1500e-003	0.3627	8.2700e-003	0.3710	0.1084	8.2200e-003	0.1166	0.0000	548.1153	548.1153	0.1392	0.0000	551.5947
2022	0.1664	0.9313	3.1553	6.8700e-003	0.2200	0.0181	0.2381	0.0604	0.0179	0.0783	0.0000	617.1926	617.1926	0.0902	0.0000	619.4485
2023	0.2808	1.3025	3.6883	9.5500e-003	0.3793	0.0253	0.4046	0.1041	0.0250	0.1291	0.0000	861.7655	861.7655	0.0917	0.0000	864.0588
2024	1.1767	1.4499	4.0775	0.0106	0.4472	0.0314	0.4785	0.1225	0.0310	0.1535	0.0000	956.4647	956.4647	0.0945	0.0000	958.8280
2025	0.5465	0.6599	1.8637	4.8900e-003	0.2099	0.0132	0.2231	0.0575	0.0130	0.0705	0.0000	440.8519	440.8519	0.0437	0.0000	441.9434
Maximum	**1.1767**	**2.1031**	**4.0775**	**0.0106**	**0.5755**	**0.0314**	**0.5853**	**0.2270**	**0.0310**	**0.2367**	**0.0000**	**956.4647**	**956.4647**	**0.1392**	**0.0000**	**958.8280**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**28.47**	**57.31**	**-3.40**	**0.00**	**44.87**	**83.88**	**50.40**	**47.24**	**82.87**	**58.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2020**	**9-30-2020**	1.7771	0.2958
2	**10-1-2020**	**12-31-2020**	3.0414	1.3793
3	**1-1-2021**	**3-31-2021**	2.7689	1.2734
4	**4-1-2021**	**6-30-2021**	2.0797	0.9090
5	**7-1-2021**	**9-30-2021**	0.3952	0.0302

6	**10-1-2021**	**12-31-2021**	0.4157	0.0366
7	**1-1-2022**	**3-31-2022**	0.3968	0.0518
8	**4-1-2022**	**6-30-2022**	0.5030	0.1454
9	**7-1-2022**	**9-30-2022**	0.8326	0.4432
10	**10-1-2022**	**12-31-2022**	0.8399	0.4504
11	**1-1-2023**	**3-31-2023**	0.7257	0.3810
12	**4-1-2023**	**6-30-2023**	0.7272	0.3787
13	**7-1-2023**	**9-30-2023**	0.7352	0.3829
14	**10-1-2023**	**12-31-2023**	0.7948	0.4424
15	**1-1-2024**	**3-31-2024**	0.9745	0.6536
16	**4-1-2024**	**6-30-2024**	0.9670	0.6461
17	**7-1-2024**	**9-30-2024**	0.9776	0.6532
18	**10-1-2024**	**12-31-2024**	0.9852	0.6608
19	**1-1-2025**	**3-31-2025**	0.9205	0.6324
20	**4-1-2025**	**6-30-2025**	0.8221	0.5628
		Highest	3.0414	1.3793

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9865	0.1384	6.0979	6.1300e-003		0.3704	0.3704		0.3704	0.3704	38.8762	80.8730	119.7492	0.1218	2.6400e-003	123.5815
Energy	0.0321	0.2750	0.1210	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	763.9929	763.9929	0.0313	0.0111	768.0673
Mobile	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742
Waste						0.0000	0.0000		0.0000	0.0000	66.6460	0.0000	66.6460	3.9387	0.0000	165.1126
Water						0.0000	0.0000		0.0000	0.0000	7.9487	124.8552	132.8039	0.8235	0.0207	159.5703
Total	**4.0281**	**5.2185**	**20.0661**	**0.0645**	**5.1112**	**0.4357**	**5.5469**	**1.3698**	**0.4327**	**1.8024**	**113.4709**	**6,212.4158**	**6,325.8866**	**5.1585**	**0.0344**	**6,465.1059**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7956	0.1117	3.8004	6.4000e-004		0.0265	0.0265		0.0265	0.0265	0.0000	85.2675	85.2675	7.4200e-003	1.4500e-003	85.8852
Energy	0.0219	0.1876	0.0822	1.2000e-003		0.0151	0.0151		0.0151	0.0151	0.0000	647.1482	647.1482	0.0285	9.0100e-003	650.5447
Mobile	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742
Waste						0.0000	0.0000		0.0000	0.0000	33.3230	0.0000	33.3230	1.9693	0.0000	82.5563
Water						0.0000	0.0000		0.0000	0.0000	7.9487	124.8552	132.8039	0.8235	0.0207	159.5703
Total	**2.8271**	**5.1044**	**17.7298**	**0.0585**	**5.1112**	**0.0847**	**5.1959**	**1.3698**	**0.0817**	**1.4514**	**41.2717**	**6,099.9655**	**6,141.2372**	**3.0719**	**0.0312**	**6,227.3306**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**29.82**	**2.19**	**11.64**	**9.36**	**0.00**	**80.56**	**6.33**	**0.00**	**81.13**	**19.47**	**63.63**	**1.81**	**2.92**	**40.45**	**9.38**	**3.68**

3.0 Construction Detail

Construction Phase

Bouquet Canyon Project_MHDT & Tier 4 Mitigation - Los Angeles-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	9/15/2020	5	77	
2	Grading - Earthwork	Grading	9/16/2020	6/3/2021	5	187	
3	Trenching	Trenching	6/4/2021	12/6/2021	5	132	
4	Paving	Paving	12/7/2021	6/8/2022	5	132	
5	Building Construction	Building Construction	6/9/2022	6/20/2025	5	792	
6	Architectural Coating	Architectural Coating	12/15/2023	6/20/2025	5	396	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.24

Residential Indoor: 839,970; Residential Outdoor: 279,990; Non-Residential Indoor: 16,119; Non-Residential Outdoor: 5,373; Striped Parking Area: 631 (Architectural Coating – sqft)

OffRoad Equipment

Bouquet Canyon Project_MHDT & Tier 4 Mitigation - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Earthwork	Excavators	2	8.00	158	0.38
Grading - Earthwork	Graders	1	8.00	187	0.41
Grading - Earthwork	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Earthwork	Scrapers	2	8.00	367	0.48
Grading - Earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Pavers	0		130	0.42
Trenching	Paving Equipment	0		132	0.36
Trenching	Rollers	0		80	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Trenchers	2	8.00	78	0.50
Paving	Air Compressors	0		78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Grading - Earthwork	8	20.00	0.00	258,708.00	14.70	6.90	0.50	LD_Mix	HDT_Mix	MHDT
Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Building Construction	9	303.00	63.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Architectural Coating	1	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6956	0.0000	0.6956	0.3823	0.0000	0.3823	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1569	1.6331	0.8283	1.4600e-003		0.0846	0.0846		0.0778	0.0778	0.0000	128.7081	128.7081	0.0416	0.0000	129.7488
Total	**0.1569**	**1.6331**	**0.8283**	**1.4600e-003**	**0.6956**	**0.0846**	**0.7802**	**0.3823**	**0.0778**	**0.4602**	**0.0000**	**128.7081**	**128.7081**	**0.0416**	**0.0000**	**129.7488**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.5800e-003	0.0285	8.0000e-005	7.5900e-003	6.0000e-005	7.6600e-003	2.0200e-003	6.0000e-005	2.0800e-003	0.0000	7.0780	7.0780	2.2000e-004	0.0000	7.0835
Total	**3.2000e-003**	**2.5800e-003**	**0.0285**	**8.0000e-005**	**7.5900e-003**	**6.0000e-005**	**7.6600e-003**	**2.0200e-003**	**6.0000e-005**	**2.0800e-003**	**0.0000**	**7.0780**	**7.0780**	**2.2000e-004**	**0.0000**	**7.0835**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2577	0.0000	0.2577	0.1417	0.0000	0.1417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0179	0.0777	0.8035	1.4600e-003		2.3900e-003	2.3900e-003		2.3900e-003	2.3900e-003	0.0000	128.7080	128.7080	0.0416	0.0000	129.7486
Total	**0.0179**	**0.0777**	**0.8035**	**1.4600e-003**	**0.2577**	**2.3900e-003**	**0.2601**	**0.1417**	**2.3900e-003**	**0.1440**	**0.0000**	**128.7080**	**128.7080**	**0.0416**	**0.0000**	**129.7486**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.5800e-003	0.0285	8.0000e-005	5.8800e-003	6.0000e-005	5.9500e-003	1.6000e-003	6.0000e-005	1.6600e-003	0.0000	7.0780	7.0780	2.2000e-004	0.0000	7.0835
Total	**3.2000e-003**	**2.5800e-003**	**0.0285**	**8.0000e-005**	**5.8800e-003**	**6.0000e-005**	**5.9500e-003**	**1.6000e-003**	**6.0000e-005**	**1.6600e-003**	**0.0000**	**7.0780**	**7.0780**	**2.2000e-004**	**0.0000**	**7.0835**

3.3 Grading - Earthwork - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7138	0.0000	0.7138	0.1897	0.0000	0.1897	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1713	1.9326	1.2304	2.3900e-003		0.0837	0.0837		0.0770	0.0770	0.0000	209.7645	209.7645	0.0678	0.0000	211.4606
Total	**0.1713**	**1.9326**	**1.2304**	**2.3900e-003**	**0.7138**	**0.0837**	**0.7975**	**0.1897**	**0.0770**	**0.2667**	**0.0000**	**209.7645**	**209.7645**	**0.0678**	**0.0000**	**211.4606**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0724	1.3846	0.9749	1.0300e-003	0.0518	3.3400e-003	0.0552	0.0144	3.2000e-003	0.0176	0.0000	95.1856	95.1856	8.6100e-003	0.0000	95.4007
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	2.8700e-003	0.0317	9.0000e-005	8.4400e-003	7.0000e-005	8.5100e-003	2.2400e-003	7.0000e-005	2.3100e-003	0.0000	7.8644	7.8644	2.5000e-004	0.0000	7.8706
Total	**0.0760**	**1.3875**	**1.0066**	**1.1200e-003**	**0.0603**	**3.4100e-003**	**0.0637**	**0.0166**	**3.2700e-003**	**0.0199**	**0.0000**	**103.0500**	**103.0500**	**8.8600e-003**	**0.0000**	**103.2713**

3.3 Grading - Earthwork - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2645	0.0000	0.2645	0.0703	0.0000	0.0703	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.1271	1.2705	2.3900e-003		3.9100e-003	3.9100e-003		3.9100e-003	3.9100e-003	0.0000	209.7643	209.7643	0.0678	0.0000	211.4603
Total	**0.0293**	**0.1271**	**1.2705**	**2.3900e-003**	**0.2645**	**3.9100e-003**	**0.2684**	**0.0703**	**3.9100e-003**	**0.0742**	**0.0000**	**209.7643**	**209.7643**	**0.0678**	**0.0000**	**211.4603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0724	1.3846	0.9749	1.0300e-003	0.0410	3.3400e-003	0.0443	0.0117	3.2000e-003	0.0149	0.0000	95.1856	95.1856	8.6100e-003	0.0000	95.4007
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	2.8700e-003	0.0317	9.0000e-005	6.5400e-003	7.0000e-005	6.6100e-003	1.7700e-003	7.0000e-005	1.8400e-003	0.0000	7.8644	7.8644	2.5000e-004	0.0000	7.8706
Total	**0.0760**	**1.3875**	**1.0066**	**1.1200e-003**	**0.0475**	**3.4100e-003**	**0.0509**	**0.0135**	**3.2700e-003**	**0.0168**	**0.0000**	**103.0500**	**103.0500**	**8.8600e-003**	**0.0000**	**103.2713**

3.3 Grading - Earthwork - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8132	0.0000	0.8132	0.2443	0.0000	0.2443	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2305	2.5520	1.6983	3.4100e-003		0.1092	0.1092		0.1005	0.1005	0.0000	299.7224	299.7224	0.0969	0.0000	302.1458
Total	**0.2305**	**2.5520**	**1.6983**	**3.4100e-003**	**0.8132**	**0.1092**	**0.9224**	**0.2443**	**0.1005**	**0.3447**	**0.0000**	**299.7224**	**299.7224**	**0.0969**	**0.0000**	**302.1458**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0909	1.8584	1.2557	1.4600e-003	0.0561	7.7000e-004	0.0569	0.0162	7.3000e-004	0.0169	0.0000	135.3762	135.3762	0.0112	0.0000	135.6566
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	3.6800e-003	0.0416	1.2000e-004	0.0121	1.0000e-004	0.0122	3.2000e-003	9.0000e-005	3.2900e-003	0.0000	10.8781	10.8781	3.2000e-004	0.0000	10.8861
Total	**0.0956**	**1.8620**	**1.2973**	**1.5800e-003**	**0.0682**	**8.7000e-004**	**0.0690**	**0.0194**	**8.2000e-004**	**0.0202**	**0.0000**	**146.2543**	**146.2543**	**0.0115**	**0.0000**	**146.5427**

3.3 Grading - Earthwork - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3013	0.0000	0.3013	0.0905	0.0000	0.0905	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0419	0.1815	1.8150	3.4100e-003		5.5800e-003	5.5800e-003		5.5800e-003	5.5800e-003	0.0000	299.7220	299.7220	0.0969	0.0000	302.1455
Total	**0.0419**	**0.1815**	**1.8150**	**3.4100e-003**	**0.3013**	**5.5800e-003**	**0.3069**	**0.0905**	**5.5800e-003**	**0.0961**	**0.0000**	**299.7220**	**299.7220**	**0.0969**	**0.0000**	**302.1455**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0909	1.8584	1.2557	1.4600e-003	0.0453	7.7000e-004	0.0460	0.0135	7.3000e-004	0.0142	0.0000	135.3762	135.3762	0.0112	0.0000	135.6566
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	3.6800e-003	0.0416	1.2000e-004	9.3400e-003	1.0000e-004	9.4400e-003	2.5300e-003	9.0000e-005	2.6300e-003	0.0000	10.8781	10.8781	3.2000e-004	0.0000	10.8861
Total	**0.0956**	**1.8620**	**1.2973**	**1.5800e-003**	**0.0546**	**8.7000e-004**	**0.0555**	**0.0160**	**8.2000e-004**	**0.0169**	**0.0000**	**146.2543**	**146.2543**	**0.0115**	**0.0000**	**146.5427**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0752	0.7138	0.6424	8.6000e-004		0.0484	0.0484		0.0445	0.0445	0.0000	75.1807	75.1807	0.0243	0.0000	75.7886
Total	**0.0752**	**0.7138**	**0.6424**	**8.6000e-004**		**0.0484**	**0.0484**		**0.0445**	**0.0445**	**0.0000**	**75.1807**	**75.1807**	**0.0243**	**0.0000**	**75.7886**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.2100e-003	0.0250	7.0000e-005	7.2300e-003	6.0000e-005	7.2900e-003	1.9200e-003	5.0000e-005	1.9800e-003	0.0000	6.5269	6.5269	1.9000e-004	0.0000	6.5317
Total	**2.8400e-003**	**2.2100e-003**	**0.0250**	**7.0000e-005**	**7.2300e-003**	**6.0000e-005**	**7.2900e-003**	**1.9200e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**6.5269**	**6.5269**	**1.9000e-004**	**0.0000**	**6.5317**

3.4 Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.0453	0.6451	8.6000e-004		1.3900e-003	1.3900e-003		1.3900e-003	1.3900e-003	0.0000	75.1807	75.1807	0.0243	0.0000	75.7885
Total	**0.0105**	**0.0453**	**0.6451**	**8.6000e-004**		**1.3900e-003**	**1.3900e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**75.1807**	**75.1807**	**0.0243**	**0.0000**	**75.7885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.2100e-003	0.0250	7.0000e-005	5.6000e-003	6.0000e-005	5.6600e-003	1.5200e-003	5.0000e-005	1.5800e-003	0.0000	6.5269	6.5269	1.9000e-004	0.0000	6.5317
Total	**2.8400e-003**	**2.2100e-003**	**0.0250**	**7.0000e-005**	**5.6000e-003**	**6.0000e-005**	**5.6600e-003**	**1.5200e-003**	**5.0000e-005**	**1.5800e-003**	**0.0000**	**6.5269**	**6.5269**	**1.9000e-004**	**0.0000**	**6.5317**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0119	0.1227	0.1392	2.2000e-004		6.4400e-003	6.4400e-003		5.9200e-003	5.9200e-003	0.0000	19.0223	19.0223	6.1500e-003	0.0000	19.1761
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0120**	**0.1227**	**0.1392**	**2.2000e-004**		**6.4400e-003**	**6.4400e-003**		**5.9200e-003**	**5.9200e-003**	**0.0000**	**19.0223**	**19.0223**	**6.1500e-003**	**0.0000**	**19.1761**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.8000e-004	5.3900e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.1000e-004	1.0000e-005	4.3000e-004	0.0000	1.4092	1.4092	4.0000e-005	0.0000	1.4102
Total	**6.1000e-004**	**4.8000e-004**	**5.3900e-003**	**2.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5700e-003**	**4.1000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4092**	**1.4092**	**4.0000e-005**	**0.0000**	**1.4102**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6600e-003	0.0116	0.1643	2.2000e-004		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	19.0223	19.0223	6.1500e-003	0.0000	19.1761
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7100e-003**	**0.0116**	**0.1643**	**2.2000e-004**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**	**0.0000**	**19.0223**	**19.0223**	**6.1500e-003**	**0.0000**	**19.1761**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.8000e-004	5.3900e-003	2.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.4092	1.4092	4.0000e-005	0.0000	1.4102
Total	**6.1000e-004**	**4.8000e-004**	**5.3900e-003**	**2.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.4092**	**1.4092**	**4.0000e-005**	**0.0000**	**1.4102**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0623	0.6286	0.8238	1.2900e-003		0.0321	0.0321		0.0295	0.0295	0.0000	113.1557	113.1557	0.0366	0.0000	114.0706
Paving	2.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0626**	**0.6286**	**0.8238**	**1.2900e-003**		**0.0321**	**0.0321**		**0.0295**	**0.0295**	**0.0000**	**113.1557**	**113.1557**	**0.0366**	**0.0000**	**114.0706**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4200e-003	2.5600e-003	0.0295	9.0000e-005	9.2900e-003	7.0000e-005	9.3600e-003	2.4700e-003	7.0000e-005	2.5300e-003	0.0000	8.0865	8.0865	2.2000e-004	0.0000	8.0920
Total	**3.4200e-003**	**2.5600e-003**	**0.0295**	**9.0000e-005**	**9.2900e-003**	**7.0000e-005**	**9.3600e-003**	**2.4700e-003**	**7.0000e-005**	**2.5300e-003**	**0.0000**	**8.0865**	**8.0865**	**2.2000e-004**	**0.0000**	**8.0920**

3.5 Paving - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0159	0.0687	0.9772	1.2900e-003		2.1100e-003	2.1100e-003		2.1100e-003	2.1100e-003	0.0000	113.1556	113.1556	0.0366	0.0000	114.0705
Paving	2.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0161**	**0.0687**	**0.9772**	**1.2900e-003**		**2.1100e-003**	**2.1100e-003**		**2.1100e-003**	**2.1100e-003**	**0.0000**	**113.1556**	**113.1556**	**0.0366**	**0.0000**	**114.0705**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4200e-003	2.5600e-003	0.0295	9.0000e-005	7.1900e-003	7.0000e-005	7.2700e-003	1.9500e-003	7.0000e-005	2.0200e-003	0.0000	8.0865	8.0865	2.2000e-004	0.0000	8.0920
Total	**3.4200e-003**	**2.5600e-003**	**0.0295**	**9.0000e-005**	**7.1900e-003**	**7.0000e-005**	**7.2700e-003**	**1.9500e-003**	**7.0000e-005**	**2.0200e-003**	**0.0000**	**8.0865**	**8.0865**	**2.2000e-004**	**0.0000**	**8.0920**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1254	1.1478	1.2027	1.9800e-003		0.0595	0.0595		0.0559	0.0559	0.0000	170.3181	170.3181	0.0408	0.0000	171.3381
Total	**0.1254**	**1.1478**	**1.2027**	**1.9800e-003**		**0.0595**	**0.0595**		**0.0559**	**0.0559**	**0.0000**	**170.3181**	**170.3181**	**0.0408**	**0.0000**	**171.3381**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.4342	0.1172	1.1700e-003	0.0292	8.1000e-004	0.0300	8.4200e-003	7.8000e-004	9.2000e-003	0.0000	113.1377	113.1377	6.7600e-003	0.0000	113.3067
Worker	0.0899	0.0674	0.7760	2.3500e-003	0.2440	1.9500e-003	0.2460	0.0648	1.7900e-003	0.0666	0.0000	212.4950	212.4950	5.8500e-003	0.0000	212.6413
Total	**0.1034**	**0.5015**	**0.8932**	**3.5200e-003**	**0.2732**	**2.7600e-003**	**0.2760**	**0.0732**	**2.5700e-003**	**0.0758**	**0.0000**	**325.6328**	**325.6328**	**0.0126**	**0.0000**	**325.9480**

3.6 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0435	0.3585	1.2554	1.9800e-003		0.0132	0.0132		0.0132	0.0132	0.0000	170.3179	170.3179	0.0408	0.0000	171.3379
Total	**0.0435**	**0.3585**	**1.2554**	**1.9800e-003**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**170.3179**	**170.3179**	**0.0408**	**0.0000**	**171.3379**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.4342	0.1172	1.1700e-003	0.0238	8.1000e-004	0.0246	7.1000e-003	7.8000e-004	7.8800e-003	0.0000	113.1377	113.1377	6.7600e-003	0.0000	113.3067
Worker	0.0899	0.0674	0.7760	2.3500e-003	0.1890	1.9500e-003	0.1910	0.0513	1.7900e-003	0.0531	0.0000	212.4950	212.4950	5.8500e-003	0.0000	212.6413
Total	**0.1034**	**0.5015**	**0.8932**	**3.5200e-003**	**0.2128**	**2.7600e-003**	**0.2156**	**0.0584**	**2.5700e-003**	**0.0610**	**0.0000**	**325.6328**	**325.6328**	**0.0126**	**0.0000**	**325.9480**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0177	0.5802	0.1860	1.9900e-003	0.0516	6.8000e-004	0.0523	0.0149	6.5000e-004	0.0155	0.0000	193.8429	193.8429	0.0106	0.0000	194.1070
Worker	0.1494	0.1078	1.2621	4.0000e-003	0.4316	3.3500e-003	0.4350	0.1146	3.0800e-003	0.1177	0.0000	362.0884	362.0884	9.3200e-003	0.0000	362.3215
Total	**0.1672**	**0.6880**	**1.4481**	**5.9900e-003**	**0.4832**	**4.0300e-003**	**0.4873**	**0.1295**	**3.7300e-003**	**0.1333**	**0.0000**	**555.9314**	**555.9314**	**0.0199**	**0.0000**	**556.4284**

3.6 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0738	0.6065	2.2195	3.5000e-003		0.0208	0.0208		0.0208	0.0208	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.0738**	**0.6065**	**2.2195**	**3.5000e-003**		**0.0208**	**0.0208**		**0.0208**	**0.0208**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0177	0.5802	0.1860	1.9900e-003	0.0421	6.8000e-004	0.0428	0.0126	6.5000e-004	0.0132	0.0000	193.8429	193.8429	0.0106	0.0000	194.1070
Worker	0.1494	0.1078	1.2621	4.0000e-003	0.3344	3.3500e-003	0.3377	0.0908	3.0800e-003	0.0939	0.0000	362.0884	362.0884	9.3200e-003	0.0000	362.3215
Total	**0.1672**	**0.6880**	**1.4481**	**5.9900e-003**	**0.3765**	**4.0300e-003**	**0.3805**	**0.1033**	**3.7300e-003**	**0.1071**	**0.0000**	**555.9314**	**555.9314**	**0.0199**	**0.0000**	**556.4284**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.5824	0.1817	2.0000e-003	0.0520	6.7000e-004	0.0527	0.0150	6.4000e-004	0.0157	0.0000	194.5558	194.5558	0.0105	0.0000	194.8180
Worker	0.1426	0.0991	1.1843	3.9100e-003	0.4350	3.3300e-003	0.4383	0.1155	3.0600e-003	0.1186	0.0000	353.5605	353.5605	8.6100e-003	0.0000	353.7757
Total	**0.1601**	**0.6815**	**1.3660**	**5.9100e-003**	**0.4870**	**4.0000e-003**	**0.4909**	**0.1305**	**3.7000e-003**	**0.1342**	**0.0000**	**548.1163**	**548.1163**	**0.0191**	**0.0000**	**548.5937**

3.6 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0717	0.5887	2.2359	3.5300e-003		0.0187	0.0187		0.0187	0.0187	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.0717**	**0.5887**	**2.2359**	**3.5300e-003**		**0.0187**	**0.0187**		**0.0187**	**0.0187**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.5824	0.1817	2.0000e-003	0.0424	6.7000e-004	0.0431	0.0127	6.4000e-004	0.0133	0.0000	194.5558	194.5558	0.0105	0.0000	194.8180
Worker	0.1426	0.0991	1.1843	3.9100e-003	0.3369	3.3300e-003	0.3403	0.0915	3.0600e-003	0.0945	0.0000	353.5605	353.5605	8.6100e-003	0.0000	353.7757
Total	**0.1601**	**0.6815**	**1.3660**	**5.9100e-003**	**0.3794**	**4.0000e-003**	**0.3834**	**0.1041**	**3.7000e-003**	**0.1078**	**0.0000**	**548.1163**	**548.1163**	**0.0191**	**0.0000**	**548.5937**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0841	0.7669	0.9892	1.6600e-003		0.0324	0.0324		0.0305	0.0305	0.0000	142.6305	142.6305	0.0335	0.0000	143.4687
Total	**0.0841**	**0.7669**	**0.9892**	**1.6600e-003**		**0.0324**	**0.0324**		**0.0305**	**0.0305**	**0.0000**	**142.6305**	**142.6305**	**0.0335**	**0.0000**	**143.4687**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.9700e-003	0.2711	0.0831	9.3000e-004	0.0244	3.1000e-004	0.0247	7.0400e-003	3.0000e-004	7.3400e-003	0.0000	90.8396	90.8396	4.8500e-003	0.0000	90.9609
Worker	0.0637	0.0426	0.5160	1.7600e-003	0.2042	1.5300e-003	0.2057	0.0542	1.4100e-003	0.0556	0.0000	159.5574	159.5574	3.6800e-003	0.0000	159.6495
Total	**0.0716**	**0.3136**	**0.5991**	**2.6900e-003**	**0.2286**	**1.8400e-003**	**0.2305**	**0.0613**	**1.7100e-003**	**0.0630**	**0.0000**	**250.3970**	**250.3970**	**8.5300e-003**	**0.0000**	**250.6104**

3.6 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0325	0.2672	1.0494	1.6600e-003		7.8300e-003	7.8300e-003		7.8300e-003	7.8300e-003	0.0000	142.6303	142.6303	0.0335	0.0000	143.4685
Total	**0.0325**	**0.2672**	**1.0494**	**1.6600e-003**		**7.8300e-003**	**7.8300e-003**		**7.8300e-003**	**7.8300e-003**	**0.0000**	**142.6303**	**142.6303**	**0.0335**	**0.0000**	**143.4685**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.9700e-003	0.2711	0.0831	9.3000e-004	0.0199	3.1000e-004	0.0202	5.9400e-003	3.0000e-004	6.2400e-003	0.0000	90.8396	90.8396	4.8500e-003	0.0000	90.9609
Worker	0.0637	0.0426	0.5160	1.7600e-003	0.1582	1.5300e-003	0.1597	0.0429	1.4100e-003	0.0444	0.0000	159.5574	159.5574	3.6800e-003	0.0000	159.6495
Total	**0.0716**	**0.3136**	**0.5991**	**2.6900e-003**	**0.1781**	**1.8400e-003**	**0.1799**	**0.0489**	**1.7100e-003**	**0.0506**	**0.0000**	**250.3970**	**250.3970**	**8.5300e-003**	**0.0000**	**250.6104**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	7.1700e-003	9.9600e-003	2.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	1.4043	1.4043	8.0000e-005	0.0000	1.4064
Total	**0.0385**	**7.1700e-003**	**9.9600e-003**	**2.0000e-005**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.4043**	**1.4043**	**8.0000e-005**	**0.0000**	**1.4064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	9.2000e-004	0.0108	3.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	3.0000e-005	1.0000e-003	0.0000	3.0841	3.0841	8.0000e-005	0.0000	3.0860
Total	**1.2700e-003**	**9.2000e-004**	**0.0108**	**3.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**3.0000e-005**	**1.0000e-003**	**0.0000**	**3.0841**	**3.0841**	**8.0000e-005**	**0.0000**	**3.0860**

3.7 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	7.1700e-003	9.9600e-003	2.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	1.4043	1.4043	8.0000e-005	0.0000	1.4064
Total	**0.0385**	**7.1700e-003**	**9.9600e-003**	**2.0000e-005**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.4043**	**1.4043**	**8.0000e-005**	**0.0000**	**1.4064**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	9.2000e-004	0.0108	3.0000e-005	2.8500e-003	3.0000e-005	2.8800e-003	7.7000e-004	3.0000e-005	8.0000e-004	0.0000	3.0841	3.0841	8.0000e-005	0.0000	3.0860
Total	**1.2700e-003**	**9.2000e-004**	**0.0108**	**3.0000e-005**	**2.8500e-003**	**3.0000e-005**	**2.8800e-003**	**7.7000e-004**	**3.0000e-005**	**8.0000e-004**	**0.0000**	**3.0841**	**3.0841**	**8.0000e-005**	**0.0000**	**3.0860**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8925					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.9162**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0287	0.0199	0.2384	7.9000e-004	0.0876	6.7000e-004	0.0882	0.0233	6.2000e-004	0.0239	0.0000	71.1788	71.1788	1.7300e-003	0.0000	71.2222
Total	**0.0287**	**0.0199**	**0.2384**	**7.9000e-004**	**0.0876**	**6.7000e-004**	**0.0882**	**0.0233**	**6.2000e-004**	**0.0239**	**0.0000**	**71.1788**	**71.1788**	**1.7300e-003**	**0.0000**	**71.2222**

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8925					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.9162**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0287	0.0199	0.2384	7.9000e-004	0.0678	6.7000e-004	0.0685	0.0184	6.2000e-004	0.0190	0.0000	71.1788	71.1788	1.7300e-003	0.0000	71.2222
Total	**0.0287**	**0.0199**	**0.2384**	**7.9000e-004**	**0.0678**	**6.7000e-004**	**0.0685**	**0.0184**	**6.2000e-004**	**0.0190**	**0.0000**	**71.1788**	**71.1788**	**1.7300e-003**	**0.0000**	**71.2222**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0705	0.1113	1.8000e-004		3.1700e-003	3.1700e-003		3.1700e-003	3.1700e-003	0.0000	15.7025	15.7025	8.6000e-004	0.0000	15.7239
Total	**0.4295**	**0.0705**	**0.1113**	**1.8000e-004**		**3.1700e-003**	**3.1700e-003**		**3.1700e-003**	**3.1700e-003**	**0.0000**	**15.7025**	**15.7025**	**8.6000e-004**	**0.0000**	**15.7239**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0128	8.5700e-003	0.1039	3.6000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112	0.0000	32.1221	32.1221	7.4000e-004	0.0000	32.1407
Total	**0.0128**	**8.5700e-003**	**0.1039**	**3.6000e-004**	**0.0411**	**3.1000e-004**	**0.0414**	**0.0109**	**2.8000e-004**	**0.0112**	**0.0000**	**32.1221**	**32.1221**	**7.4000e-004**	**0.0000**	**32.1407**

3.7 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0705	0.1113	1.8000e-004		3.1700e-003	3.1700e-003		3.1700e-003	3.1700e-003	0.0000	15.7025	15.7025	8.6000e-004	0.0000	15.7239
Total	**0.4295**	**0.0705**	**0.1113**	**1.8000e-004**		**3.1700e-003**	**3.1700e-003**		**3.1700e-003**	**3.1700e-003**	**0.0000**	**15.7025**	**15.7025**	**8.6000e-004**	**0.0000**	**15.7239**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0128	8.5700e-003	0.1039	3.6000e-004	0.0318	3.1000e-004	0.0322	8.6400e-003	2.8000e-004	8.9300e-003	0.0000	32.1221	32.1221	7.4000e-004	0.0000	32.1407
Total	**0.0128**	**8.5700e-003**	**0.1039**	**3.6000e-004**	**0.0318**	**3.1000e-004**	**0.0322**	**8.6400e-003**	**2.8000e-004**	**8.9300e-003**	**0.0000**	**32.1221**	**32.1221**	**7.4000e-004**	**0.0000**	**32.1407**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742
Unmitigated	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	840.06	840.06	840.06	2,870,613	2,870,613
City Park	0.00	0.00	0.00		
Condo/Townhouse High Rise	2,444.79	2,444.79	2444.79	8,354,219	8,354,219
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	656.97	656.97	656.97	2,244,966	2,244,966
Total	3,941.82	3,941.82	3,941.82	13,469,798	13,469,798

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
City Park	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Condo/Townhouse High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Health Club	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Recreational Swimming Pool	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Single Family Housing	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Bouquet Canyon Project_MHDT & Tier 4 Mitigation - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	430.3221	430.3221	0.0243	5.0300e-003	432.4301
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	446.1429	446.1429	0.0252	5.2200e-003	448.3284
NaturalGas Mitigated	0.0219	0.1876	0.0822	1.2000e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.8260	216.8260	4.1600e-003	3.9800e-003	218.1145
NaturalGas Unmitigated	0.0321	0.2750	0.1210	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	317.8500	317.8500	6.0900e-003	5.8300e-003	319.7388

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.0449e+006	5.6300e-003	0.0482	0.0205	3.1000e-004		3.8900e-003	3.8900e-003		3.8900e-003	3.8900e-003	0.0000	55.7599	55.7599	1.0700e-003	1.0200e-003	56.0913
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	3.04093e+006	0.0164	0.1401	0.0596	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.2756	162.2756	3.1100e-003	2.9800e-003	163.2400
Health Club	194503	1.0500e-003	9.5300e-003	8.0100e-003	6.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	10.3794	10.3794	2.0000e-004	1.9000e-004	10.4411
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.67595e+006	9.0400e-003	0.0772	0.0329	4.9000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	89.4351	89.4351	1.7100e-003	1.6400e-003	89.9665
Total		**0.0321**	**0.2750**	**0.1210**	**1.7500e-003**		**0.0222**	**0.0222**		**0.0222**	**0.0222**	**0.0000**	**317.8500**	**317.8500**	**6.0900e-003**	**5.8300e-003**	**319.7388**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	755018	4.0700e-003	0.0348	0.0148	2.2000e-004		2.8100e-003	2.8100e-003		2.8100e-003	2.8100e-003	0.0000	40.2906	40.2906	7.7000e-004	7.4000e-004	40.5301
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	2.1973e+006	0.0119	0.1013	0.0431	6.5000e-004		8.1900e-003	8.1900e-003		8.1900e-003	8.1900e-003	0.0000	117.2561	117.2561	2.2500e-003	2.1500e-003	117.9529
Health Club	116761	6.3000e-004	5.7200e-003	4.8100e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.2308	6.2308	1.2000e-004	1.1000e-004	6.2678
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	994091	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	53.0485	53.0485	1.0200e-003	9.7000e-004	53.3637
Total		**0.0219**	**0.1876**	**0.0822**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**	**0.0000**	**216.8260**	**216.8260**	**4.1600e-003**	**3.9700e-003**	**218.1145**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	315757	73.4745	4.1500e-003	8.6000e-004	73.8344
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	977877	227.5451	0.0129	2.6600e-003	228.6598
Health Club	119281	27.7558	1.5700e-003	3.2000e-004	27.8917
Parking Lot	3682.7	0.8569	5.0000e-005	1.0000e-005	0.8611
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	500706	116.5107	6.5900e-003	1.3600e-003	117.0814
Total		**446.1429**	**0.0252**	**5.2100e-003**	**448.3284**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	305314	71.0443	4.0200e-003	8.3000e-004	71.3923
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	947483	220.4727	0.0125	2.5800e-003	221.5527
Health Club	106466	24.7739	1.4000e-003	2.9000e-004	24.8952
Parking Lot	3682.7	0.8569	5.0000e-005	1.0000e-005	0.8611
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	486368	113.1744	6.4000e-003	1.3200e-003	113.7288
Total		**430.3222**	**0.0243**	**5.0300e-003**	**432.4301**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7956	0.1117	3.8004	6.4000e-004		0.0265	0.0265		0.0265	0.0265	0.0000	85.2675	85.2675	7.4200e-003	1.4500e-003	85.8852
Unmitigated	2.9865	0.1384	6.0979	6.1300e-003		0.3704	0.3704		0.3704	0.3704	38.8762	80.8730	119.7492	0.1218	2.6400e-003	123.5815

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5395					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.1988	0.0949	2.3266	5.9400e-003		0.3495	0.3495		0.3495	0.3495	38.8762	74.7067	113.5828	0.1159	2.6400e-003	117.2676
Landscaping	0.1133	0.0434	3.7713	2.0000e-004		0.0209	0.0209		0.0209	0.0209	0.0000	6.1663	6.1663	5.9100e-003	0.0000	6.3140
Total	**2.9865**	**0.1384**	**6.0979**	**6.1400e-003**		**0.3704**	**0.3704**		**0.3704**	**0.3704**	**38.8762**	**80.8730**	**119.7491**	**0.1219**	**2.6400e-003**	**123.5815**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5395					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.9900e-003	0.0683	0.0291	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.0000	79.1012	79.1012	1.5200e-003	1.4500e-003	79.5712
Landscaping	0.1133	0.0434	3.7713	2.0000e-004		0.0209	0.0209		0.0209	0.0209	0.0000	6.1663	6.1663	5.9100e-003	0.0000	6.3140
Total	**1.7956**	**0.1117**	**3.8003**	**6.4000e-004**		**0.0264**	**0.0264**		**0.0264**	**0.0264**	**0.0000**	**85.2675**	**85.2675**	**7.4300e-003**	**1.4500e-003**	**85.8852**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	132.8039	0.8235	0.0207	159.5703
Unmitigated	132.8039	0.8235	0.0207	159.5703

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.08201 / 3.20388	25.2930	0.1669	4.1900e-003	30.7141
City Park	0 / 3.15743	8.1626	4.6000e-004	1.0000e-004	8.2026
Condo/Townhouse High Rise	14.79 / 9.32411	73.6091	0.4858	0.0122	89.3860
Health Club	0.635789 / 0.389677	3.1355	0.0209	5.2000e-004	3.8136
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.572506 / 0.350891	2.8234	0.0188	4.7000e-004	3.4340
Single Family Housing	3.9744 / 2.5056	19.7804	0.1306	3.2700e-003	24.0200
Total		**132.8039**	**0.8235**	**0.0207**	**159.5703**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.08201 / 3.20388	25.2930	0.1669	4.1900e-003	30.7141
City Park	0 / 3.15743	8.1626	4.6000e-004	1.0000e-004	8.2026
Condo/Townhouse High Rise	14.79 / 9.32411	73.6091	0.4858	0.0122	89.3860
Health Club	0.635789 / 0.389677	3.1355	0.0209	5.2000e-004	3.8136
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.572506 / 0.350891	2.8234	0.0188	4.7000e-004	3.4340
Single Family Housing	3.9744 / 2.5056	19.7804	0.1306	3.2700e-003	24.0200
Total		**132.8039**	**0.8235**	**0.0207**	**159.5703**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	33.3230	1.9693	0.0000	82.5563
Unmitigated	66.6460	3.9387	0.0000	165.1126

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	35.88	7.2833	0.4304	0.0000	18.0441
City Park	0.23	0.0467	2.7600e-003	0.0000	0.1157
Condo/Townhouse High Rise	104.42	21.1963	1.2527	0.0000	52.5130
Health Club	61.27	12.4373	0.7350	0.0000	30.8128
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	55.18	11.2010	0.6620	0.0000	27.7501
Single Family Housing	71.34	14.4814	0.8558	0.0000	35.8770
Total		**66.6460**	**3.9387**	**0.0000**	**165.1126**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	17.94	3.6417	0.2152	0.0000	9.0221
City Park	0.115	0.0233	1.3800e-003	0.0000	0.0578
Condo/Townhouse High Rise	52.21	10.5982	0.6263	0.0000	26.2565
Health Club	30.635	6.2186	0.3675	0.0000	15.4064
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	27.59	5.6005	0.3310	0.0000	13.8751
Single Family Housing	35.67	7.2407	0.4279	0.0000	17.9385
Total		**33.3230**	**1.9693**	**0.0000**	**82.5563**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bouquet Canyon Project_MHDT & Tier 4 Mitigation

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	10.52	1000sqft	0.24	10,522.00	0
City Park	2.65	Acre	2.65	115,434.00	0
Health Club	10.75	1000sqft	0.25	10,746.00	0
Recreational Swimming Pool	9.68	1000sqft	0.22	9,676.00	0
Apartments Mid Rise	78.00	Dwelling Unit	2.05	78,000.00	223
Condo/Townhouse High Rise	227.00	Dwelling Unit	3.55	227,000.00	649
Single Family Housing	61.00	Dwelling Unit	19.81	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	513	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor Source: Southern California Edison, 2018 Sustainability Report, dated May 2019.

Land Use - Per project description.

Construction Phase - Based on applicant assumptions.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Anticipated trenching equipment.

Trips and VMT - Earthwork would be balanced on-site.

Grading -

Vehicle Trips - Per traffic study.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD standards and regulations. Tier 4 engines per mitigation measure.

Energy Mitigation - % Improvement based on efficiency of 2019 Title 24 Standards compared to 2016 Title 24 Standards.

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	45.00	187.00
tblConstructionPhase	NumDays	35.00	132.00
tblConstructionPhase	NumDays	440.00	792.00
tblConstructionPhase	NumDays	35.00	396.00
tblGrading	MaterialExported	0.00	2,069,664.00
tblGrading	MaterialImported	0.00	2,069,664.00
tblLandUse	LandUseSquareFeet	10,520.00	10,522.00
tblLandUse	LandUseSquareFeet	10,750.00	10,746.00

tblLandUse	LandUseSquareFeet	9,680.00	9,676.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	513
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblVehicleTrips	ST_TR	6.39	10.77
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	4.31	10.77
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.77
tblVehicleTrips	SU_TR	5.86	10.77
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	3.43	10.77
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	10.77
tblVehicleTrips	WD_TR	6.65	10.77
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	4.18	10.77
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.3691	85.9633	56.6410	0.0912	18.2675	2.2616	20.4666	9.9840	2.0837	12.0072	0.0000	8,990.3965	8,990.3965	2.1863	0.0000	9,045.0533
2021	5.8803	80.0321	53.1461	0.0910	12.4380	2.0009	14.4389	4.3334	1.8412	6.1746	0.0000	8,971.6406	8,971.6406	2.1650	0.0000	9,025.7652
2022	3.1026	22.2389	29.1359	0.0764	3.7902	0.8465	4.6366	1.0143	0.7960	1.8104	0.0000	7,600.0930	7,600.0930	0.8023	0.0000	7,620.1516
2023	10.0835	20.9779	31.8781	0.0841	4.4720	0.8066	5.2786	1.1952	0.7626	1.9578	0.0000	8,352.1492	8,352.1492	0.8115	0.0000	8,372.4369
2024	9.8941	19.8586	30.9141	0.0828	4.4720	0.7098	5.1818	1.1952	0.6707	1.8659	0.0000	8,226.4853	8,226.4853	0.7976	0.0000	8,246.4243
2025	9.7112	18.7060	29.9698	0.0813	4.4720	0.6139	5.0859	1.1952	0.5800	1.7752	0.0000	8,073.4713	8,073.4713	0.7844	0.0000	8,093.0822
Maximum	**10.0835**	**85.9633**	**56.6410**	**0.0912**	**18.2675**	**2.2616**	**20.4666**	**9.9840**	**2.0837**	**12.0072**	**0.0000**	**8,990.3965**	**8,990.3965**	**2.1863**	**0.0000**	**9,045.0533**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.6805	39.0658	57.6819	0.0912	6.8493	0.1892	6.9130	3.7215	0.1852	3.7852	0.0000	8,990.3964	8,990.3964	2.1863	0.0000	9,045.0533
2021	2.4507	36.9323	55.2668	0.0910	5.1497	0.1171	5.2668	1.7687	0.1163	1.8850	0.0000	8,971.6406	8,971.6406	2.1650	0.0000	9,025.7652
2022	1.9884	11.5011	29.8523	0.0764	2.9499	0.2164	3.1663	0.8081	0.2138	1.0219	0.0000	7,600.0930	7,600.0930	0.8023	0.0000	7,620.1516
2023	9.0787	11.2583	32.7073	0.0841	3.4776	0.2672	3.7448	0.9511	0.2645	1.2156	0.0000	8,352.1492	8,352.1492	0.8115	0.0000	8,372.4369
2024	8.9696	10.9091	31.8150	0.0828	3.4777	0.2392	3.7169	0.9511	0.2366	1.1877	0.0000	8,226.4853	8,226.4853	0.7976	0.0000	8,246.4243
2025	8.8723	10.5814	30.9485	0.0813	3.4777	0.2137	3.6914	0.9511	0.2111	1.1622	0.0000	8,073.4713	8,073.4713	0.7844	0.0000	8,093.0822
Maximum	**9.0787**	**39.0658**	**57.6819**	**0.0912**	**6.8493**	**0.2672**	**6.9130**	**3.7215**	**0.2645**	**3.7852**	**0.0000**	**8,990.3964**	**8,990.3964**	**2.1863**	**0.0000**	**9,045.0533**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**24.42**	**51.47**	**-2.84**	**0.00**	**47.02**	**82.83**	**51.90**	**51.62**	**81.77**	**59.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086
Energy	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424
Mobile	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052
Total	**112.0209**	**34.8339**	**296.2064**	**0.8083**	**28.6363**	**28.4840**	**57.1203**	**7.6619**	**28.4672**	**36.1291**	**3,428.2921**	**41,434.3510**	**44,862.6431**	**11.7953**	**0.2679**	**45,237.3562**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Energy	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
Mobile	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052
Total	**16.6992**	**32.2249**	**112.1891**	**0.3653**	**28.6363**	**0.9290**	**29.5653**	**7.6619**	**0.9122**	**8.5741**	**0.0000**	**41,211.6893**	**41,211.6893**	**1.6935**	**0.1519**	**41,299.2916**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**85.09**	**7.49**	**62.12**	**54.81**	**0.00**	**96.74**	**48.24**	**0.00**	**96.80**	**76.27**	**100.00**	**0.54**	**8.14**	**85.64**	**43.30**	**8.71**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	9/15/2020	5	77	
2	Grading - Earthwork	Grading	9/16/2020	6/3/2021	5	187	
3	Trenching	Trenching	6/4/2021	12/6/2021	5	132	
4	Paving	Paving	12/7/2021	6/8/2022	5	132	
5	Building Construction	Building Construction	6/9/2022	6/20/2025	5	792	
6	Architectural Coating	Architectural Coating	12/15/2023	6/20/2025	5	396	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.24

Residential Indoor: 839,970; Residential Outdoor: 279,990; Non-Residential Indoor: 16,119; Non-Residential Outdoor: 5,373; Striped Parking Area: 631 (Architectural Coating – sqft)

OffRoad Equipment

Bouquet Canyon Project_MHDT & Tier 4 Mitigation - Los Angeles-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Earthwork	Excavators	2	8.00	158	0.38
Grading - Earthwork	Graders	1	8.00	187	0.41
Grading - Earthwork	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Earthwork	Scrapers	2	8.00	367	0.48
Grading - Earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Pavers	0		130	0.42
Trenching	Paving Equipment	0		132	0.36
Trenching	Rollers	0		80	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Trenchers	2	8.00	78	0.50
Paving	Air Compressors	0		78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Grading - Earthwork	8	20.00	0.00	258,708.00	14.70	6.90	0.50	LD_Mix	HDT_Mix	MHDT
Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Building Construction	9	303.00	63.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Architectural Coating	1	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**6.6936**	**0.0621**	**6.7556**	**3.6793**	**0.0621**	**3.7414**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.1557	1.6800e-003	0.1574	0.0422	1.5500e-003	0.0438		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.1557**	**1.6800e-003**	**0.1574**	**0.0422**	**1.5500e-003**	**0.0438**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

3.3 Grading - Earthwork - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**11.1766**	**2.1739**	**13.3505**	**3.9756**	**2.0000**	**5.9756**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8270	35.7003	23.8070	0.0269	1.3710	0.0858	1.4568	0.3803	0.0820	0.4623		2,749.3086	2,749.3086	0.2364		2,755.2196
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0655	0.8757	2.3600e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		235.2226	235.2226	7.4200e-003		235.4080
Total	**1.9190**	**35.7658**	**24.6827**	**0.0292**	**1.5946**	**0.0877**	**1.6822**	**0.4396**	**0.0837**	**0.5233**		**2,984.5312**	**2,984.5312**	**0.2439**		**2,990.6276**

3.3 Grading - Earthwork - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**0.7616**	**3.3000**	**32.9991**	**0.0620**	**4.1409**	**0.1015**	**4.2425**	**1.4730**	**0.1015**	**1.5745**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8270	35.7003	23.8070	0.0269	1.0823	0.0858	1.1681	0.3094	0.0820	0.3914		2,749.3086	2,749.3086	0.2364		2,755.2196
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0655	0.8757	2.3600e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486		235.2226	235.2226	7.4200e-003		235.4080
Total	**1.9190**	**35.7658**	**24.6827**	**0.0292**	**1.2553**	**0.0877**	**1.3430**	**0.3563**	**0.0837**	**0.4400**		**2,984.5312**	**2,984.5312**	**0.2439**		**2,990.6276**

3.3 Grading - Earthwork - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**11.1766**	**1.9853**	**13.1620**	**3.9756**	**1.8265**	**5.8021**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6034	33.5733	21.4621	0.0267	1.0379	0.0138	1.0516	0.2985	0.0131	0.3116		2,736.8432	2,736.8432	0.2155		2,742.2300
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0857	0.0589	0.8056	2.2900e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		227.7540	227.7540	6.7100e-003		227.9217
Total	**1.6891**	**33.6323**	**22.2677**	**0.0290**	**1.2614**	**0.0156**	**1.2770**	**0.3578**	**0.0147**	**0.3725**		**2,964.5972**	**2,964.5972**	**0.2222**		**2,970.1518**

3.3 Grading - Earthwork - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**0.7616**	**3.3000**	**32.9991**	**0.0620**	**4.1409**	**0.1015**	**4.2425**	**1.4730**	**0.1015**	**1.5745**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6034	33.5733	21.4621	0.0267	0.8357	0.0138	0.8495	0.2489	0.0131	0.2620		2,736.8432	2,736.8432	0.2155		2,742.2300
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0857	0.0589	0.8056	2.2900e-003	0.1730	1.8100e-003	0.1748	0.0469	1.6600e-003	0.0486		227.7540	227.7540	6.7100e-003		227.9217
Total	**1.6891**	**33.6323**	**22.2677**	**0.0290**	**1.0088**	**0.0156**	**1.0243**	**0.2958**	**0.0147**	**0.3105**		**2,964.5972**	**2,964.5972**	**0.2222**		**2,970.1518**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749		1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**		**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**		**113.8770**	**113.8770**	**3.3600e-003**		**113.9609**

3.4 Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1585	0.6868	9.7742	0.0130		0.0211	0.0211		0.0211	0.0211	0.0000	1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**0.1585**	**0.6868**	**9.7742**	**0.0130**		**0.0211**	**0.0211**		**0.0211**	**0.0211**	**0.0000**	**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.0865	9.0000e-004	0.0874	0.0234	8.3000e-004	0.0243		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.0865**	**9.0000e-004**	**0.0874**	**0.0234**	**8.3000e-004**	**0.0243**		**113.8770**	**113.8770**	**3.3600e-003**		**113.9609**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2603**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2852**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1298	1.3500e-003	0.1311	0.0352	1.2500e-003	0.0364		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1298**	**1.3500e-003**	**0.1311**	**0.0352**	**1.2500e-003**	**0.0364**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1076**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.5 Paving - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2852**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1298	1.3100e-003	0.1311	0.0352	1.2100e-003	0.0364		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1298**	**1.3100e-003**	**0.1311**	**0.0352**	**1.2100e-003**	**0.0364**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1797	5.8168	1.5129	0.0161	0.4033	0.0109	0.4143	0.1161	0.0105	0.1266		1,716.6611	1,716.6611	0.0985		1,719.1239
Worker	1.2166	0.8064	11.2596	0.0334	3.3868	0.0265	3.4133	0.8982	0.0244	0.9226		3,329.0983	3,329.0983	0.0919		3,331.3954
Total	**1.3963**	**6.6232**	**12.7725**	**0.0495**	**3.7902**	**0.0374**	**3.8276**	**1.0143**	**0.0349**	**1.0492**		**5,045.7594**	**5,045.7594**	**0.1904**		**5,050.5194**

3.6 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5920	4.8779	17.0798	0.0269		0.1789	0.1789		0.1789	0.1789	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**0.5920**	**4.8779**	**17.0798**	**0.0269**		**0.1789**	**0.1789**		**0.1789**	**0.1789**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1797	5.8168	1.5129	0.0161	0.3286	0.0109	0.3396	0.0978	0.0105	0.1083		1,716.6611	1,716.6611	0.0985		1,719.1239
Worker	1.2166	0.8064	11.2596	0.0334	2.6213	0.0265	2.6478	0.7103	0.0244	0.7347		3,329.0983	3,329.0983	0.0919		3,331.3954
Total	**1.3963**	**6.6232**	**12.7725**	**0.0495**	**2.9499**	**0.0374**	**2.9874**	**0.8081**	**0.0349**	**0.8430**		**5,045.7594**	**5,045.7594**	**0.1904**		**5,050.5194**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.4136	1.3664	0.0155	0.4034	5.1000e-003	0.4085	0.1161	4.8700e-003	0.1210		1,662.6168	1,662.6168	0.0873		1,664.7993
Worker	1.1425	0.7296	10.3691	0.0322	3.3868	0.0258	3.4126	0.8982	0.0237	0.9219		3,207.2004	3,207.2004	0.0829		3,209.2716
Total	**1.2758**	**5.1432**	**11.7354**	**0.0477**	**3.7902**	**0.0309**	**3.8210**	**1.0143**	**0.0286**	**1.0429**		**4,869.8172**	**4,869.8172**	**0.1702**		**4,874.0708**

3.6 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5679	4.6652	17.0733	0.0269		0.1603	0.1603		0.1603	0.1603	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.5679**	**4.6652**	**17.0733**	**0.0269**		**0.1603**	**0.1603**		**0.1603**	**0.1603**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.4136	1.3664	0.0155	0.3286	5.1000e-003	0.3337	0.0978	4.8700e-003	0.1027		1,662.6168	1,662.6168	0.0873		1,664.7993
Worker	1.1425	0.7296	10.3691	0.0322	2.6213	0.0258	2.6470	0.7103	0.0237	0.7340		3,207.2004	3,207.2004	0.0829		3,209.2716
Total	**1.2758**	**5.1432**	**11.7354**	**0.0477**	**2.9499**	**0.0309**	**2.9808**	**0.8081**	**0.0286**	**0.8367**		**4,869.8172**	**4,869.8172**	**0.1702**		**4,874.0708**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1301	4.3967	1.3248	0.0154	0.4034	5.0300e-003	0.4084	0.1161	4.8100e-003	0.1210		1,655.8695	1,655.8695	0.0861		1,658.0209
Worker	1.0808	0.6654	9.6664	0.0312	3.3868	0.0254	3.4122	0.8982	0.0234	0.9216		3,107.8051	3,107.8051	0.0760		3,109.7053
Total	**1.2109**	**5.0621**	**10.9911**	**0.0466**	**3.7902**	**0.0304**	**3.8206**	**1.0143**	**0.0282**	**1.0425**		**4,763.6747**	**4,763.6747**	**0.1621**		**4,767.7261**

3.6 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5471	4.4942	17.0678	0.0270		0.1428	0.1428		0.1428	0.1428	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.5471**	**4.4942**	**17.0678**	**0.0270**		**0.1428**	**0.1428**		**0.1428**	**0.1428**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1301	4.3967	1.3248	0.0154	0.3287	5.0300e-003	0.3337	0.0978	4.8100e-003	0.1026		1,655.8695	1,655.8695	0.0861		1,658.0209
Worker	1.0808	0.6654	9.6664	0.0312	2.6213	0.0254	2.6467	0.7103	0.0234	0.7337		3,107.8051	3,107.8051	0.0760		3,109.7053
Total	**1.2109**	**5.0621**	**10.9911**	**0.0466**	**2.9499**	**0.0304**	**2.9804**	**0.8081**	**0.0282**	**0.8363**		**4,763.6747**	**4,763.6747**	**0.1621**		**4,767.7261**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1269	4.3594	1.2907	0.0154	0.4034	4.9600e-003	0.4083	0.1161	4.7400e-003	0.1209		1,646.7456	1,646.7456	0.0849		1,648.8667
Worker	1.0262	0.6088	8.9779	0.0300	3.3868	0.0249	3.4117	0.8982	0.0229	0.9211		2,987.3830	2,987.3830	0.0693		2,989.1163
Total	**1.1531**	**4.9682**	**10.2686**	**0.0453**	**3.7902**	**0.0298**	**3.8200**	**1.0143**	**0.0276**	**1.0420**		**4,634.1285**	**4,634.1285**	**0.1542**		**4,637.9830**

3.6 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5285	4.3451	17.0634	0.0270		0.1274	0.1274		0.1274	0.1274	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.5285**	**4.3451**	**17.0634**	**0.0270**		**0.1274**	**0.1274**		**0.1274**	**0.1274**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1269	4.3594	1.2907	0.0154	0.3287	4.9600e-003	0.3336	0.0978	4.7400e-003	0.1025		1,646.7456	1,646.7456	0.0849		1,648.8667
Worker	1.0262	0.6088	8.9779	0.0300	2.6213	0.0249	2.6461	0.7103	0.0229	0.7332		2,987.3830	2,987.3830	0.0693		2,989.1163
Total	**1.1531**	**4.9682**	**10.2686**	**0.0453**	**2.9499**	**0.0298**	**2.9798**	**0.8081**	**0.0276**	**0.8357**		**4,634.1285**	**4,634.1285**	**0.1542**		**4,637.9830**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2300	0.1469	2.0875	6.4800e-003	0.6818	5.1900e-003	0.6870	0.1808	4.7700e-003	0.1856		645.6740	645.6740	0.0167		646.0910
Total	**0.2300**	**0.1469**	**2.0875**	**6.4800e-003**	**0.6818**	**5.1900e-003**	**0.6870**	**0.1808**	**4.7700e-003**	**0.1856**		**645.6740**	**645.6740**	**0.0167**		**646.0910**

3.7 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2300	0.1469	2.0875	6.4800e-003	0.5277	5.1900e-003	0.5329	0.1430	4.7700e-003	0.1478		645.6740	645.6740	0.0167		646.0910
Total	**0.2300**	**0.1469**	**2.0875**	**6.4800e-003**	**0.5277**	**5.1900e-003**	**0.5329**	**0.1430**	**4.7700e-003**	**0.1478**		**645.6740**	**645.6740**	**0.0167**		**646.0910**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2176	0.1340	1.9460	6.2800e-003	0.6818	5.1100e-003	0.6870	0.1808	4.7100e-003	0.1855		625.6637	625.6637	0.0153		626.0463
Total	**0.2176**	**0.1340**	**1.9460**	**6.2800e-003**	**0.6818**	**5.1100e-003**	**0.6870**	**0.1808**	**4.7100e-003**	**0.1855**		**625.6637**	**625.6637**	**0.0153**		**626.0463**

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2176	0.1340	1.9460	6.2800e-003	0.5277	5.1100e-003	0.5328	0.1430	4.7100e-003	0.1477		625.6637	625.6637	0.0153		626.0463
Total	**0.2176**	**0.1340**	**1.9460**	**6.2800e-003**	**0.5277**	**5.1100e-003**	**0.5328**	**0.1430**	**4.7100e-003**	**0.1477**		**625.6637**	**625.6637**	**0.0153**		**626.0463**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2066	0.1226	1.8074	6.0300e-003	0.6818	5.0000e-003	0.6868	0.1808	4.6100e-003	0.1854		601.4203	601.4203	0.0140		601.7693
Total	**0.2066**	**0.1226**	**1.8074**	**6.0300e-003**	**0.6818**	**5.0000e-003**	**0.6868**	**0.1808**	**4.6100e-003**	**0.1854**		**601.4203**	**601.4203**	**0.0140**		**601.7693**

3.7 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2066	0.1226	1.8074	6.0300e-003	0.5277	5.0000e-003	0.5327	0.1430	4.6100e-003	0.1476		601.4203	601.4203	0.0140		601.7693
Total	**0.2066**	**0.1226**	**1.8074**	**6.0300e-003**	**0.5277**	**5.0000e-003**	**0.5327**	**0.1430**	**4.6100e-003**	**0.1476**		**601.4203**	**601.4203**	**0.0140**		**601.7693**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052
Unmitigated	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	840.06	840.06	840.06	2,870,613	2,870,613
City Park	0.00	0.00	0.00		
Condo/Townhouse High Rise	2,444.79	2,444.79	2444.79	8,354,219	8,354,219
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	656.97	656.97	656.97	2,244,966	2,244,966
Total	3,941.82	3,941.82	3,941.82	13,469,798	13,469,798

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
City Park	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Condo/Townhouse High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Health Club	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Recreational Swimming Pool	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Single Family Housing	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Bouquet Canyon Project_MHDT & Tier 4 Mitigation - Los Angeles-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
NaturalGas Unmitigated	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2862.74	0.0309	0.2638	0.1123	1.6800e-003		0.0213	0.0213		0.0213	0.0213		336.7933	336.7933	6.4600e-003	6.1700e-003	338.7947
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	8331.32	0.0899	0.7678	0.3267	4.9000e-003		0.0621	0.0621		0.0621	0.0621		980.1549	980.1549	0.0188	0.0180	985.9795
Health Club	532.884	5.7500e-003	0.0522	0.0439	3.1000e-004		3.9700e-003	3.9700e-003		3.9700e-003	3.9700e-003		62.6922	62.6922	1.2000e-003	1.1500e-003	63.0648
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4591.64	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.1934	540.1934	0.0104	9.9000e-003	543.4035
Total		**0.1760**	**1.5070**	**0.6629**	**9.5900e-003**		**0.1216**	**0.1216**		**0.1216**	**0.1216**		**1,919.8338**	**1,919.8338**	**0.0368**	**0.0352**	**1,931.2424**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.06854	0.0223	0.1906	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.3580	243.3580	4.6600e-003	4.4600e-003	244.8041
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	6.01999	0.0649	0.5548	0.2361	3.5400e-003		0.0449	0.0449		0.0449	0.0449		708.2341	708.2341	0.0136	0.0130	712.4428
Health Club	0.319892	3.4500e-003	0.0314	0.0263	1.9000e-004		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003		37.6344	37.6344	7.2000e-004	6.9000e-004	37.8580
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.72354	0.0294	0.2510	0.1068	1.6000e-003		0.0203	0.0203		0.0203	0.0203		320.4162	320.4162	6.1400e-003	5.8700e-003	322.3203
Total		**0.1201**	**1.0278**	**0.4504**	**6.5500e-003**		**0.0829**	**0.0829**		**0.0829**	**0.0829**		**1,309.6427**	**1,309.6427**	**0.0251**	**0.0240**	**1,317.4252**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Unmitigated	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	95.9052	7.5939	186.1300	0.4748		27.9581	27.9581		27.9581	27.9581	3,428.2921	6,588.0000	10,016.2921	10.2238	0.2327	10,341.2289
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**105.9859**	**7.9414**	**216.3003**	**0.4764**		**28.1255**	**28.1255**		**28.1255**	**28.1255**	**3,428.2921**	**6,642.3775**	**10,070.6696**	**10.2759**	**0.2327**	**10,396.9086**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6394	5.4642	2.3252	0.0349		0.4418	0.4418		0.4418	0.4418	0.0000	6,975.5294	6,975.5294	0.1337	0.1279	7,016.9815
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**10.7202**	**5.8117**	**32.4955**	**0.0365**		**0.6092**	**0.6092**		**0.6092**	**0.6092**	**0.0000**	**7,029.9069**	**7,029.9069**	**0.1858**	**0.1279**	**7,072.6611**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bouquet Canyon Project_MHDT & Tier 4 Mitigation

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	10.52	1000sqft	0.24	10,522.00	0
City Park	2.65	Acre	2.65	115,434.00	0
Health Club	10.75	1000sqft	0.25	10,746.00	0
Recreational Swimming Pool	9.68	1000sqft	0.22	9,676.00	0
Apartments Mid Rise	78.00	Dwelling Unit	2.05	78,000.00	223
Condo/Townhouse High Rise	227.00	Dwelling Unit	3.55	227,000.00	649
Single Family Housing	61.00	Dwelling Unit	19.81	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	513	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor Source: Southern California Edison, 2018 Sustainability Report, dated May 2019.

Land Use - Per project description.

Construction Phase - Based on applicant assumptions.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Anticipated trenching equipment.

Trips and VMT - Earthwork would be balanced on-site.

Grading -

Vehicle Trips - Per traffic study.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD standards and regulations. Tier 4 engines per mitigation measure.

Energy Mitigation - % Improvement based on efficiency of 2019 Title 24 Standards compared to 2016 Title 24 Standards.

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	396.00
tblConstructionPhase	NumDays	440.00	792.00
tblConstructionPhase	NumDays	45.00	187.00
tblConstructionPhase	NumDays	35.00	132.00
tblConstructionPhase	NumDays	20.00	77.00
tblGrading	MaterialExported	0.00	2,069,664.00
tblGrading	MaterialImported	0.00	2,069,664.00
tblLandUse	LandUseSquareFeet	10,520.00	10,522.00
tblLandUse	LandUseSquareFeet	10,750.00	10,746.00

tblLandUse	LandUseSquareFeet	9,680.00	9,676.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	513
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblTripsAndVMT	HaulingVehicleClass	HHDT	MHDT
tblVehicleTrips	ST_TR	6.39	10.77
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	4.31	10.77
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.77
tblVehicleTrips	SU_TR	5.86	10.77
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	3.43	10.77
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	10.77
tblVehicleTrips	WD_TR	6.65	10.77
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	4.18	10.77
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.4724	86.0918	58.8088	0.0906	18.2675	2.2641	20.4666	9.9840	2.0861	12.0072	0.0000	8,919.4502	8,919.4502	2.2016	0.0000	8,974.4905
2021	5.9738	80.1712	55.0865	0.0904	12.4380	2.0012	14.4393	4.3334	1.8416	6.1749	0.0000	8,902.0247	8,902.0247	2.1795	0.0000	8,956.5117
2022	3.2519	22.3091	28.3148	0.0740	3.7902	0.8468	4.6370	1.0143	0.7964	1.8107	0.0000	7,358.3918	7,358.3918	0.8032	0.0000	7,378.4711
2023	10.2537	21.0511	30.8913	0.0814	4.4720	0.8069	5.2789	1.1952	0.7629	1.9580	0.0000	8,082.1911	8,082.1911	0.8104	0.0000	8,102.4513
2024	10.0597	19.9244	29.9845	0.0802	4.4720	0.7100	5.1820	1.1952	0.6709	1.8661	0.0000	7,963.8698	7,963.8698	0.7967	0.0000	7,983.7875
2025	9.8729	18.7646	29.1025	0.0788	4.4720	0.6141	5.0861	1.1952	0.5802	1.7754	0.0000	7,819.9175	7,819.9175	0.7839	0.0000	7,839.5142
Maximum	**10.2537**	**86.0918**	**58.8088**	**0.0906**	**18.2675**	**2.2641**	**20.4666**	**9.9840**	**2.0861**	**12.0072**	**0.0000**	**8,919.4502**	**8,919.4502**	**2.2016**	**0.0000**	**8,974.4905**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.7838	39.1943	59.8497	0.0906	6.8493	0.1918	6.9130	3.7215	0.1877	3.7852	0.0000	8,919.4502	8,919.4502	2.2016	0.0000	8,974.4905
2021	2.5442	37.0714	57.2072	0.0904	5.1497	0.1175	5.2671	1.7687	0.1166	1.8853	0.0000	8,902.0247	8,902.0247	2.1795	0.0000	8,956.5117
2022	2.1377	11.5714	29.0312	0.0740	2.9499	0.2167	3.1666	0.8081	0.2141	1.0222	0.0000	7,358.3918	7,358.3918	0.8032	0.0000	7,378.4711
2023	9.2488	11.3315	31.7205	0.0814	3.4776	0.2674	3.7451	0.9511	0.2647	1.2158	0.0000	8,082.1911	8,082.1911	0.8104	0.0000	8,102.4513
2024	9.1352	10.9749	30.8854	0.0802	3.4777	0.2394	3.7171	0.9511	0.2368	1.1879	0.0000	7,963.8698	7,963.8698	0.7967	0.0000	7,983.7875
2025	9.0340	10.6400	30.0812	0.0788	3.4777	0.2139	3.6916	0.9511	0.2113	1.1624	0.0000	7,819.9175	7,819.9175	0.7839	0.0000	7,839.5142
Maximum	**9.2488**	**39.1943**	**59.8497**	**0.0906**	**6.8493**	**0.2674**	**6.9130**	**3.7215**	**0.2647**	**3.7852**	**0.0000**	**8,919.4502**	**8,919.4502**	**2.2016**	**0.0000**	**8,974.4905**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**23.97**	**51.36**	**-2.84**	**0.00**	**47.02**	**82.79**	**51.90**	**51.62**	**81.73**	**59.91**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086
Energy	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424
Mobile	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795
Total	**111.8367**	**35.4079**	**291.8993**	**0.7929**	**28.6363**	**28.4849**	**57.1211**	**7.6619**	**28.4680**	**36.1299**	**3,428.2921**	**39,881.5280**	**43,309.8201**	**11.7912**	**0.2679**	**43,684.4305**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Energy	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
Mobile	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795
Total	**16.5150**	**32.7990**	**107.8819**	**0.3499**	**28.6363**	**0.9299**	**29.5662**	**7.6619**	**0.9130**	**8.5749**	**0.0000**	**39,658.8663**	**39,658.8663**	**1.6894**	**0.1519**	**39,746.3659**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**85.23**	**7.37**	**63.04**	**55.87**	**0.00**	**96.74**	**48.24**	**0.00**	**96.79**	**76.27**	**100.00**	**0.56**	**8.43**	**85.67**	**43.30**	**9.01**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	9/15/2020	5	77	
2	Grading - Earthwork	Grading	9/16/2020	6/3/2021	5	187	
3	Trenching	Trenching	6/4/2021	12/6/2021	5	132	
4	Paving	Paving	12/7/2021	6/8/2022	5	132	
5	Building Construction	Building Construction	6/9/2022	6/20/2025	5	792	
6	Architectural Coating	Architectural Coating	12/15/2023	6/20/2025	5	396	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.24

Residential Indoor: 839,970; Residential Outdoor: 279,990; Non-Residential Indoor: 16,119; Non-Residential Outdoor: 5,373; Striped Parking Area: 631 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Earthwork	Excavators	2	8.00	158	0.38
Grading - Earthwork	Graders	1	8.00	187	0.41
Grading - Earthwork	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Earthwork	Scrapers	2	8.00	367	0.48
Grading - Earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Pavers	0		130	0.42
Trenching	Paving Equipment	0		132	0.36
Trenching	Rollers	0		80	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Trenchers	2	8.00	78	0.50
Paving	Air Compressors	0		78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Grading - Earthwork	8	20.00	0.00	258,708.00	14.70	6.90	0.50	LD_Mix	HDT_Mix	MHDT
Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Building Construction	9	303.00	63.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT
Architectural Coating	1	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	MHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**6.6936**	**0.0621**	**6.7556**	**3.6793**	**0.0621**	**3.7414**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.1557	1.6800e-003	0.1574	0.0422	1.5500e-003	0.0438		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.1557**	**1.6800e-003**	**0.1574**	**0.0422**	**1.5500e-003**	**0.0438**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

3.3 Grading - Earthwork - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**11.1766**	**2.1739**	**13.3505**	**3.9756**	**2.0000**	**5.9756**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9201	35.8218	26.0485	0.0264	1.3710	0.0884	1.4594	0.3803	0.0844	0.4647		2,692.1009	2,692.1009	0.2522		2,698.4062
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1022	0.0725	0.8020	2.2200e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		221.4841	221.4841	6.9800e-003		221.6586
Total	**2.0223**	**35.8943**	**26.8506**	**0.0286**	**1.5946**	**0.0902**	**1.6848**	**0.4396**	**0.0861**	**0.5257**		**2,913.5850**	**2,913.5850**	**0.2592**		**2,920.0648**

3.3 Grading - Earthwork - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**0.7616**	**3.3000**	**32.9991**	**0.0620**	**4.1409**	**0.1015**	**4.2425**	**1.4730**	**0.1015**	**1.5745**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9201	35.8218	26.0485	0.0264	1.0823	0.0884	1.1706	0.3094	0.0844	0.3939		2,692.1009	2,692.1009	0.2522		2,698.4062
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1022	0.0725	0.8020	2.2200e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486		221.4841	221.4841	6.9800e-003		221.6586
Total	**2.0223**	**35.8943**	**26.8506**	**0.0286**	**1.2553**	**0.0902**	**1.3455**	**0.3563**	**0.0861**	**0.4425**		**2,913.5850**	**2,913.5850**	**0.2592**		**2,920.0648**

3.3 Grading - Earthwork - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**11.1766**	**1.9853**	**13.1620**	**3.9756**	**1.8265**	**5.8021**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6873	33.7061	23.4716	0.0262	1.0379	0.0141	1.0520	0.2985	0.0134	0.3119		2,680.5310	2,680.5310	0.2304		2,686.2903
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0954	0.0652	0.7365	2.1500e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		214.4502	214.4502	6.3100e-003		214.6080
Total	**1.7826**	**33.7713**	**24.2081**	**0.0284**	**1.2614**	**0.0159**	**1.2773**	**0.3578**	**0.0150**	**0.3729**		**2,894.9812**	**2,894.9812**	**0.2367**		**2,900.8982**

3.3 Grading - Earthwork - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**0.7616**	**3.3000**	**32.9991**	**0.0620**	**4.1409**	**0.1015**	**4.2425**	**1.4730**	**0.1015**	**1.5745**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6873	33.7061	23.4716	0.0262	0.8357	0.0141	0.8498	0.2489	0.0134	0.2623		2,680.5310	2,680.5310	0.2304		2,686.2903
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0954	0.0652	0.7365	2.1500e-003	0.1730	1.8100e-003	0.1748	0.0469	1.6600e-003	0.0486		214.4502	214.4502	6.3100e-003		214.6080
Total	**1.7826**	**33.7713**	**24.2081**	**0.0284**	**1.0088**	**0.0159**	**1.0247**	**0.2958**	**0.0150**	**0.3108**		**2,894.9812**	**2,894.9812**	**0.2367**		**2,900.8982**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749		1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**		**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**		**107.2251**	**107.2251**	**3.1600e-003**		**107.3040**

3.4 Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1585	0.6868	9.7742	0.0130		0.0211	0.0211		0.0211	0.0211	0.0000	1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**0.1585**	**0.6868**	**9.7742**	**0.0130**		**0.0211**	**0.0211**		**0.0211**	**0.0211**	**0.0000**	**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.0865	9.0000e-004	0.0874	0.0234	8.3000e-004	0.0243		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.0865**	**9.0000e-004**	**0.0874**	**0.0234**	**8.3000e-004**	**0.0243**		**107.2251**	**107.2251**	**3.1600e-003**		**107.3040**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2603**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2852**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1298	1.3500e-003	0.1311	0.0352	1.2500e-003	0.0364		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1298**	**1.3500e-003**	**0.1311**	**0.0352**	**1.2500e-003**	**0.0364**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1076**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.5 Paving - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2852**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1298	1.3100e-003	0.1311	0.0352	1.2100e-003	0.0364		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1298**	**1.3100e-003**	**0.1311**	**0.0352**	**1.2100e-003**	**0.0364**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1887	5.8010	1.6744	0.0156	0.4033	0.0113	0.4146	0.1161	0.0108	0.1269		1,669.3128	1,669.3128	0.1049		1,671.9356
Worker	1.3570	0.8925	10.2770	0.0315	3.3868	0.0265	3.4133	0.8982	0.0244	0.9226		3,134.7455	3,134.7455	0.0863		3,136.9033
Total	**1.5457**	**6.6935**	**11.9514**	**0.0471**	**3.7902**	**0.0378**	**3.8280**	**1.0143**	**0.0352**	**1.0496**		**4,804.0582**	**4,804.0582**	**0.1912**		**4,808.8389**

3.6 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5920	4.8779	17.0798	0.0269		0.1789	0.1789		0.1789	0.1789	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**0.5920**	**4.8779**	**17.0798**	**0.0269**		**0.1789**	**0.1789**		**0.1789**	**0.1789**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1887	5.8010	1.6744	0.0156	0.3286	0.0113	0.3399	0.0978	0.0108	0.1086		1,669.3128	1,669.3128	0.1049		1,671.9356
Worker	1.3570	0.8925	10.2770	0.0315	2.6213	0.0265	2.6478	0.7103	0.0244	0.7347		3,134.7455	3,134.7455	0.0863		3,136.9033
Total	**1.5457**	**6.6935**	**11.9514**	**0.0471**	**2.9499**	**0.0378**	**2.9877**	**0.8081**	**0.0352**	**0.8433**		**4,804.0582**	**4,804.0582**	**0.1912**		**4,808.8389**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1402	4.3935	1.4878	0.0151	0.4034	5.3600e-003	0.4087	0.1161	5.1200e-003	0.1213		1,617.4703	1,617.4703	0.0924		1,619.7792
Worker	1.2784	0.8072	9.4465	0.0303	3.3868	0.0258	3.4126	0.8982	0.0237	0.9219		3,020.0633	3,020.0633	0.0777		3,022.0064
Total	**1.4186**	**5.2007**	**10.9344**	**0.0454**	**3.7902**	**0.0311**	**3.8213**	**1.0143**	**0.0288**	**1.0432**		**4,637.5336**	**4,637.5336**	**0.1701**		**4,641.7855**

3.6 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5679	4.6652	17.0733	0.0269		0.1603	0.1603		0.1603	0.1603	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.5679**	**4.6652**	**17.0733**	**0.0269**		**0.1603**	**0.1603**		**0.1603**	**0.1603**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1402	4.3935	1.4878	0.0151	0.3286	5.3600e-003	0.3340	0.0978	5.1200e-003	0.1029		1,617.4703	1,617.4703	0.0924		1,619.7792
Worker	1.2784	0.8072	9.4465	0.0303	2.6213	0.0258	2.6470	0.7103	0.0237	0.7340		3,020.0633	3,020.0633	0.0777		3,022.0064
Total	**1.4186**	**5.2007**	**10.9344**	**0.0454**	**2.9499**	**0.0311**	**2.9810**	**0.8081**	**0.0288**	**0.8369**		**4,637.5336**	**4,637.5336**	**0.1701**		**4,641.7855**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1368	4.3778	1.4427	0.0150	0.4034	5.2700e-003	0.4086	0.1161	5.0400e-003	0.1212		1,611.1971	1,611.1971	0.0910		1,613.4710
Worker	1.2131	0.7359	8.7944	0.0294	3.3868	0.0254	3.4122	0.8982	0.0234	0.9216		2,926.3854	2,926.3854	0.0712		2,928.1658
Total	**1.3499**	**5.1137**	**10.2371**	**0.0444**	**3.7902**	**0.0307**	**3.8208**	**1.0143**	**0.0284**	**1.0427**		**4,537.5825**	**4,537.5825**	**0.1622**		**4,541.6368**

3.6 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5471	4.4942	17.0678	0.0270		0.1428	0.1428		0.1428	0.1428	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.5471**	**4.4942**	**17.0678**	**0.0270**		**0.1428**	**0.1428**		**0.1428**	**0.1428**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1368	4.3778	1.4427	0.0150	0.3287	5.2700e-003	0.3339	0.0978	5.0400e-003	0.1028		1,611.1971	1,611.1971	0.0910		1,613.4710
Worker	1.2131	0.7359	8.7944	0.0294	2.6213	0.0254	2.6467	0.7103	0.0234	0.7337		2,926.3854	2,926.3854	0.0712		2,928.1658
Total	**1.3499**	**5.1137**	**10.2371**	**0.0444**	**2.9499**	**0.0307**	**2.9806**	**0.8081**	**0.0284**	**0.8365**		**4,537.5825**	**4,537.5825**	**0.1622**		**4,541.6368**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.3407	1.4059	0.0149	0.4034	5.1700e-003	0.4085	0.1161	4.9400e-003	0.1211		1,602.5578	1,602.5578	0.0896		1,604.7975
Worker	1.1555	0.6732	8.1601	0.0282	3.3868	0.0249	3.4117	0.8982	0.0229	0.9211		2,813.1030	2,813.1030	0.0649		2,814.7257
Total	**1.2888**	**5.0139**	**9.5659**	**0.0432**	**3.7902**	**0.0300**	**3.8202**	**1.0143**	**0.0278**	**1.0422**		**4,415.6608**	**4,415.6608**	**0.1545**		**4,419.5233**

3.6 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5285	4.3451	17.0634	0.0270		0.1274	0.1274		0.1274	0.1274	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.5285**	**4.3451**	**17.0634**	**0.0270**		**0.1274**	**0.1274**		**0.1274**	**0.1274**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.3407	1.4059	0.0149	0.3287	5.1700e-003	0.3338	0.0978	4.9400e-003	0.1027		1,602.5578	1,602.5578	0.0896		1,604.7975
Worker	1.1555	0.6732	8.1601	0.0282	2.6213	0.0249	2.6461	0.7103	0.0229	0.7332		2,813.1030	2,813.1030	0.0649		2,814.7257
Total	**1.2888**	**5.0139**	**9.5659**	**0.0432**	**2.9499**	**0.0300**	**2.9800**	**0.8081**	**0.0278**	**0.8359**		**4,415.6608**	**4,415.6608**	**0.1545**		**4,419.5233**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2574	0.1625	1.9018	6.1000e-003	0.6818	5.1900e-003	0.6870	0.1808	4.7700e-003	0.1856		607.9996	607.9996	0.0157		608.3907
Total	**0.2574**	**0.1625**	**1.9018**	**6.1000e-003**	**0.6818**	**5.1900e-003**	**0.6870**	**0.1808**	**4.7700e-003**	**0.1856**		**607.9996**	**607.9996**	**0.0157**		**608.3907**

3.7 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2574	0.1625	1.9018	6.1000e-003	0.5277	5.1900e-003	0.5329	0.1430	4.7700e-003	0.1478		607.9996	607.9996	0.0157		608.3907
Total	**0.2574**	**0.1625**	**1.9018**	**6.1000e-003**	**0.5277**	**5.1900e-003**	**0.5329**	**0.1430**	**4.7700e-003**	**0.1478**		**607.9996**	**607.9996**	**0.0157**		**608.3907**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2442	0.1482	1.7705	5.9100e-003	0.6818	5.1100e-003	0.6870	0.1808	4.7100e-003	0.1855		589.1403	589.1403	0.0143		589.4987
Total	**0.2442**	**0.1482**	**1.7705**	**5.9100e-003**	**0.6818**	**5.1100e-003**	**0.6870**	**0.1808**	**4.7100e-003**	**0.1855**		**589.1403**	**589.1403**	**0.0143**		**589.4987**

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2442	0.1482	1.7705	5.9100e-003	0.5277	5.1100e-003	0.5328	0.1430	4.7100e-003	0.1477		589.1403	589.1403	0.0143		589.4987
Total	**0.2442**	**0.1482**	**1.7705**	**5.9100e-003**	**0.5277**	**5.1100e-003**	**0.5328**	**0.1430**	**4.7100e-003**	**0.1477**		**589.1403**	**589.1403**	**0.0143**		**589.4987**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2326	0.1355	1.6428	5.6800e-003	0.6818	5.0000e-003	0.6868	0.1808	4.6100e-003	0.1854		566.3343	566.3343	0.0131		566.6610
Total	**0.2326**	**0.1355**	**1.6428**	**5.6800e-003**	**0.6818**	**5.0000e-003**	**0.6868**	**0.1808**	**4.6100e-003**	**0.1854**		**566.3343**	**566.3343**	**0.0131**		**566.6610**

3.7 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2326	0.1355	1.6428	5.6800e-003	0.5277	5.0000e-003	0.5327	0.1430	4.6100e-003	0.1476		566.3343	566.3343	0.0131		566.6610
Total	**0.2326**	**0.1355**	**1.6428**	**5.6800e-003**	**0.5277**	**5.0000e-003**	**0.5327**	**0.1430**	**4.6100e-003**	**0.1476**		**566.3343**	**566.3343**	**0.0131**		**566.6610**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795
Unmitigated	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	840.06	840.06	840.06	2,870,613	2,870,613
City Park	0.00	0.00	0.00		
Condo/Townhouse High Rise	2,444.79	2,444.79	2444.79	8,354,219	8,354,219
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	656.97	656.97	656.97	2,244,966	2,244,966
Total	3,941.82	3,941.82	3,941.82	13,469,798	13,469,798

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
City Park	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Condo/Townhouse High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Health Club	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Recreational Swimming Pool	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Single Family Housing	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Bouquet Canyon Project_MHDT & Tier 4 Mitigation - Los Angeles-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
NaturalGas Unmitigated	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2862.74	0.0309	0.2638	0.1123	1.6800e-003		0.0213	0.0213		0.0213	0.0213		336.7933	336.7933	6.4600e-003	6.1700e-003	338.7947
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	8331.32	0.0899	0.7678	0.3267	4.9000e-003		0.0621	0.0621		0.0621	0.0621		980.1549	980.1549	0.0188	0.0180	985.9795
Health Club	532.884	5.7500e-003	0.0522	0.0439	3.1000e-004		3.9700e-003	3.9700e-003		3.9700e-003	3.9700e-003		62.6922	62.6922	1.2000e-003	1.1500e-003	63.0648
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4591.64	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.1934	540.1934	0.0104	9.9000e-003	543.4035
Total		**0.1760**	**1.5070**	**0.6629**	**9.5900e-003**		**0.1216**	**0.1216**		**0.1216**	**0.1216**		**1,919.8338**	**1,919.8338**	**0.0368**	**0.0352**	**1,931.2424**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.06854	0.0223	0.1906	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.3580	243.3580	4.6600e-003	4.4600e-003	244.8041
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	6.01999	0.0649	0.5548	0.2361	3.5400e-003		0.0449	0.0449		0.0449	0.0449		708.2341	708.2341	0.0136	0.0130	712.4428
Health Club	0.319892	3.4500e-003	0.0314	0.0263	1.9000e-004		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003		37.6344	37.6344	7.2000e-004	6.9000e-004	37.8580
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.72354	0.0294	0.2510	0.1068	1.6000e-003		0.0203	0.0203		0.0203	0.0203		320.4162	320.4162	6.1400e-003	5.8700e-003	322.3203
Total		**0.1201**	**1.0278**	**0.4504**	**6.5500e-003**		**0.0829**	**0.0829**		**0.0829**	**0.0829**		**1,309.6427**	**1,309.6427**	**0.0251**	**0.0240**	**1,317.4252**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Unmitigated	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	95.9052	7.5939	186.1300	0.4748		27.9581	27.9581		27.9581	27.9581	3,428.2921	6,588.0000	10,016.2921	10.2238	0.2327	10,341.2289
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**105.9859**	**7.9414**	**216.3003**	**0.4764**		**28.1255**	**28.1255**		**28.1255**	**28.1255**	**3,428.2921**	**6,642.3775**	**10,070.6696**	**10.2759**	**0.2327**	**10,396.9086**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6394	5.4642	2.3252	0.0349		0.4418	0.4418		0.4418	0.4418	0.0000	6,975.5294	6,975.5294	0.1337	0.1279	7,016.9815
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**10.7202**	**5.8117**	**32.4955**	**0.0365**		**0.6092**	**0.6092**		**0.6092**	**0.6092**	**0.0000**	**7,029.9069**	**7,029.9069**	**0.1858**	**0.1279**	**7,072.6611**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bouquet Canyon Project_Unmitigated

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	10.52	1000sqft	0.24	10,522.00	0
City Park	2.65	Acre	2.65	115,434.00	0
Health Club	10.75	1000sqft	0.25	10,746.00	0
Recreational Swimming Pool	9.68	1000sqft	0.22	9,676.00	0
Apartments Mid Rise	78.00	Dwelling Unit	2.05	78,000.00	223
Condo/Townhouse High Rise	227.00	Dwelling Unit	3.55	227,000.00	649
Single Family Housing	61.00	Dwelling Unit	19.81	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	513	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor Source: Southern California Edison, 2018 Sustainability Report, dated May 2019.

Land Use - Per project description.

Construction Phase - Based on applicant assumptions.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Anticipated trenching equipment.

Trips and VMT - Earthwork would be balanced on-site.

Grading -

Vehicle Trips - Per traffic study.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD standards and regulations.

Energy Mitigation - % Improvement based on efficiency of 2019 Title 24 Standards compared to 2016 Title 24 Standards.

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	45.00	187.00
tblConstructionPhase	NumDays	35.00	132.00
tblConstructionPhase	NumDays	440.00	792.00
tblConstructionPhase	NumDays	35.00	396.00
tblGrading	MaterialExported	0.00	2,069,664.00
tblGrading	MaterialImported	0.00	2,069,664.00
tblLandUse	LandUseSquareFeet	10,520.00	10,522.00
tblLandUse	LandUseSquareFeet	10,750.00	10,746.00
tblLandUse	LandUseSquareFeet	9,680.00	9,676.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	513
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblVehicleTrips	ST_TR	6.39	10.77
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	4.31	10.77
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.77
tblVehicleTrips	SU_TR	5.86	10.77
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	3.43	10.77

tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	10.77
tblVehicleTrips	WD_TR	6.65	10.77
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	4.18	10.77
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.77

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4394	8.8826	2.9349	0.0103	1.4740	0.1722	1.6461	0.5890	0.1585	0.7475	0.0000	970.0881	970.0881	0.1990	0.0000	975.0621
2021	0.4659	10.7281	3.6694	0.0136	0.8855	0.1688	1.0543	0.2636	0.1555	0.4191	0.0000	1,285.6763	1,285.6763	0.2488	0.0000	1,291.8967
2022	0.2948	2.2804	2.9492	6.8700e-003	0.2825	0.0944	0.3769	0.0757	0.0881	0.1638	0.0000	617.1930	617.1930	0.0902	0.0000	619.4488
2023	0.4114	2.5661	3.5805	9.5500e-003	0.4869	0.0954	0.5823	0.1305	0.0897	0.2203	0.0000	861.7659	861.7659	0.0917	0.0000	864.0592
2024	1.2978	2.6222	3.9595	0.0106	0.5745	0.0930	0.6675	0.1538	0.0879	0.2417	0.0000	956.4651	956.4651	0.0945	0.0000	958.8284
2025	0.5981	1.1595	1.8035	4.8900e-003	0.2697	0.0378	0.3075	0.0722	0.0357	0.1079	0.0000	440.8521	440.8521	0.0437	0.0000	441.9436
Maximum	**1.2978**	**10.7281**	**3.9595**	**0.0136**	**1.4740**	**0.1722**	**1.6461**	**0.5890**	**0.1585**	**0.7475**	**0.0000**	**1,285.6763**	**1,285.6763**	**0.2488**	**0.0000**	**1,291.8967**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4394	8.8826	2.9349	0.0103	0.5723	0.1722	0.7444	0.2253	0.1585	0.3839	0.0000	970.0877	970.0877	0.1990	0.0000	975.0617
2021	0.4659	10.7281	3.6694	0.0136	0.3580	0.1688	0.5269	0.1060	0.1555	0.2615	0.0000	1,285.6758	1,285.6758	0.2488	0.0000	1,291.8962
2022	0.2948	2.2804	2.9492	6.8700e-003	0.2200	0.0944	0.3144	0.0604	0.0881	0.1485	0.0000	617.1926	617.1926	0.0902	0.0000	619.4485
2023	0.4114	2.5661	3.5805	9.5500e-003	0.3793	0.0954	0.4747	0.1041	0.0897	0.1938	0.0000	861.7655	861.7655	0.0917	0.0000	864.0588
2024	1.2978	2.6222	3.9595	0.0106	0.4472	0.0930	0.5402	0.1225	0.0879	0.2104	0.0000	956.4647	956.4647	0.0945	0.0000	958.8280
2025	0.5981	1.1595	1.8035	4.8900e-003	0.2099	0.0378	0.2477	0.0575	0.0357	0.0932	0.0000	440.8519	440.8519	0.0437	0.0000	441.9434
Maximum	**1.2978**	**10.7281**	**3.9595**	**0.0136**	**0.5723**	**0.1722**	**0.7444**	**0.2253**	**0.1585**	**0.3839**	**0.0000**	**1,285.6758**	**1,285.6758**	**0.2488**	**0.0000**	**1,291.8962**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**44.96**	**0.00**	**38.54**	**47.39**	**0.00**	**32.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2020**	**9-30-2020**	2.3382	2.3382
2	**10-1-2020**	**12-31-2020**	6.3235	6.3235
3	**1-1-2021**	**3-31-2021**	5.9063	5.9063
4	**4-1-2021**	**6-30-2021**	4.4164	4.4164
5	**7-1-2021**	**9-30-2021**	0.3952	0.3952

6	**10-1-2021**	**12-31-2021**	0.4157	0.4157
7	**1-1-2022**	**3-31-2022**	0.3968	0.3968
8	**4-1-2022**	**6-30-2022**	0.5030	0.5030
9	**7-1-2022**	**9-30-2022**	0.8326	0.8326
10	**10-1-2022**	**12-31-2022**	0.8399	0.8399
11	**1-1-2023**	**3-31-2023**	0.7257	0.7257
12	**4-1-2023**	**6-30-2023**	0.7272	0.7272
13	**7-1-2023**	**9-30-2023**	0.7352	0.7352
14	**10-1-2023**	**12-31-2023**	0.7948	0.7948
15	**1-1-2024**	**3-31-2024**	0.9745	0.9745
16	**4-1-2024**	**6-30-2024**	0.9670	0.9670
17	**7-1-2024**	**9-30-2024**	0.9776	0.9776
18	**10-1-2024**	**12-31-2024**	0.9852	0.9852
19	**1-1-2025**	**3-31-2025**	0.9205	0.9205
20	**4-1-2025**	**6-30-2025**	0.8221	0.8221
		Highest	6.3235	6.3235

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9865	0.1384	6.0979	6.1300e-003		0.3704	0.3704		0.3704	0.3704	38.8762	80.8730	119.7492	0.1218	2.6400e-003	123.5815
Energy	0.0321	0.2750	0.1210	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	763.9929	763.9929	0.0313	0.0111	768.0673
Mobile	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742
Waste						0.0000	0.0000		0.0000	0.0000	66.6460	0.0000	66.6460	3.9387	0.0000	165.1126
Water						0.0000	0.0000		0.0000	0.0000	7.9487	124.8552	132.8039	0.8235	0.0207	159.5703
Total	**4.0281**	**5.2185**	**20.0661**	**0.0645**	**5.1112**	**0.4357**	**5.5469**	**1.3698**	**0.4327**	**1.8024**	**113.4709**	**6,212.4158**	**6,325.8866**	**5.1585**	**0.0344**	**6,465.1059**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7956	0.1117	3.8004	6.4000e-004		0.0265	0.0265		0.0265	0.0265	0.0000	85.2675	85.2675	7.4200e-003	1.4500e-003	85.8852
Energy	0.0219	0.1876	0.0822	1.2000e-003		0.0151	0.0151		0.0151	0.0151	0.0000	647.1482	647.1482	0.0285	9.0100e-003	650.5447
Mobile	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742
Waste						0.0000	0.0000		0.0000	0.0000	33.3230	0.0000	33.3230	1.9693	0.0000	82.5563
Water						0.0000	0.0000		0.0000	0.0000	7.9487	124.8552	132.8039	0.8235	0.0207	159.5703
Total	**2.8271**	**5.1044**	**17.7298**	**0.0585**	**5.1112**	**0.0847**	**5.1959**	**1.3698**	**0.0817**	**1.4514**	**41.2717**	**6,099.9655**	**6,141.2372**	**3.0719**	**0.0312**	**6,227.3306**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**29.82**	**2.19**	**11.64**	**9.36**	**0.00**	**80.56**	**6.33**	**0.00**	**81.13**	**19.47**	**63.63**	**1.81**	**2.92**	**40.45**	**9.38**	**3.68**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	9/15/2020	5	77	
2	Grading - Earthwork	Grading	9/16/2020	6/3/2021	5	187	
3	Trenching	Trenching	6/4/2021	12/6/2021	5	132	
4	Paving	Paving	12/7/2021	6/8/2022	5	132	
5	Building Construction	Building Construction	6/9/2022	6/20/2025	5	792	
6	Architectural Coating	Architectural Coating	12/15/2023	6/20/2025	5	396	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.24

Residential Indoor: 839,970; Residential Outdoor: 279,990; Non-Residential Indoor: 16,119; Non-Residential Outdoor: 5,373; Striped Parking Area: 631 (Architectural Coating – sqft)

OffRoad Equipment

Bouquet Canyon Project_Unmitigated - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Earthwork	Excavators	2	8.00	158	0.38
Grading - Earthwork	Graders	1	8.00	187	0.41
Grading - Earthwork	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Earthwork	Scrapers	2	8.00	367	0.48
Grading - Earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Pavers	0		130	0.42
Trenching	Paving Equipment	0		132	0.36
Trenching	Rollers	0		80	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Trenchers	2	8.00	78	0.50
Paving	Air Compressors	0		78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Earthwork	8	20.00	0.00	258,708.00	14.70	6.90	0.50	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	303.00	63.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6956	0.0000	0.6956	0.3823	0.0000	0.3823	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1569	1.6331	0.8283	1.4600e-003		0.0846	0.0846		0.0778	0.0778	0.0000	128.7081	128.7081	0.0416	0.0000	129.7488
Total	**0.1569**	**1.6331**	**0.8283**	**1.4600e-003**	**0.6956**	**0.0846**	**0.7802**	**0.3823**	**0.0778**	**0.4602**	**0.0000**	**128.7081**	**128.7081**	**0.0416**	**0.0000**	**129.7488**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.5800e-003	0.0285	8.0000e-005	7.5900e-003	6.0000e-005	7.6600e-003	2.0200e-003	6.0000e-005	2.0800e-003	0.0000	7.0780	7.0780	2.2000e-004	0.0000	7.0835
Total	**3.2000e-003**	**2.5800e-003**	**0.0285**	**8.0000e-005**	**7.5900e-003**	**6.0000e-005**	**7.6600e-003**	**2.0200e-003**	**6.0000e-005**	**2.0800e-003**	**0.0000**	**7.0780**	**7.0780**	**2.2000e-004**	**0.0000**	**7.0835**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2577	0.0000	0.2577	0.1417	0.0000	0.1417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1569	1.6331	0.8283	1.4600e-003		0.0846	0.0846		0.0778	0.0778	0.0000	128.7080	128.7080	0.0416	0.0000	129.7486
Total	**0.1569**	**1.6331**	**0.8283**	**1.4600e-003**	**0.2577**	**0.0846**	**0.3423**	**0.1417**	**0.0778**	**0.2195**	**0.0000**	**128.7080**	**128.7080**	**0.0416**	**0.0000**	**129.7486**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.5800e-003	0.0285	8.0000e-005	5.8800e-003	6.0000e-005	5.9500e-003	1.6000e-003	6.0000e-005	1.6600e-003	0.0000	7.0780	7.0780	2.2000e-004	0.0000	7.0835
Total	**3.2000e-003**	**2.5800e-003**	**0.0285**	**8.0000e-005**	**5.8800e-003**	**6.0000e-005**	**5.9500e-003**	**1.6000e-003**	**6.0000e-005**	**1.6600e-003**	**0.0000**	**7.0780**	**7.0780**	**2.2000e-004**	**0.0000**	**7.0835**

3.3 Grading - Earthwork - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7138	0.0000	0.7138	0.1897	0.0000	0.1897	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1713	1.9326	1.2304	2.3900e-003		0.0837	0.0837		0.0770	0.0770	0.0000	209.7645	209.7645	0.0678	0.0000	211.4606
Total	**0.1713**	**1.9326**	**1.2304**	**2.3900e-003**	**0.7138**	**0.0837**	**0.7975**	**0.1897**	**0.0770**	**0.2667**	**0.0000**	**209.7645**	**209.7645**	**0.0678**	**0.0000**	**211.4606**

3.3 Grading - Earthwork - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1043	5.3115	0.8160	6.2900e-003	0.0486	3.7200e-003	0.0523	0.0127	3.5600e-003	0.0163	0.0000	616.6731	616.6731	0.0890	0.0000	618.8986
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	2.8700e-003	0.0317	9.0000e-005	8.4400e-003	7.0000e-005	8.5100e-003	2.2400e-003	7.0000e-005	2.3100e-003	0.0000	7.8644	7.8644	2.5000e-004	0.0000	7.8706
Total	**0.1079**	**5.3143**	**0.8477**	**6.3800e-003**	**0.0570**	**3.7900e-003**	**0.0608**	**0.0150**	**3.6300e-003**	**0.0186**	**0.0000**	**624.5375**	**624.5375**	**0.0893**	**0.0000**	**626.7692**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2645	0.0000	0.2645	0.0703	0.0000	0.0703	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1713	1.9326	1.2304	2.3900e-003		0.0837	0.0837		0.0770	0.0770	0.0000	209.7643	209.7643	0.0678	0.0000	211.4603
Total	**0.1713**	**1.9326**	**1.2304**	**2.3900e-003**	**0.2645**	**0.0837**	**0.3482**	**0.0703**	**0.0770**	**0.1473**	**0.0000**	**209.7643**	**209.7643**	**0.0678**	**0.0000**	**211.4603**

3.3 Grading - Earthwork - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1043	5.3115	0.8160	6.2900e-003	0.0377	3.7200e-003	0.0414	0.0101	3.5600e-003	0.0136	0.0000	616.6731	616.6731	0.0890	0.0000	618.8986
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	2.8700e-003	0.0317	9.0000e-005	6.5400e-003	7.0000e-005	6.6100e-003	1.7700e-003	7.0000e-005	1.8400e-003	0.0000	7.8644	7.8644	2.5000e-004	0.0000	7.8706
Total	**0.1079**	**5.3143**	**0.8477**	**6.3800e-003**	**0.0442**	**3.7900e-003**	**0.0480**	**0.0118**	**3.6300e-003**	**0.0155**	**0.0000**	**624.5375**	**624.5375**	**0.0893**	**0.0000**	**626.7692**

3.3 Grading - Earthwork - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8132	0.0000	0.8132	0.2443	0.0000	0.2443	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2305	2.5520	1.6983	3.4100e-003		0.1092	0.1092		0.1005	0.1005	0.0000	299.7224	299.7224	0.0969	0.0000	302.1458
Total	**0.2305**	**2.5520**	**1.6983**	**3.4100e-003**	**0.8132**	**0.1092**	**0.9224**	**0.2443**	**0.1005**	**0.3447**	**0.0000**	**299.7224**	**299.7224**	**0.0969**	**0.0000**	**302.1458**

3.3 Grading - Earthwork - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1400	7.3331	1.1175	8.9000e-003	0.0515	4.6200e-003	0.0561	0.0138	4.4200e-003	0.0182	0.0000	872.9367	872.9367	0.1209	0.0000	875.9582
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	3.6800e-003	0.0416	1.2000e-004	0.0121	1.0000e-004	0.0122	3.2000e-003	9.0000e-005	3.2900e-003	0.0000	10.8781	10.8781	3.2000e-004	0.0000	10.8861
Total	**0.1448**	**7.3368**	**1.1591**	**9.0200e-003**	**0.0635**	**4.7200e-003**	**0.0683**	**0.0170**	**4.5100e-003**	**0.0215**	**0.0000**	**883.8148**	**883.8148**	**0.1212**	**0.0000**	**886.8443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3013	0.0000	0.3013	0.0905	0.0000	0.0905	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2305	2.5520	1.6983	3.4100e-003		0.1092	0.1092		0.1005	0.1005	0.0000	299.7220	299.7220	0.0969	0.0000	302.1455
Total	**0.2305**	**2.5520**	**1.6983**	**3.4100e-003**	**0.3013**	**0.1092**	**0.4105**	**0.0905**	**0.1005**	**0.1910**	**0.0000**	**299.7220**	**299.7220**	**0.0969**	**0.0000**	**302.1455**

3.3 Grading - Earthwork - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1400	7.3331	1.1175	8.9000e-003	0.0406	4.6200e-003	0.0452	0.0111	4.4200e-003	0.0155	0.0000	872.9367	872.9367	0.1209	0.0000	875.9582
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	3.6800e-003	0.0416	1.2000e-004	9.3400e-003	1.0000e-004	9.4400e-003	2.5300e-003	9.0000e-005	2.6300e-003	0.0000	10.8781	10.8781	3.2000e-004	0.0000	10.8861
Total	**0.1448**	**7.3368**	**1.1591**	**9.0200e-003**	**0.0500**	**4.7200e-003**	**0.0547**	**0.0136**	**4.5100e-003**	**0.0182**	**0.0000**	**883.8148**	**883.8148**	**0.1212**	**0.0000**	**886.8443**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0752	0.7138	0.6424	8.6000e-004		0.0484	0.0484		0.0445	0.0445	0.0000	75.1807	75.1807	0.0243	0.0000	75.7886
Total	**0.0752**	**0.7138**	**0.6424**	**8.6000e-004**		**0.0484**	**0.0484**		**0.0445**	**0.0445**	**0.0000**	**75.1807**	**75.1807**	**0.0243**	**0.0000**	**75.7886**

3.4 Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.2100e-003	0.0250	7.0000e-005	7.2300e-003	6.0000e-005	7.2900e-003	1.9200e-003	5.0000e-005	1.9800e-003	0.0000	6.5269	6.5269	1.9000e-004	0.0000	6.5317
Total	**2.8400e-003**	**2.2100e-003**	**0.0250**	**7.0000e-005**	**7.2300e-003**	**6.0000e-005**	**7.2900e-003**	**1.9200e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**6.5269**	**6.5269**	**1.9000e-004**	**0.0000**	**6.5317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0752	0.7138	0.6424	8.6000e-004		0.0484	0.0484		0.0445	0.0445	0.0000	75.1807	75.1807	0.0243	0.0000	75.7885
Total	**0.0752**	**0.7138**	**0.6424**	**8.6000e-004**		**0.0484**	**0.0484**		**0.0445**	**0.0445**	**0.0000**	**75.1807**	**75.1807**	**0.0243**	**0.0000**	**75.7885**

3.4 Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.2100e-003	0.0250	7.0000e-005	5.6000e-003	6.0000e-005	5.6600e-003	1.5200e-003	5.0000e-005	1.5800e-003	0.0000	6.5269	6.5269	1.9000e-004	0.0000	6.5317
Total	**2.8400e-003**	**2.2100e-003**	**0.0250**	**7.0000e-005**	**5.6000e-003**	**6.0000e-005**	**5.6600e-003**	**1.5200e-003**	**5.0000e-005**	**1.5800e-003**	**0.0000**	**6.5269**	**6.5269**	**1.9000e-004**	**0.0000**	**6.5317**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0119	0.1227	0.1392	2.2000e-004		6.4400e-003	6.4400e-003		5.9200e-003	5.9200e-003	0.0000	19.0223	19.0223	6.1500e-003	0.0000	19.1761
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0120**	**0.1227**	**0.1392**	**2.2000e-004**		**6.4400e-003**	**6.4400e-003**		**5.9200e-003**	**5.9200e-003**	**0.0000**	**19.0223**	**19.0223**	**6.1500e-003**	**0.0000**	**19.1761**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.8000e-004	5.3900e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.1000e-004	1.0000e-005	4.3000e-004	0.0000	1.4092	1.4092	4.0000e-005	0.0000	1.4102
Total	**6.1000e-004**	**4.8000e-004**	**5.3900e-003**	**2.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5700e-003**	**4.1000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4092**	**1.4092**	**4.0000e-005**	**0.0000**	**1.4102**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0119	0.1227	0.1392	2.2000e-004		6.4400e-003	6.4400e-003		5.9200e-003	5.9200e-003	0.0000	19.0223	19.0223	6.1500e-003	0.0000	19.1761
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0120**	**0.1227**	**0.1392**	**2.2000e-004**		**6.4400e-003**	**6.4400e-003**		**5.9200e-003**	**5.9200e-003**	**0.0000**	**19.0223**	**19.0223**	**6.1500e-003**	**0.0000**	**19.1761**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.8000e-004	5.3900e-003	2.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.4092	1.4092	4.0000e-005	0.0000	1.4102
Total	**6.1000e-004**	**4.8000e-004**	**5.3900e-003**	**2.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.4092**	**1.4092**	**4.0000e-005**	**0.0000**	**1.4102**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0623	0.6286	0.8238	1.2900e-003		0.0321	0.0321		0.0295	0.0295	0.0000	113.1557	113.1557	0.0366	0.0000	114.0706
Paving	2.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0626**	**0.6286**	**0.8238**	**1.2900e-003**		**0.0321**	**0.0321**		**0.0295**	**0.0295**	**0.0000**	**113.1557**	**113.1557**	**0.0366**	**0.0000**	**114.0706**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4200e-003	2.5600e-003	0.0295	9.0000e-005	9.2900e-003	7.0000e-005	9.3600e-003	2.4700e-003	7.0000e-005	2.5300e-003	0.0000	8.0865	8.0865	2.2000e-004	0.0000	8.0920
Total	**3.4200e-003**	**2.5600e-003**	**0.0295**	**9.0000e-005**	**9.2900e-003**	**7.0000e-005**	**9.3600e-003**	**2.4700e-003**	**7.0000e-005**	**2.5300e-003**	**0.0000**	**8.0865**	**8.0865**	**2.2000e-004**	**0.0000**	**8.0920**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0623	0.6286	0.8238	1.2900e-003		0.0321	0.0321		0.0295	0.0295	0.0000	113.1556	113.1556	0.0366	0.0000	114.0705
Paving	2.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0626**	**0.6286**	**0.8238**	**1.2900e-003**		**0.0321**	**0.0321**		**0.0295**	**0.0295**	**0.0000**	**113.1556**	**113.1556**	**0.0366**	**0.0000**	**114.0705**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4200e-003	2.5600e-003	0.0295	9.0000e-005	7.1900e-003	7.0000e-005	7.2700e-003	1.9500e-003	7.0000e-005	2.0200e-003	0.0000	8.0865	8.0865	2.2000e-004	0.0000	8.0920
Total	**3.4200e-003**	**2.5600e-003**	**0.0295**	**9.0000e-005**	**7.1900e-003**	**7.0000e-005**	**7.2700e-003**	**1.9500e-003**	**7.0000e-005**	**2.0200e-003**	**0.0000**	**8.0865**	**8.0865**	**2.2000e-004**	**0.0000**	**8.0920**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1254	1.1478	1.2027	1.9800e-003		0.0595	0.0595		0.0559	0.0559	0.0000	170.3181	170.3181	0.0408	0.0000	171.3381
Total	**0.1254**	**1.1478**	**1.2027**	**1.9800e-003**		**0.0595**	**0.0595**		**0.0559**	**0.0559**	**0.0000**	**170.3181**	**170.3181**	**0.0408**	**0.0000**	**171.3381**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.4342	0.1172	1.1700e-003	0.0292	8.1000e-004	0.0300	8.4200e-003	7.8000e-004	9.2000e-003	0.0000	113.1377	113.1377	6.7600e-003	0.0000	113.3067
Worker	0.0899	0.0674	0.7760	2.3500e-003	0.2440	1.9500e-003	0.2460	0.0648	1.7900e-003	0.0666	0.0000	212.4950	212.4950	5.8500e-003	0.0000	212.6413
Total	**0.1034**	**0.5015**	**0.8932**	**3.5200e-003**	**0.2732**	**2.7600e-003**	**0.2760**	**0.0732**	**2.5700e-003**	**0.0758**	**0.0000**	**325.6328**	**325.6328**	**0.0126**	**0.0000**	**325.9480**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1254	1.1478	1.2027	1.9800e-003		0.0595	0.0595		0.0559	0.0559	0.0000	170.3179	170.3179	0.0408	0.0000	171.3379
Total	**0.1254**	**1.1478**	**1.2027**	**1.9800e-003**		**0.0595**	**0.0595**		**0.0559**	**0.0559**	**0.0000**	**170.3179**	**170.3179**	**0.0408**	**0.0000**	**171.3379**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.4342	0.1172	1.1700e-003	0.0238	8.1000e-004	0.0246	7.1000e-003	7.8000e-004	7.8800e-003	0.0000	113.1377	113.1377	6.7600e-003	0.0000	113.3067
Worker	0.0899	0.0674	0.7760	2.3500e-003	0.1890	1.9500e-003	0.1910	0.0513	1.7900e-003	0.0531	0.0000	212.4950	212.4950	5.8500e-003	0.0000	212.6413
Total	**0.1034**	**0.5015**	**0.8932**	**3.5200e-003**	**0.2128**	**2.7600e-003**	**0.2156**	**0.0584**	**2.5700e-003**	**0.0610**	**0.0000**	**325.6328**	**325.6328**	**0.0126**	**0.0000**	**325.9480**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0177	0.5802	0.1860	1.9900e-003	0.0516	6.8000e-004	0.0523	0.0149	6.5000e-004	0.0155	0.0000	193.8429	193.8429	0.0106	0.0000	194.1070
Worker	0.1494	0.1078	1.2621	4.0000e-003	0.4316	3.3500e-003	0.4350	0.1146	3.0800e-003	0.1177	0.0000	362.0884	362.0884	9.3200e-003	0.0000	362.3215
Total	**0.1672**	**0.6880**	**1.4481**	**5.9900e-003**	**0.4832**	**4.0300e-003**	**0.4873**	**0.1295**	**3.7300e-003**	**0.1333**	**0.0000**	**555.9314**	**555.9314**	**0.0199**	**0.0000**	**556.4284**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0177	0.5802	0.1860	1.9900e-003	0.0421	6.8000e-004	0.0428	0.0126	6.5000e-004	0.0132	0.0000	193.8429	193.8429	0.0106	0.0000	194.1070
Worker	0.1494	0.1078	1.2621	4.0000e-003	0.3344	3.3500e-003	0.3377	0.0908	3.0800e-003	0.0939	0.0000	362.0884	362.0884	9.3200e-003	0.0000	362.3215
Total	**0.1672**	**0.6880**	**1.4481**	**5.9900e-003**	**0.3765**	**4.0300e-003**	**0.3805**	**0.1033**	**3.7300e-003**	**0.1071**	**0.0000**	**555.9314**	**555.9314**	**0.0199**	**0.0000**	**556.4284**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.5824	0.1817	2.0000e-003	0.0520	6.7000e-004	0.0527	0.0150	6.4000e-004	0.0157	0.0000	194.5558	194.5558	0.0105	0.0000	194.8180
Worker	0.1426	0.0991	1.1843	3.9100e-003	0.4350	3.3300e-003	0.4383	0.1155	3.0600e-003	0.1186	0.0000	353.5605	353.5605	8.6100e-003	0.0000	353.7757
Total	**0.1601**	**0.6815**	**1.3660**	**5.9100e-003**	**0.4870**	**4.0000e-003**	**0.4909**	**0.1305**	**3.7000e-003**	**0.1342**	**0.0000**	**548.1163**	**548.1163**	**0.0191**	**0.0000**	**548.5937**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.5824	0.1817	2.0000e-003	0.0424	6.7000e-004	0.0431	0.0127	6.4000e-004	0.0133	0.0000	194.5558	194.5558	0.0105	0.0000	194.8180
Worker	0.1426	0.0991	1.1843	3.9100e-003	0.3369	3.3300e-003	0.3403	0.0915	3.0600e-003	0.0945	0.0000	353.5605	353.5605	8.6100e-003	0.0000	353.7757
Total	**0.1601**	**0.6815**	**1.3660**	**5.9100e-003**	**0.3794**	**4.0000e-003**	**0.3834**	**0.1041**	**3.7000e-003**	**0.1078**	**0.0000**	**548.1163**	**548.1163**	**0.0191**	**0.0000**	**548.5937**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0841	0.7669	0.9892	1.6600e-003		0.0324	0.0324		0.0305	0.0305	0.0000	142.6305	142.6305	0.0335	0.0000	143.4687
Total	**0.0841**	**0.7669**	**0.9892**	**1.6600e-003**		**0.0324**	**0.0324**		**0.0305**	**0.0305**	**0.0000**	**142.6305**	**142.6305**	**0.0335**	**0.0000**	**143.4687**

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.9700e-003	0.2711	0.0831	9.3000e-004	0.0244	3.1000e-004	0.0247	7.0400e-003	3.0000e-004	7.3400e-003	0.0000	90.8396	90.8396	4.8500e-003	0.0000	90.9609
Worker	0.0637	0.0426	0.5160	1.7600e-003	0.2042	1.5300e-003	0.2057	0.0542	1.4100e-003	0.0556	0.0000	159.5574	159.5574	3.6800e-003	0.0000	159.6495
Total	**0.0716**	**0.3136**	**0.5991**	**2.6900e-003**	**0.2286**	**1.8400e-003**	**0.2305**	**0.0613**	**1.7100e-003**	**0.0630**	**0.0000**	**250.3970**	**250.3970**	**8.5300e-003**	**0.0000**	**250.6104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0841	0.7669	0.9892	1.6600e-003		0.0324	0.0324		0.0305	0.0305	0.0000	142.6303	142.6303	0.0335	0.0000	143.4685
Total	**0.0841**	**0.7669**	**0.9892**	**1.6600e-003**		**0.0324**	**0.0324**		**0.0305**	**0.0305**	**0.0000**	**142.6303**	**142.6303**	**0.0335**	**0.0000**	**143.4685**

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.9700e-003	0.2711	0.0831	9.3000e-004	0.0199	3.1000e-004	0.0202	5.9400e-003	3.0000e-004	6.2400e-003	0.0000	90.8396	90.8396	4.8500e-003	0.0000	90.9609
Worker	0.0637	0.0426	0.5160	1.7600e-003	0.1582	1.5300e-003	0.1597	0.0429	1.4100e-003	0.0444	0.0000	159.5574	159.5574	3.6800e-003	0.0000	159.6495
Total	**0.0716**	**0.3136**	**0.5991**	**2.6900e-003**	**0.1781**	**1.8400e-003**	**0.1799**	**0.0489**	**1.7100e-003**	**0.0506**	**0.0000**	**250.3970**	**250.3970**	**8.5300e-003**	**0.0000**	**250.6104**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	7.1700e-003	9.9600e-003	2.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	1.4043	1.4043	8.0000e-005	0.0000	1.4064
Total	**0.0385**	**7.1700e-003**	**9.9600e-003**	**2.0000e-005**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.4043**	**1.4043**	**8.0000e-005**	**0.0000**	**1.4064**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	9.2000e-004	0.0108	3.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	3.0000e-005	1.0000e-003	0.0000	3.0841	3.0841	8.0000e-005	0.0000	3.0860
Total	**1.2700e-003**	**9.2000e-004**	**0.0108**	**3.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**3.0000e-005**	**1.0000e-003**	**0.0000**	**3.0841**	**3.0841**	**8.0000e-005**	**0.0000**	**3.0860**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	7.1700e-003	9.9600e-003	2.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	1.4043	1.4043	8.0000e-005	0.0000	1.4064
Total	**0.0385**	**7.1700e-003**	**9.9600e-003**	**2.0000e-005**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.4043**	**1.4043**	**8.0000e-005**	**0.0000**	**1.4064**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	9.2000e-004	0.0108	3.0000e-005	2.8500e-003	3.0000e-005	2.8800e-003	7.7000e-004	3.0000e-005	8.0000e-004	0.0000	3.0841	3.0841	8.0000e-005	0.0000	3.0860
Total	**1.2700e-003**	**9.2000e-004**	**0.0108**	**3.0000e-005**	**2.8500e-003**	**3.0000e-005**	**2.8800e-003**	**7.7000e-004**	**3.0000e-005**	**8.0000e-004**	**0.0000**	**3.0841**	**3.0841**	**8.0000e-005**	**0.0000**	**3.0860**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8925					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.9162**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0287	0.0199	0.2384	7.9000e-004	0.0876	6.7000e-004	0.0882	0.0233	6.2000e-004	0.0239	0.0000	71.1788	71.1788	1.7300e-003	0.0000	71.2222
Total	**0.0287**	**0.0199**	**0.2384**	**7.9000e-004**	**0.0876**	**6.7000e-004**	**0.0882**	**0.0233**	**6.2000e-004**	**0.0239**	**0.0000**	**71.1788**	**71.1788**	**1.7300e-003**	**0.0000**	**71.2222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8925					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.9162**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0287	0.0199	0.2384	7.9000e-004	0.0678	6.7000e-004	0.0685	0.0184	6.2000e-004	0.0190	0.0000	71.1788	71.1788	1.7300e-003	0.0000	71.2222
Total	**0.0287**	**0.0199**	**0.2384**	**7.9000e-004**	**0.0678**	**6.7000e-004**	**0.0685**	**0.0184**	**6.2000e-004**	**0.0190**	**0.0000**	**71.1788**	**71.1788**	**1.7300e-003**	**0.0000**	**71.2222**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0705	0.1113	1.8000e-004		3.1700e-003	3.1700e-003		3.1700e-003	3.1700e-003	0.0000	15.7025	15.7025	8.6000e-004	0.0000	15.7239
Total	**0.4295**	**0.0705**	**0.1113**	**1.8000e-004**		**3.1700e-003**	**3.1700e-003**		**3.1700e-003**	**3.1700e-003**	**0.0000**	**15.7025**	**15.7025**	**8.6000e-004**	**0.0000**	**15.7239**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0128	8.5700e-003	0.1039	3.6000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112	0.0000	32.1221	32.1221	7.4000e-004	0.0000	32.1407
Total	**0.0128**	**8.5700e-003**	**0.1039**	**3.6000e-004**	**0.0411**	**3.1000e-004**	**0.0414**	**0.0109**	**2.8000e-004**	**0.0112**	**0.0000**	**32.1221**	**32.1221**	**7.4000e-004**	**0.0000**	**32.1407**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0705	0.1113	1.8000e-004		3.1700e-003	3.1700e-003		3.1700e-003	3.1700e-003	0.0000	15.7025	15.7025	8.6000e-004	0.0000	15.7239
Total	**0.4295**	**0.0705**	**0.1113**	**1.8000e-004**		**3.1700e-003**	**3.1700e-003**		**3.1700e-003**	**3.1700e-003**	**0.0000**	**15.7025**	**15.7025**	**8.6000e-004**	**0.0000**	**15.7239**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0128	8.5700e-003	0.1039	3.6000e-004	0.0318	3.1000e-004	0.0322	8.6400e-003	2.8000e-004	8.9300e-003	0.0000	32.1221	32.1221	7.4000e-004	0.0000	32.1407
Total	**0.0128**	**8.5700e-003**	**0.1039**	**3.6000e-004**	**0.0318**	**3.1000e-004**	**0.0322**	**8.6400e-003**	**2.8000e-004**	**8.9300e-003**	**0.0000**	**32.1221**	**32.1221**	**7.4000e-004**	**0.0000**	**32.1407**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742
Unmitigated	1.0096	4.8051	13.8472	0.0566	5.1112	0.0431	5.1543	1.3698	0.0401	1.4098	0.0000	5,242.6946	5,242.6946	0.2432	0.0000	5,248.7742

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	840.06	840.06	840.06	2,870,613	2,870,613
City Park	0.00	0.00	0.00		
Condo/Townhouse High Rise	2,444.79	2,444.79	2444.79	8,354,219	8,354,219
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	656.97	656.97	656.97	2,244,966	2,244,966
Total	3,941.82	3,941.82	3,941.82	13,469,798	13,469,798

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
City Park	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Condo/Townhouse High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Health Club	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Recreational Swimming Pool	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Single Family Housing	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Bouquet Canyon Project_Unmitigated - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	430.3221	430.3221	0.0243	5.0300e-003	432.4301
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	446.1429	446.1429	0.0252	5.2200e-003	448.3284
NaturalGas Mitigated	0.0219	0.1876	0.0822	1.2000e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.8260	216.8260	4.1600e-003	3.9800e-003	218.1145
NaturalGas Unmitigated	0.0321	0.2750	0.1210	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	317.8500	317.8500	6.0900e-003	5.8300e-003	319.7388

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.0449e+006	5.6300e-003	0.0482	0.0205	3.1000e-004		3.8900e-003	3.8900e-003		3.8900e-003	3.8900e-003	0.0000	55.7599	55.7599	1.0700e-003	1.0200e-003	56.0913
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	3.04093e+006	0.0164	0.1401	0.0596	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.2756	162.2756	3.1100e-003	2.9800e-003	163.2400
Health Club	194503	1.0500e-003	9.5300e-003	8.0100e-003	6.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	10.3794	10.3794	2.0000e-004	1.9000e-004	10.4411
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.67595e+006	9.0400e-003	0.0772	0.0329	4.9000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	89.4351	89.4351	1.7100e-003	1.6400e-003	89.9665
Total		**0.0321**	**0.2750**	**0.1210**	**1.7500e-003**		**0.0222**	**0.0222**		**0.0222**	**0.0222**	**0.0000**	**317.8500**	**317.8500**	**6.0900e-003**	**5.8300e-003**	**319.7388**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	755018	4.0700e-003	0.0348	0.0148	2.2000e-004		2.8100e-003	2.8100e-003		2.8100e-003	2.8100e-003	0.0000	40.2906	40.2906	7.7000e-004	7.4000e-004	40.5301
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	2.1973e+006	0.0119	0.1013	0.0431	6.5000e-004		8.1900e-003	8.1900e-003		8.1900e-003	8.1900e-003	0.0000	117.2561	117.2561	2.2500e-003	2.1500e-003	117.9529
Health Club	116761	6.3000e-004	5.7200e-003	4.8100e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.2308	6.2308	1.2000e-004	1.1000e-004	6.2678
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	994091	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	53.0485	53.0485	1.0200e-003	9.7000e-004	53.3637
Total		**0.0219**	**0.1876**	**0.0822**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**	**0.0000**	**216.8260**	**216.8260**	**4.1600e-003**	**3.9700e-003**	**218.1145**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	315757	73.4745	4.1500e-003	8.6000e-004	73.8344
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	977877	227.5451	0.0129	2.6600e-003	228.6598
Health Club	119281	27.7558	1.5700e-003	3.2000e-004	27.8917
Parking Lot	3682.7	0.8569	5.0000e-005	1.0000e-005	0.8611
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	500706	116.5107	6.5900e-003	1.3600e-003	117.0814
Total		**446.1429**	**0.0252**	**5.2100e-003**	**448.3284**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	305314	71.0443	4.0200e-003	8.3000e-004	71.3923
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	947483	220.4727	0.0125	2.5800e-003	221.5527
Health Club	106466	24.7739	1.4000e-003	2.9000e-004	24.8952
Parking Lot	3682.7	0.8569	5.0000e-005	1.0000e-005	0.8611
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	486368	113.1744	6.4000e-003	1.3200e-003	113.7288
Total		**430.3222**	**0.0243**	**5.0300e-003**	**432.4301**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7956	0.1117	3.8004	6.4000e-004		0.0265	0.0265		0.0265	0.0265	0.0000	85.2675	85.2675	7.4200e-003	1.4500e-003	85.8852
Unmitigated	2.9865	0.1384	6.0979	6.1300e-003		0.3704	0.3704		0.3704	0.3704	38.8762	80.8730	119.7492	0.1218	2.6400e-003	123.5815

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5395					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.1988	0.0949	2.3266	5.9400e-003		0.3495	0.3495		0.3495	0.3495	38.8762	74.7067	113.5828	0.1159	2.6400e-003	117.2676
Landscaping	0.1133	0.0434	3.7713	2.0000e-004		0.0209	0.0209		0.0209	0.0209	0.0000	6.1663	6.1663	5.9100e-003	0.0000	6.3140
Total	**2.9865**	**0.1384**	**6.0979**	**6.1400e-003**		**0.3704**	**0.3704**		**0.3704**	**0.3704**	**38.8762**	**80.8730**	**119.7491**	**0.1219**	**2.6400e-003**	**123.5815**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5395					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.9900e-003	0.0683	0.0291	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.0000	79.1012	79.1012	1.5200e-003	1.4500e-003	79.5712
Landscaping	0.1133	0.0434	3.7713	2.0000e-004		0.0209	0.0209		0.0209	0.0209	0.0000	6.1663	6.1663	5.9100e-003	0.0000	6.3140
Total	**1.7956**	**0.1117**	**3.8003**	**6.4000e-004**		**0.0264**	**0.0264**		**0.0264**	**0.0264**	**0.0000**	**85.2675**	**85.2675**	**7.4300e-003**	**1.4500e-003**	**85.8852**

7.0 Water Detail

7.1 Mitigation Measures Water

Bouquet Canyon Project_Unmitigated - Los Angeles-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	132.8039	0.8235	0.0207	159.5703
Unmitigated	132.8039	0.8235	0.0207	159.5703

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.08201 / 3.20388	25.2930	0.1669	4.1900e-003	30.7141
City Park	0 / 3.15743	8.1626	4.6000e-004	1.0000e-004	8.2026
Condo/Townhouse High Rise	14.79 / 9.32411	73.6091	0.4858	0.0122	89.3860
Health Club	0.635789 / 0.389677	3.1355	0.0209	5.2000e-004	3.8136
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.572506 / 0.350891	2.8234	0.0188	4.7000e-004	3.4340
Single Family Housing	3.9744 / 2.5056	19.7804	0.1306	3.2700e-003	24.0200
Total		**132.8039**	**0.8235**	**0.0207**	**159.5703**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.08201 / 3.20388	25.2930	0.1669	4.1900e-003	30.7141
City Park	0 / 3.15743	8.1626	4.6000e-004	1.0000e-004	8.2026
Condo/Townhouse High Rise	14.79 / 9.32411	73.6091	0.4858	0.0122	89.3860
Health Club	0.635789 / 0.389677	3.1355	0.0209	5.2000e-004	3.8136
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.572506 / 0.350891	2.8234	0.0188	4.7000e-004	3.4340
Single Family Housing	3.9744 / 2.5056	19.7804	0.1306	3.2700e-003	24.0200
Total		**132.8039**	**0.8235**	**0.0207**	**159.5703**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	33.3230	1.9693	0.0000	82.5563
Unmitigated	66.6460	3.9387	0.0000	165.1126

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	35.88	7.2833	0.4304	0.0000	18.0441
City Park	0.23	0.0467	2.7600e-003	0.0000	0.1157
Condo/Townhouse High Rise	104.42	21.1963	1.2527	0.0000	52.5130
Health Club	61.27	12.4373	0.7350	0.0000	30.8128
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	55.18	11.2010	0.6620	0.0000	27.7501
Single Family Housing	71.34	14.4814	0.8558	0.0000	35.8770
Total		**66.6460**	**3.9387**	**0.0000**	**165.1126**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	17.94	3.6417	0.2152	0.0000	9.0221
City Park	0.115	0.0233	1.3800e-003	0.0000	0.0578
Condo/Townhouse High Rise	52.21	10.5982	0.6263	0.0000	26.2565
Health Club	30.635	6.2186	0.3675	0.0000	15.4064
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	27.59	5.6005	0.3310	0.0000	13.8751
Single Family Housing	35.67	7.2407	0.4279	0.0000	17.9385
Total		**33.3230**	**1.9693**	**0.0000**	**82.5563**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bouquet Canyon Project_Unmitigated

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	10.52	1000sqft	0.24	10,522.00	0
City Park	2.65	Acre	2.65	115,434.00	0
Health Club	10.75	1000sqft	0.25	10,746.00	0
Recreational Swimming Pool	9.68	1000sqft	0.22	9,676.00	0
Apartments Mid Rise	78.00	Dwelling Unit	2.05	78,000.00	223
Condo/Townhouse High Rise	227.00	Dwelling Unit	3.55	227,000.00	649
Single Family Housing	61.00	Dwelling Unit	19.81	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	513	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor Source: Southern California Edison, 2018 Sustainability Report, dated May 2019.

Land Use - Per project description.

Construction Phase - Based on applicant assumptions.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Anticipated trenching equipment.

Trips and VMT - Earthwork would be balanced on-site.

Grading -

Vehicle Trips - Per traffic study.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD standards and regulations.

Energy Mitigation - % Improvement based on efficiency of 2019 Title 24 Standards compared to 2016 Title 24 Standards.

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	45.00	187.00
tblConstructionPhase	NumDays	35.00	132.00
tblConstructionPhase	NumDays	440.00	792.00
tblConstructionPhase	NumDays	35.00	396.00
tblGrading	MaterialExported	0.00	2,069,664.00
tblGrading	MaterialImported	0.00	2,069,664.00
tblLandUse	LandUseSquareFeet	10,520.00	10,522.00
tblLandUse	LandUseSquareFeet	10,750.00	10,746.00
tblLandUse	LandUseSquareFeet	9,680.00	9,676.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	513
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblVehicleTrips	ST_TR	6.39	10.77
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	4.31	10.77
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.77
tblVehicleTrips	SU_TR	5.86	10.77
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	3.43	10.77

tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	10.77
tblVehicleTrips	WD_TR	6.65	10.77
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	4.18	10.77
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.1221	189.9531	51.2294	0.2357	18.2675	2.2643	20.4666	9.9840	2.0864	12.0072	0.0000	24,753.6860	24,753.6860	4.3682	0.0000	24,862.8917
2021	6.7001	181.4432	49.3303	0.2339	12.3536	2.0640	14.4176	4.2896	1.9017	6.1913	0.0000	24,582.2272	24,582.2272	4.2478	0.0000	24,688.4211
2022	3.1026	22.2389	29.1359	0.0764	3.7902	0.8465	4.6366	1.0143	0.7960	1.8104	0.0000	7,600.0930	7,600.0930	0.8023	0.0000	7,620.1516
2023	10.0835	20.9779	31.8781	0.0841	4.4720	0.8066	5.2786	1.1952	0.7626	1.9578	0.0000	8,352.1492	8,352.1492	0.8115	0.0000	8,372.4369
2024	9.8941	19.8586	30.9141	0.0828	4.4720	0.7098	5.1818	1.1952	0.6707	1.8659	0.0000	8,226.4853	8,226.4853	0.7976	0.0000	8,246.4243
2025	9.7112	18.7060	29.9698	0.0813	4.4720	0.6139	5.0859	1.1952	0.5800	1.7752	0.0000	8,073.4713	8,073.4713	0.7844	0.0000	8,093.0822
Maximum	**10.0835**	**189.9531**	**51.2294**	**0.2357**	**18.2675**	**2.2643**	**20.4666**	**9.9840**	**2.0864**	**12.0072**	**0.0000**	**24,753.6860**	**24,753.6860**	**4.3682**	**0.0000**	**24,862.8917**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.1221	189.9531	51.2294	0.2357	6.8493	2.2643	9.0484	3.7215	2.0864	5.7447	0.0000	24,753.6859	24,753.6859	4.3682	0.0000	24,862.8917
2021	6.7001	181.4432	49.3303	0.2339	5.0653	2.0640	7.1293	1.7250	1.9017	3.6266	0.0000	24,582.2272	24,582.2272	4.2478	0.0000	24,688.4211
2022	3.1026	22.2389	29.1359	0.0764	2.9499	0.8465	3.7964	0.8081	0.7960	1.6041	0.0000	7,600.0930	7,600.0930	0.8023	0.0000	7,620.1516
2023	10.0835	20.9779	31.8781	0.0841	3.4776	0.8066	4.2842	0.9511	0.7626	1.7137	0.0000	8,352.1492	8,352.1492	0.8115	0.0000	8,372.4369
2024	9.8941	19.8586	30.9141	0.0828	3.4777	0.7098	4.1874	0.9511	0.6707	1.6218	0.0000	8,226.4853	8,226.4853	0.7976	0.0000	8,246.4243
2025	9.7112	18.7060	29.9698	0.0813	3.4777	0.6139	4.0916	0.9511	0.5800	1.5311	0.0000	8,073.4713	8,073.4713	0.7844	0.0000	8,093.0822
Maximum	**10.0835**	**189.9531**	**51.2294**	**0.2357**	**6.8493**	**2.2643**	**9.0484**	**3.7215**	**2.0864**	**5.7447**	**0.0000**	**24,753.6859**	**24,753.6859**	**4.3682**	**0.0000**	**24,862.8917**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.11**	**0.00**	**40.91**	**51.74**	**0.00**	**38.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086
Energy	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424
Mobile	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052
Total	**112.0209**	**34.8339**	**296.2064**	**0.8083**	**28.6363**	**28.4840**	**57.1203**	**7.6619**	**28.4672**	**36.1291**	**3,428.2921**	**41,434.3510**	**44,862.6431**	**11.7953**	**0.2679**	**45,237.3562**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Energy	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
Mobile	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052
Total	**16.6992**	**32.2249**	**112.1891**	**0.3653**	**28.6363**	**0.9290**	**29.5653**	**7.6619**	**0.9122**	**8.5741**	**0.0000**	**41,211.6893**	**41,211.6893**	**1.6935**	**0.1519**	**41,299.2916**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**85.09**	**7.49**	**62.12**	**54.81**	**0.00**	**96.74**	**48.24**	**0.00**	**96.80**	**76.27**	**100.00**	**0.54**	**8.14**	**85.64**	**43.30**	**8.71**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	9/15/2020	5	77	
2	Grading - Earthwork	Grading	9/16/2020	6/3/2021	5	187	
3	Trenching	Trenching	6/4/2021	12/6/2021	5	132	
4	Paving	Paving	12/7/2021	6/8/2022	5	132	
5	Building Construction	Building Construction	6/9/2022	6/20/2025	5	792	
6	Architectural Coating	Architectural Coating	12/15/2023	6/20/2025	5	396	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.24

Residential Indoor: 839,970; Residential Outdoor: 279,990; Non-Residential Indoor: 16,119; Non-Residential Outdoor: 5,373; Striped Parking Area: 631 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Earthwork	Excavators	2	8.00	158	0.38
Grading - Earthwork	Graders	1	8.00	187	0.41
Grading - Earthwork	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Earthwork	Scrapers	2	8.00	367	0.48
Grading - Earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Pavers	0		130	0.42
Trenching	Paving Equipment	0		132	0.36
Trenching	Rollers	0		80	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Trenchers	2	8.00	78	0.50
Paving	Air Compressors	0		78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Earthwork	8	20.00	0.00	258,708.00	14.70	6.90	0.50	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	303.00	63.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**6.6936**	**2.1974**	**8.8910**	**3.6793**	**2.0216**	**5.7009**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.1557	1.6800e-003	0.1574	0.0422	1.5500e-003	0.0438		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.1557**	**1.6800e-003**	**0.1574**	**0.0422**	**1.5500e-003**	**0.0438**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

3.3 Grading - Earthwork - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**11.1766**	**2.1739**	**13.3505**	**3.9756**	**2.0000**	**5.9756**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - Earthwork - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.5800	139.6901	18.3954	0.1714	1.2866	0.0886	1.3752	0.3365	0.0847	0.4212		18,512.5981	18,512.5981	2.4184		18,573.0580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0655	0.8757	2.3600e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		235.2226	235.2226	7.4200e-003		235.4080
Total	**2.6720**	**139.7556**	**19.2711**	**0.1737**	**1.5101**	**0.0904**	**1.6006**	**0.3958**	**0.0864**	**0.4822**		**18,747.8207**	**18,747.8207**	**2.4258**		**18,808.4660**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**4.1409**	**2.1739**	**6.3148**	**1.4730**	**2.0000**	**3.4729**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - Earthwork - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.5800	139.6901	18.3954	0.1714	0.9979	0.0886	1.0864	0.2656	0.0847	0.3503		18,512.5981	18,512.5981	2.4184		18,573.0580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0655	0.8757	2.3600e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486		235.2226	235.2226	7.4200e-003		235.4080
Total	**2.6720**	**139.7556**	**19.2711**	**0.1737**	**1.1709**	**0.0904**	**1.2613**	**0.3125**	**0.0864**	**0.3990**		**18,747.8207**	**18,747.8207**	**2.4258**		**18,808.4660**

3.3 Grading - Earthwork - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**11.1766**	**1.9853**	**13.1620**	**3.9756**	**1.8265**	**5.8021**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - Earthwork - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4232	134.9845	17.6463	0.1696	0.9535	0.0768	1.0303	0.2547	0.0735	0.3282		18,347.4298	18,347.4298	2.2983		18,404.8859
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0857	0.0589	0.8056	2.2900e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		227.7540	227.7540	6.7100e-003		227.9217
Total	**2.5089**	**135.0434**	**18.4519**	**0.1719**	**1.1770**	**0.0786**	**1.2557**	**0.3140**	**0.0752**	**0.3892**		**18,575.1837**	**18,575.1837**	**2.3050**		**18,632.8077**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**4.1409**	**1.9853**	**6.1263**	**1.4730**	**1.8265**	**3.2995**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - Earthwork - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4232	134.9845	17.6463	0.1696	0.7514	0.0768	0.8282	0.2051	0.0735	0.2786		18,347.4298	18,347.4298	2.2983		18,404.8859
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0857	0.0589	0.8056	2.2900e-003	0.1730	1.8100e-003	0.1748	0.0469	1.6600e-003	0.0486		227.7540	227.7540	6.7100e-003		227.9217
Total	**2.5089**	**135.0434**	**18.4519**	**0.1719**	**0.9244**	**0.0786**	**1.0030**	**0.2520**	**0.0752**	**0.3272**		**18,575.1837**	**18,575.1837**	**2.3050**		**18,632.8077**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749		1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**		**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

3.4 Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**		**113.8770**	**113.8770**	**3.3600e-003**		**113.9609**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749	0.0000	1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**	**0.0000**	**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

3.4 Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.0865	9.0000e-004	0.0874	0.0234	8.3000e-004	0.0243		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.0865**	**9.0000e-004**	**0.0874**	**0.0234**	**8.3000e-004**	**0.0243**		**113.8770**	**113.8770**	**3.3600e-003**		**113.9609**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2603**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2603**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1298	1.3500e-003	0.1311	0.0352	1.2500e-003	0.0364		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1298**	**1.3500e-003**	**0.1311**	**0.0352**	**1.2500e-003**	**0.0364**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1076**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1076**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1298	1.3100e-003	0.1311	0.0352	1.2100e-003	0.0364		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1298**	**1.3100e-003**	**0.1311**	**0.0352**	**1.2100e-003**	**0.0364**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1797	5.8168	1.5129	0.0161	0.4033	0.0109	0.4143	0.1161	0.0105	0.1266		1,716.6611	1,716.6611	0.0985		1,719.1239
Worker	1.2166	0.8064	11.2596	0.0334	3.3868	0.0265	3.4133	0.8982	0.0244	0.9226		3,329.0983	3,329.0983	0.0919		3,331.3954
Total	**1.3963**	**6.6232**	**12.7725**	**0.0495**	**3.7902**	**0.0374**	**3.8276**	**1.0143**	**0.0349**	**1.0492**		**5,045.7594**	**5,045.7594**	**0.1904**		**5,050.5194**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1797	5.8168	1.5129	0.0161	0.3286	0.0109	0.3396	0.0978	0.0105	0.1083		1,716.6611	1,716.6611	0.0985		1,719.1239
Worker	1.2166	0.8064	11.2596	0.0334	2.6213	0.0265	2.6478	0.7103	0.0244	0.7347		3,329.0983	3,329.0983	0.0919		3,331.3954
Total	**1.3963**	**6.6232**	**12.7725**	**0.0495**	**2.9499**	**0.0374**	**2.9874**	**0.8081**	**0.0349**	**0.8430**		**5,045.7594**	**5,045.7594**	**0.1904**		**5,050.5194**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.4136	1.3664	0.0155	0.4034	5.1000e-003	0.4085	0.1161	4.8700e-003	0.1210		1,662.6168	1,662.6168	0.0873		1,664.7993
Worker	1.1425	0.7296	10.3691	0.0322	3.3868	0.0258	3.4126	0.8982	0.0237	0.9219		3,207.2004	3,207.2004	0.0829		3,209.2716
Total	**1.2758**	**5.1432**	**11.7354**	**0.0477**	**3.7902**	**0.0309**	**3.8210**	**1.0143**	**0.0286**	**1.0429**		**4,869.8172**	**4,869.8172**	**0.1702**		**4,874.0708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.4136	1.3664	0.0155	0.3286	5.1000e-003	0.3337	0.0978	4.8700e-003	0.1027		1,662.6168	1,662.6168	0.0873		1,664.7993
Worker	1.1425	0.7296	10.3691	0.0322	2.6213	0.0258	2.6470	0.7103	0.0237	0.7340		3,207.2004	3,207.2004	0.0829		3,209.2716
Total	**1.2758**	**5.1432**	**11.7354**	**0.0477**	**2.9499**	**0.0309**	**2.9808**	**0.8081**	**0.0286**	**0.8367**		**4,869.8172**	**4,869.8172**	**0.1702**		**4,874.0708**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1301	4.3967	1.3248	0.0154	0.4034	5.0300e-003	0.4084	0.1161	4.8100e-003	0.1210		1,655.8695	1,655.8695	0.0861		1,658.0209
Worker	1.0808	0.6654	9.6664	0.0312	3.3868	0.0254	3.4122	0.8982	0.0234	0.9216		3,107.8051	3,107.8051	0.0760		3,109.7053
Total	**1.2109**	**5.0621**	**10.9911**	**0.0466**	**3.7902**	**0.0304**	**3.8206**	**1.0143**	**0.0282**	**1.0425**		**4,763.6747**	**4,763.6747**	**0.1621**		**4,767.7261**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1301	4.3967	1.3248	0.0154	0.3287	5.0300e-003	0.3337	0.0978	4.8100e-003	0.1026		1,655.8695	1,655.8695	0.0861		1,658.0209
Worker	1.0808	0.6654	9.6664	0.0312	2.6213	0.0254	2.6467	0.7103	0.0234	0.7337		3,107.8051	3,107.8051	0.0760		3,109.7053
Total	**1.2109**	**5.0621**	**10.9911**	**0.0466**	**2.9499**	**0.0304**	**2.9804**	**0.8081**	**0.0282**	**0.8363**		**4,763.6747**	**4,763.6747**	**0.1621**		**4,767.7261**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1269	4.3594	1.2907	0.0154	0.4034	4.9600e-003	0.4083	0.1161	4.7400e-003	0.1209		1,646.7456	1,646.7456	0.0849		1,648.8667
Worker	1.0262	0.6088	8.9779	0.0300	3.3868	0.0249	3.4117	0.8982	0.0229	0.9211		2,987.3830	2,987.3830	0.0693		2,989.1163
Total	**1.1531**	**4.9682**	**10.2686**	**0.0453**	**3.7902**	**0.0298**	**3.8200**	**1.0143**	**0.0276**	**1.0420**		**4,634.1285**	**4,634.1285**	**0.1542**		**4,637.9830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1269	4.3594	1.2907	0.0154	0.3287	4.9600e-003	0.3336	0.0978	4.7400e-003	0.1025		1,646.7456	1,646.7456	0.0849		1,648.8667
Worker	1.0262	0.6088	8.9779	0.0300	2.6213	0.0249	2.6461	0.7103	0.0229	0.7332		2,987.3830	2,987.3830	0.0693		2,989.1163
Total	**1.1531**	**4.9682**	**10.2686**	**0.0453**	**2.9499**	**0.0298**	**2.9798**	**0.8081**	**0.0276**	**0.8357**		**4,634.1285**	**4,634.1285**	**0.1542**		**4,637.9830**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2300	0.1469	2.0875	6.4800e-003	0.6818	5.1900e-003	0.6870	0.1808	4.7700e-003	0.1856		645.6740	645.6740	0.0167		646.0910
Total	**0.2300**	**0.1469**	**2.0875**	**6.4800e-003**	**0.6818**	**5.1900e-003**	**0.6870**	**0.1808**	**4.7700e-003**	**0.1856**		**645.6740**	**645.6740**	**0.0167**		**646.0910**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2300	0.1469	2.0875	6.4800e-003	0.5277	5.1900e-003	0.5329	0.1430	4.7700e-003	0.1478		645.6740	645.6740	0.0167		646.0910
Total	**0.2300**	**0.1469**	**2.0875**	**6.4800e-003**	**0.5277**	**5.1900e-003**	**0.5329**	**0.1430**	**4.7700e-003**	**0.1478**		**645.6740**	**645.6740**	**0.0167**		**646.0910**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2176	0.1340	1.9460	6.2800e-003	0.6818	5.1100e-003	0.6870	0.1808	4.7100e-003	0.1855		625.6637	625.6637	0.0153		626.0463
Total	**0.2176**	**0.1340**	**1.9460**	**6.2800e-003**	**0.6818**	**5.1100e-003**	**0.6870**	**0.1808**	**4.7100e-003**	**0.1855**		**625.6637**	**625.6637**	**0.0153**		**626.0463**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2176	0.1340	1.9460	6.2800e-003	0.5277	5.1100e-003	0.5328	0.1430	4.7100e-003	0.1477		625.6637	625.6637	0.0153		626.0463
Total	**0.2176**	**0.1340**	**1.9460**	**6.2800e-003**	**0.5277**	**5.1100e-003**	**0.5328**	**0.1430**	**4.7100e-003**	**0.1477**		**625.6637**	**625.6637**	**0.0153**		**626.0463**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2066	0.1226	1.8074	6.0300e-003	0.6818	5.0000e-003	0.6868	0.1808	4.6100e-003	0.1854		601.4203	601.4203	0.0140		601.7693
Total	**0.2066**	**0.1226**	**1.8074**	**6.0300e-003**	**0.6818**	**5.0000e-003**	**0.6868**	**0.1808**	**4.6100e-003**	**0.1854**		**601.4203**	**601.4203**	**0.0140**		**601.7693**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2066	0.1226	1.8074	6.0300e-003	0.5277	5.0000e-003	0.5327	0.1430	4.6100e-003	0.1476		601.4203	601.4203	0.0140		601.7693
Total	**0.2066**	**0.1226**	**1.8074**	**6.0300e-003**	**0.5277**	**5.0000e-003**	**0.5327**	**0.1430**	**4.6100e-003**	**0.1476**		**601.4203**	**601.4203**	**0.0140**		**601.7693**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052
Unmitigated	5.8590	25.3855	79.2433	0.3222	28.6363	0.2369	28.8732	7.6619	0.2201	7.8819		32,872.1397	32,872.1397	1.4826		32,909.2052

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	840.06	840.06	840.06	2,870,613	2,870,613
City Park	0.00	0.00	0.00		
Condo/Townhouse High Rise	2,444.79	2,444.79	2444.79	8,354,219	8,354,219
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	656.97	656.97	656.97	2,244,966	2,244,966
Total	3,941.82	3,941.82	3,941.82	13,469,798	13,469,798

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
City Park	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Condo/Townhouse High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Health Club	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Recreational Swimming Pool	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Single Family Housing	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Bouquet Canyon Project_Unmitigated - Los Angeles-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
NaturalGas Unmitigated	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2862.74	0.0309	0.2638	0.1123	1.6800e-003		0.0213	0.0213		0.0213	0.0213		336.7933	336.7933	6.4600e-003	6.1700e-003	338.7947
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	8331.32	0.0899	0.7678	0.3267	4.9000e-003		0.0621	0.0621		0.0621	0.0621		980.1549	980.1549	0.0188	0.0180	985.9795
Health Club	532.884	5.7500e-003	0.0522	0.0439	3.1000e-004		3.9700e-003	3.9700e-003		3.9700e-003	3.9700e-003		62.6922	62.6922	1.2000e-003	1.1500e-003	63.0648
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4591.64	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.1934	540.1934	0.0104	9.9000e-003	543.4035
Total		**0.1760**	**1.5070**	**0.6629**	**9.5900e-003**		**0.1216**	**0.1216**		**0.1216**	**0.1216**		**1,919.8338**	**1,919.8338**	**0.0368**	**0.0352**	**1,931.2424**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.06854	0.0223	0.1906	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.3580	243.3580	4.6600e-003	4.4600e-003	244.8041
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	6.01999	0.0649	0.5548	0.2361	3.5400e-003		0.0449	0.0449		0.0449	0.0449		708.2341	708.2341	0.0136	0.0130	712.4428
Health Club	0.319892	3.4500e-003	0.0314	0.0263	1.9000e-004		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003		37.6344	37.6344	7.2000e-004	6.9000e-004	37.8580
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.72354	0.0294	0.2510	0.1068	1.6000e-003		0.0203	0.0203		0.0203	0.0203		320.4162	320.4162	6.1400e-003	5.8700e-003	322.3203
Total		**0.1201**	**1.0278**	**0.4504**	**6.5500e-003**		**0.0829**	**0.0829**		**0.0829**	**0.0829**		**1,309.6427**	**1,309.6427**	**0.0251**	**0.0240**	**1,317.4252**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Unmitigated	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	95.9052	7.5939	186.1300	0.4748		27.9581	27.9581		27.9581	27.9581	3,428.2921	6,588.0000	10,016.2921	10.2238	0.2327	10,341.2289
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**105.9859**	**7.9414**	**216.3003**	**0.4764**		**28.1255**	**28.1255**		**28.1255**	**28.1255**	**3,428.2921**	**6,642.3775**	**10,070.6696**	**10.2759**	**0.2327**	**10,396.9086**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6394	5.4642	2.3252	0.0349		0.4418	0.4418		0.4418	0.4418	0.0000	6,975.5294	6,975.5294	0.1337	0.1279	7,016.9815
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**10.7202**	**5.8117**	**32.4955**	**0.0365**		**0.6092**	**0.6092**		**0.6092**	**0.6092**	**0.0000**	**7,029.9069**	**7,029.9069**	**0.1858**	**0.1279**	**7,072.6611**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bouquet Canyon Project_Unmitigated

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	10.52	1000sqft	0.24	10,522.00	0
City Park	2.65	Acre	2.65	115,434.00	0
Health Club	10.75	1000sqft	0.25	10,746.00	0
Recreational Swimming Pool	9.68	1000sqft	0.22	9,676.00	0
Apartments Mid Rise	78.00	Dwelling Unit	2.05	78,000.00	223
Condo/Townhouse High Rise	227.00	Dwelling Unit	3.55	227,000.00	649
Single Family Housing	61.00	Dwelling Unit	19.81	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	513	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor Source: Southern California Edison, 2018 Sustainability Report, dated May 2019.

Land Use - Per project description.

Construction Phase - Based on applicant assumptions.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Anticipated trenching equipment.

Trips and VMT - Earthwork would be balanced on-site.

Grading -

Vehicle Trips - Per traffic study.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD standards and regulations.

Energy Mitigation - % Improvement based on efficiency of 2019 Title 24 Standards compared to 2016 Title 24 Standards.

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	45.00	187.00
tblConstructionPhase	NumDays	35.00	132.00
tblConstructionPhase	NumDays	440.00	792.00
tblConstructionPhase	NumDays	35.00	396.00
tblGrading	MaterialExported	0.00	2,069,664.00
tblGrading	MaterialImported	0.00	2,069,664.00
tblLandUse	LandUseSquareFeet	10,520.00	10,522.00
tblLandUse	LandUseSquareFeet	10,750.00	10,746.00
tblLandUse	LandUseSquareFeet	9,680.00	9,676.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	513
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblVehicleTrips	ST_TR	6.39	10.77
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	4.31	10.77
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.77
tblVehicleTrips	SU_TR	5.86	10.77
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	3.43	10.77

tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	10.77
tblVehicleTrips	WD_TR	6.65	10.77
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	4.18	10.77
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.4301	185.0236	57.1861	0.2167	18.2675	2.2838	20.4666	9.9840	2.1051	12.0072	0.0000	22,701.0311	22,701.0311	4.6639	0.0000	22,817.6275
2021	6.9916	176.7599	55.0092	0.2150	12.3536	2.0812	14.4349	4.2896	1.9182	6.2078	0.0000	22,540.3245	22,540.3245	4.5303	0.0000	22,653.5830
2022	3.2519	22.3091	28.3148	0.0740	3.7902	0.8468	4.6370	1.0143	0.7964	1.8107	0.0000	7,358.3918	7,358.3918	0.8032	0.0000	7,378.4711
2023	10.2537	21.0511	30.8913	0.0814	4.4720	0.8069	5.2789	1.1952	0.7629	1.9580	0.0000	8,082.1911	8,082.1911	0.8104	0.0000	8,102.4513
2024	10.0597	19.9244	29.9845	0.0802	4.4720	0.7100	5.1820	1.1952	0.6709	1.8661	0.0000	7,963.8698	7,963.8698	0.7967	0.0000	7,983.7875
2025	9.8729	18.7646	29.1025	0.0788	4.4720	0.6141	5.0861	1.1952	0.5802	1.7754	0.0000	7,819.9175	7,819.9175	0.7839	0.0000	7,839.5142
Maximum	**10.2537**	**185.0236**	**57.1861**	**0.2167**	**18.2675**	**2.2838**	**20.4666**	**9.9840**	**2.1051**	**12.0072**	**0.0000**	**22,701.0311**	**22,701.0311**	**4.6639**	**0.0000**	**22,817.6275**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.4301	185.0236	57.1861	0.2167	6.8493	2.2838	9.0484	3.7215	2.1051	5.7447	0.0000	22,701.0311	22,701.0311	4.6639	0.0000	22,817.6275
2021	6.9916	176.7599	55.0092	0.2150	5.0653	2.0812	7.1466	1.7250	1.9182	3.6431	0.0000	22,540.3244	22,540.3244	4.5303	0.0000	22,653.5830
2022	3.2519	22.3091	28.3148	0.0740	2.9499	0.8468	3.7967	0.8081	0.7964	1.6045	0.0000	7,358.3918	7,358.3918	0.8032	0.0000	7,378.4711
2023	10.2537	21.0511	30.8913	0.0814	3.4776	0.8069	4.2845	0.9511	0.7629	1.7139	0.0000	8,082.1911	8,082.1911	0.8104	0.0000	8,102.4513
2024	10.0597	19.9244	29.9845	0.0802	3.4777	0.7100	4.1877	0.9511	0.6709	1.6220	0.0000	7,963.8698	7,963.8698	0.7967	0.0000	7,983.7875
2025	9.8729	18.7646	29.1025	0.0788	3.4777	0.6141	4.0918	0.9511	0.5802	1.5313	0.0000	7,819.9175	7,819.9175	0.7839	0.0000	7,839.5142
Maximum	**10.2537**	**185.0236**	**57.1861**	**0.2167**	**6.8493**	**2.2838**	**9.0484**	**3.7215**	**2.1051**	**5.7447**	**0.0000**	**22,701.0311**	**22,701.0311**	**4.6639**	**0.0000**	**22,817.6275**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.11**	**0.00**	**40.90**	**51.74**	**0.00**	**38.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086
Energy	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424
Mobile	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795
Total	**111.8367**	**35.4079**	**291.8993**	**0.7929**	**28.6363**	**28.4849**	**57.1211**	**7.6619**	**28.4680**	**36.1299**	**3,428.2921**	**39,881.5280**	**43,309.8201**	**11.7912**	**0.2679**	**43,684.4305**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Energy	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
Mobile	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795
Total	**16.5150**	**32.7990**	**107.8819**	**0.3499**	**28.6363**	**0.9299**	**29.5662**	**7.6619**	**0.9130**	**8.5749**	**0.0000**	**39,658.8663**	**39,658.8663**	**1.6894**	**0.1519**	**39,746.3659**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**85.23**	**7.37**	**63.04**	**55.87**	**0.00**	**96.74**	**48.24**	**0.00**	**96.79**	**76.27**	**100.00**	**0.56**	**8.43**	**85.67**	**43.30**	**9.01**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	9/15/2020	5	77	
2	Grading - Earthwork	Grading	9/16/2020	6/3/2021	5	187	
3	Trenching	Trenching	6/4/2021	12/6/2021	5	132	
4	Paving	Paving	12/7/2021	6/8/2022	5	132	
5	Building Construction	Building Construction	6/9/2022	6/20/2025	5	792	
6	Architectural Coating	Architectural Coating	12/15/2023	6/20/2025	5	396	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.24

Residential Indoor: 839,970; Residential Outdoor: 279,990; Non-Residential Indoor: 16,119; Non-Residential Outdoor: 5,373; Striped Parking Area: 631 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading - Earthwork	Excavators	2	8.00	158	0.38
Grading - Earthwork	Graders	1	8.00	187	0.41
Grading - Earthwork	Rubber Tired Dozers	1	8.00	247	0.40
Grading - Earthwork	Scrapers	2	8.00	367	0.48
Grading - Earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Pavers	0		130	0.42
Trenching	Paving Equipment	0		132	0.36
Trenching	Rollers	0		80	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Trenchers	2	8.00	78	0.50
Paving	Air Compressors	0		78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Earthwork	8	20.00	0.00	258,708.00	14.70	6.90	0.50	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	303.00	63.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**6.6936**	**2.1974**	**8.8910**	**3.6793**	**2.0216**	**5.7009**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.1557	1.6800e-003	0.1574	0.0422	1.5500e-003	0.0438		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.1557**	**1.6800e-003**	**0.1574**	**0.0422**	**1.5500e-003**	**0.0438**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

3.3 Grading - Earthwork - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**11.1766**	**2.1739**	**13.3505**	**3.9756**	**2.0000**	**5.9756**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - Earthwork - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8778	134.7536	24.4258	0.1525	1.2866	0.1080	1.3946	0.3365	0.1034	0.4399		16,473.6817	16,473.6817	2.7145		16,541.5432
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1022	0.0725	0.8020	2.2200e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		221.4841	221.4841	6.9800e-003		221.6586
Total	**2.9800**	**134.8261**	**25.2278**	**0.1547**	**1.5101**	**0.1099**	**1.6201**	**0.3958**	**0.1051**	**0.5009**		**16,695.1658**	**16,695.1658**	**2.7214**		**16,763.2018**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**4.1409**	**2.1739**	**6.3148**	**1.4730**	**2.0000**	**3.4729**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - Earthwork - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8778	134.7536	24.4258	0.1525	0.9979	0.1080	1.1059	0.2656	0.1034	0.3690		16,473.6817	16,473.6817	2.7145		16,541.5432
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1022	0.0725	0.8020	2.2200e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486		221.4841	221.4841	6.9800e-003		221.6586
Total	**2.9800**	**134.8261**	**25.2278**	**0.1547**	**1.1709**	**0.1099**	**1.2808**	**0.3125**	**0.1051**	**0.4176**		**16,695.1658**	**16,695.1658**	**2.7214**		**16,763.2018**

3.3 Grading - Earthwork - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.1766	0.0000	11.1766	3.9756	0.0000	3.9756			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**11.1766**	**1.9853**	**13.1620**	**3.9756**	**1.8265**	**5.8021**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - Earthwork - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7050	130.2949	23.3942	0.1509	0.9535	0.0941	1.0476	0.2547	0.0900	0.3447		16,318.8308	16,318.8308	2.5812		16,383.3616
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0954	0.0652	0.7365	2.1500e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		214.4502	214.4502	6.3100e-003		214.6080
Total	**2.8004**	**130.3601**	**24.1308**	**0.1530**	**1.1770**	**0.0959**	**1.2729**	**0.3140**	**0.0917**	**0.4057**		**16,533.2810**	**16,533.2810**	**2.5875**		**16,597.9696**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1409	0.0000	4.1409	1.4730	0.0000	1.4730			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**4.1409**	**1.9853**	**6.1263**	**1.4730**	**1.8265**	**3.2995**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - Earthwork - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7050	130.2949	23.3942	0.1509	0.7514	0.0941	0.8454	0.2051	0.0900	0.2951		16,318.8308	16,318.8308	2.5812		16,383.3616
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0954	0.0652	0.7365	2.1500e-003	0.1730	1.8100e-003	0.1748	0.0469	1.6600e-003	0.0486		214.4502	214.4502	6.3100e-003		214.6080
Total	**2.8004**	**130.3601**	**24.1308**	**0.1530**	**0.9244**	**0.0959**	**1.0203**	**0.2520**	**0.0917**	**0.3437**		**16,533.2810**	**16,533.2810**	**2.5875**		**16,597.9696**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749		1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**		**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

3.4 Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**		**107.2251**	**107.2251**	**3.1600e-003**		**107.3040**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749	0.0000	1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**	**0.0000**	**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

3.4 Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.0865	9.0000e-004	0.0874	0.0234	8.3000e-004	0.0243		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.0865**	**9.0000e-004**	**0.0874**	**0.0234**	**8.3000e-004**	**0.0243**		**107.2251**	**107.2251**	**3.1600e-003**		**107.3040**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2603**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2603**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1298	1.3500e-003	0.1311	0.0352	1.2500e-003	0.0364		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1298**	**1.3500e-003**	**0.1311**	**0.0352**	**1.2500e-003**	**0.0364**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1076**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.7600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1076**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1298	1.3100e-003	0.1311	0.0352	1.2100e-003	0.0364		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1298**	**1.3100e-003**	**0.1311**	**0.0352**	**1.2100e-003**	**0.0364**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1887	5.8010	1.6744	0.0156	0.4033	0.0113	0.4146	0.1161	0.0108	0.1269		1,669.3128	1,669.3128	0.1049		1,671.9356
Worker	1.3570	0.8925	10.2770	0.0315	3.3868	0.0265	3.4133	0.8982	0.0244	0.9226		3,134.7455	3,134.7455	0.0863		3,136.9033
Total	**1.5457**	**6.6935**	**11.9514**	**0.0471**	**3.7902**	**0.0378**	**3.8280**	**1.0143**	**0.0352**	**1.0496**		**4,804.0582**	**4,804.0582**	**0.1912**		**4,808.8389**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1887	5.8010	1.6744	0.0156	0.3286	0.0113	0.3399	0.0978	0.0108	0.1086		1,669.3128	1,669.3128	0.1049		1,671.9356
Worker	1.3570	0.8925	10.2770	0.0315	2.6213	0.0265	2.6478	0.7103	0.0244	0.7347		3,134.7455	3,134.7455	0.0863		3,136.9033
Total	**1.5457**	**6.6935**	**11.9514**	**0.0471**	**2.9499**	**0.0378**	**2.9877**	**0.8081**	**0.0352**	**0.8433**		**4,804.0582**	**4,804.0582**	**0.1912**		**4,808.8389**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1402	4.3935	1.4878	0.0151	0.4034	5.3600e-003	0.4087	0.1161	5.1200e-003	0.1213		1,617.4703	1,617.4703	0.0924		1,619.7792
Worker	1.2784	0.8072	9.4465	0.0303	3.3868	0.0258	3.4126	0.8982	0.0237	0.9219		3,020.0633	3,020.0633	0.0777		3,022.0064
Total	**1.4186**	**5.2007**	**10.9344**	**0.0454**	**3.7902**	**0.0311**	**3.8213**	**1.0143**	**0.0288**	**1.0432**		**4,637.5336**	**4,637.5336**	**0.1701**		**4,641.7855**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1402	4.3935	1.4878	0.0151	0.3286	5.3600e-003	0.3340	0.0978	5.1200e-003	0.1029		1,617.4703	1,617.4703	0.0924		1,619.7792
Worker	1.2784	0.8072	9.4465	0.0303	2.6213	0.0258	2.6470	0.7103	0.0237	0.7340		3,020.0633	3,020.0633	0.0777		3,022.0064
Total	**1.4186**	**5.2007**	**10.9344**	**0.0454**	**2.9499**	**0.0311**	**2.9810**	**0.8081**	**0.0288**	**0.8369**		**4,637.5336**	**4,637.5336**	**0.1701**		**4,641.7855**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1368	4.3778	1.4427	0.0150	0.4034	5.2700e-003	0.4086	0.1161	5.0400e-003	0.1212		1,611.1971	1,611.1971	0.0910		1,613.4710
Worker	1.2131	0.7359	8.7944	0.0294	3.3868	0.0254	3.4122	0.8982	0.0234	0.9216		2,926.3854	2,926.3854	0.0712		2,928.1658
Total	**1.3499**	**5.1137**	**10.2371**	**0.0444**	**3.7902**	**0.0307**	**3.8208**	**1.0143**	**0.0284**	**1.0427**		**4,537.5825**	**4,537.5825**	**0.1622**		**4,541.6368**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1368	4.3778	1.4427	0.0150	0.3287	5.2700e-003	0.3339	0.0978	5.0400e-003	0.1028		1,611.1971	1,611.1971	0.0910		1,613.4710
Worker	1.2131	0.7359	8.7944	0.0294	2.6213	0.0254	2.6467	0.7103	0.0234	0.7337		2,926.3854	2,926.3854	0.0712		2,928.1658
Total	**1.3499**	**5.1137**	**10.2371**	**0.0444**	**2.9499**	**0.0307**	**2.9806**	**0.8081**	**0.0284**	**0.8365**		**4,537.5825**	**4,537.5825**	**0.1622**		**4,541.6368**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.3407	1.4059	0.0149	0.4034	5.1700e-003	0.4085	0.1161	4.9400e-003	0.1211		1,602.5578	1,602.5578	0.0896		1,604.7975
Worker	1.1555	0.6732	8.1601	0.0282	3.3868	0.0249	3.4117	0.8982	0.0229	0.9211		2,813.1030	2,813.1030	0.0649		2,814.7257
Total	**1.2888**	**5.0139**	**9.5659**	**0.0432**	**3.7902**	**0.0300**	**3.8202**	**1.0143**	**0.0278**	**1.0422**		**4,415.6608**	**4,415.6608**	**0.1545**		**4,419.5233**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.3407	1.4059	0.0149	0.3287	5.1700e-003	0.3338	0.0978	4.9400e-003	0.1027		1,602.5578	1,602.5578	0.0896		1,604.7975
Worker	1.1555	0.6732	8.1601	0.0282	2.6213	0.0249	2.6461	0.7103	0.0229	0.7332		2,813.1030	2,813.1030	0.0649		2,814.7257
Total	**1.2888**	**5.0139**	**9.5659**	**0.0432**	**2.9499**	**0.0300**	**2.9800**	**0.8081**	**0.0278**	**0.8359**		**4,415.6608**	**4,415.6608**	**0.1545**		**4,419.5233**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2574	0.1625	1.9018	6.1000e-003	0.6818	5.1900e-003	0.6870	0.1808	4.7700e-003	0.1856		607.9996	607.9996	0.0157		608.3907
Total	**0.2574**	**0.1625**	**1.9018**	**6.1000e-003**	**0.6818**	**5.1900e-003**	**0.6870**	**0.1808**	**4.7700e-003**	**0.1856**		**607.9996**	**607.9996**	**0.0157**		**608.3907**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.0049**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2574	0.1625	1.9018	6.1000e-003	0.5277	5.1900e-003	0.5329	0.1430	4.7700e-003	0.1478		607.9996	607.9996	0.0157		608.3907
Total	**0.2574**	**0.1625**	**1.9018**	**6.1000e-003**	**0.5277**	**5.1900e-003**	**0.5329**	**0.1430**	**4.7700e-003**	**0.1478**		**607.9996**	**607.9996**	**0.0157**		**608.3907**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2442	0.1482	1.7705	5.9100e-003	0.6818	5.1100e-003	0.6870	0.1808	4.7100e-003	0.1855		589.1403	589.1403	0.0143		589.4987
Total	**0.2442**	**0.1482**	**1.7705**	**5.9100e-003**	**0.6818**	**5.1100e-003**	**0.6870**	**0.1808**	**4.7100e-003**	**0.1855**		**589.1403**	**589.1403**	**0.0143**		**589.4987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**6.9940**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2442	0.1482	1.7705	5.9100e-003	0.5277	5.1100e-003	0.5328	0.1430	4.7100e-003	0.1477		589.1403	589.1403	0.0143		589.4987
Total	**0.2442**	**0.1482**	**1.7705**	**5.9100e-003**	**0.5277**	**5.1100e-003**	**0.5328**	**0.1430**	**4.7100e-003**	**0.1477**		**589.1403**	**589.1403**	**0.0143**		**589.4987**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2326	0.1355	1.6428	5.6800e-003	0.6818	5.0000e-003	0.6868	0.1808	4.6100e-003	0.1854		566.3343	566.3343	0.0131		566.6610
Total	**0.2326**	**0.1355**	**1.6428**	**5.6800e-003**	**0.6818**	**5.0000e-003**	**0.6868**	**0.1808**	**4.6100e-003**	**0.1854**		**566.3343**	**566.3343**	**0.0131**		**566.6610**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.8133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.9841**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2326	0.1355	1.6428	5.6800e-003	0.5277	5.0000e-003	0.5327	0.1430	4.6100e-003	0.1476		566.3343	566.3343	0.0131		566.6610
Total	**0.2326**	**0.1355**	**1.6428**	**5.6800e-003**	**0.5277**	**5.0000e-003**	**0.5327**	**0.1430**	**4.6100e-003**	**0.1476**		**566.3343**	**566.3343**	**0.0131**		**566.6610**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795
Unmitigated	5.6748	25.9595	74.9361	0.3068	28.6363	0.2378	28.8740	7.6619	0.2209	7.8828		31,319.3167	31,319.3167	1.4785		31,356.2795

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	840.06	840.06	840.06	2,870,613	2,870,613
City Park	0.00	0.00	0.00		
Condo/Townhouse High Rise	2,444.79	2,444.79	2444.79	8,354,219	8,354,219
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	656.97	656.97	656.97	2,244,966	2,244,966
Total	3,941.82	3,941.82	3,941.82	13,469,798	13,469,798

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse High Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
City Park	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Condo/Townhouse High Rise	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Health Club	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Parking Lot	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Recreational Swimming Pool	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841
Single Family Housing	0.544880	0.044491	0.207704	0.117752	0.014693	0.006272	0.020732	0.032141	0.002572	0.001984	0.005239	0.000700	0.000841

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Bouquet Canyon Project_Unmitigated - Los Angeles-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1201	1.0278	0.4504	6.5500e-003		0.0829	0.0829		0.0829	0.0829		1,309.6427	1,309.6427	0.0251	0.0240	1,317.4252
NaturalGas Unmitigated	0.1760	1.5070	0.6629	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,919.8338	1,919.8338	0.0368	0.0352	1,931.2424

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2862.74	0.0309	0.2638	0.1123	1.6800e-003		0.0213	0.0213		0.0213	0.0213		336.7933	336.7933	6.4600e-003	6.1700e-003	338.7947
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	8331.32	0.0899	0.7678	0.3267	4.9000e-003		0.0621	0.0621		0.0621	0.0621		980.1549	980.1549	0.0188	0.0180	985.9795
Health Club	532.884	5.7500e-003	0.0522	0.0439	3.1000e-004		3.9700e-003	3.9700e-003		3.9700e-003	3.9700e-003		62.6922	62.6922	1.2000e-003	1.1500e-003	63.0648
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4591.64	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.1934	540.1934	0.0104	9.9000e-003	543.4035
Total		**0.1760**	**1.5070**	**0.6629**	**9.5900e-003**		**0.1216**	**0.1216**		**0.1216**	**0.1216**		**1,919.8338**	**1,919.8338**	**0.0368**	**0.0352**	**1,931.2424**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.06854	0.0223	0.1906	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.3580	243.3580	4.6600e-003	4.4600e-003	244.8041
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse High Rise	6.01999	0.0649	0.5548	0.2361	3.5400e-003		0.0449	0.0449		0.0449	0.0449		708.2341	708.2341	0.0136	0.0130	712.4428
Health Club	0.319892	3.4500e-003	0.0314	0.0263	1.9000e-004		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003		37.6344	37.6344	7.2000e-004	6.9000e-004	37.8580
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.72354	0.0294	0.2510	0.1068	1.6000e-003		0.0203	0.0203		0.0203	0.0203		320.4162	320.4162	6.1400e-003	5.8700e-003	322.3203
Total		**0.1201**	**1.0278**	**0.4504**	**6.5500e-003**		**0.0829**	**0.0829**		**0.0829**	**0.0829**		**1,309.6427**	**1,309.6427**	**0.0251**	**0.0240**	**1,317.4252**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.7202	5.8117	32.4955	0.0365		0.6092	0.6092		0.6092	0.6092	0.0000	7,029.9069	7,029.9069	0.1858	0.1279	7,072.6611
Unmitigated	105.9859	7.9414	216.3003	0.4764		28.1255	28.1255		28.1255	28.1255	3,428.2921	6,642.3775	10,070.6696	10.2759	0.2327	10,396.9086

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	95.9052	7.5939	186.1300	0.4748		27.9581	27.9581		27.9581	27.9581	3,428.2921	6,588.0000	10,016.2921	10.2238	0.2327	10,341.2289
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**105.9859**	**7.9414**	**216.3003**	**0.4764**		**28.1255**	**28.1255**		**28.1255**	**28.1255**	**3,428.2921**	**6,642.3775**	**10,070.6696**	**10.2759**	**0.2327**	**10,396.9086**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.4355					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6394	5.4642	2.3252	0.0349		0.4418	0.4418		0.4418	0.4418	0.0000	6,975.5294	6,975.5294	0.1337	0.1279	7,016.9815
Landscaping	0.9061	0.3475	30.1703	1.5900e-003		0.1674	0.1674		0.1674	0.1674		54.3775	54.3775	0.0521		55.6796
Total	**10.7202**	**5.8117**	**32.4955**	**0.0365**		**0.6092**	**0.6092**		**0.6092**	**0.6092**	**0.0000**	**7,029.9069**	**7,029.9069**	**0.1858**	**0.1279**	**7,072.6611**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B:
Air Quality, Energy, and Greenhouse Gas Modeling Worksheets

Part 2: Energy Modeling Worksheets

Bouquet Canyon Project

Land Use	Natural Gas Use (kBTU/yr)	Electricity Use (kWh/yr)	Electricity Use (MWh/yr)
Apartments Mid Rise	755018	315757	316
City Park	0	0	0
Condo/Townhouse high rise	2,197,300	977,877	978
Health club	116,761	119,281	119
Parking lot	-	3,683	4
Recreational swimming pool	-	-	0
Single family housing	994,091	500,706	501
Total kBTU	**4,063,170**	**1,917,304**	1,917
Total Therms	40,632	1917	

1 kBTU = 0.01 therms

Energy Type	Project Annual Energy Consumption	Los Angeles County Annual Energy	Percentage Increase Countywide
Electricity	1,917	67,569,000	0.0028%
Natural Gas	40,632	2,956,000,000	0.0014%

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

Vehicle Type	Percent of Vehicle Trips[1]	Daily Trips[2]	Annual Vehicle Miles Traveled[3]	Average Fuel Economy (miles per gallon)[4]	Total Annual Fuel Consumption (gallons)[5]
Passenger Cars	0.62	--	8366347.46	22	380,289
Light/Medium Trucks	0.31	--	4160699.37	17.3	240,503
Heavy Trucks/Other	0.07	--	942751.16	6.4	147,305
TOTAL [6]	***1.00***	--	***13,469,798***	**--**	***768,096***

Notes:

1. Percent of Vehicle Trip distribution based on trip characteristics within the CalEEMod model.

2. Daily Trips calculated by multiplying the total daily trips by percent vehicle trips (i.e., Daily Trips x percent of Vehicle Trips).

3. Daily Vehicle Miles Traveled (VMT) calculated by multiplying percent vehicle trips by total VMT (i.e., VMT x percent of Vehicle Trips).

4. Average fuel economy derived from the Department of Transportation.

5. Total Daily Fuel Consumption calculated by dividing the daily VMT by the average fuel economy (i.e., VMT/Average Fuel Economy).

6. Values may be slightly off due to rounding.

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate (gallons per hour)	Duration (total hours/day)	# days	Total Fuel Consumption (gallons)
Site Preparation	Rubber Tired Dozers	3	8	247	0.40	3.952	24	77	7303.296
	Tractors/Loaders/Backhoes	4	8	97	0.37	1.4356	32	77	3537.3184
Grading - Earthwork	Excavators	2	8.00	158	0.38	2.4016	16	187	7185.5872
	Graders	1	8.00	187	0.41	3.0668	8	187	4587.9328
	Rubber Tired Dozers	1	8.00	247	0.40	3.952	8	187	5912.192
	Scrapers	2	8.00	367	0.48	7.0464	16	187	21082.8288
	Tractors/Loaders/Backhoes	2	8.00	97	0.37	1.4356	16	187	4295.3152
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37	1.4356	16	132	3031.9872
	Trenchers	2	8.00	78	0.50	1.56	16	132	3294.72
Paving	Pavers	2	8.00	130	0.42	2.184	16	132	4612.608
	Paving Equipment	2	8.00	132	0.36	1.9008	16	132	4014.4896
	Rollers	2	8.00	80	0.38	1.216	16	132	2568.192
Building Construction	Cranes	1	7.00	231	0.29	2.6796	7	792	14855.7024
	Forklifts	3	8.00	89	0.20	0.712	24	792	13533.696
	Generator Sets	1	8.00	84	0.74	2.4864	8	792	15753.8304
	Tractors/Loaders/Backhoes	3	7.00	97	0.37	1.4356	21	792	23876.8992
	Welders	1	8.00	46	0.45	0.828	8	792	5246.208
Architectural Coating	Air Compressors	1	6.00	78	0.48	1.4976	6	396	3558.2976
								Total:	**164,058**

Notes:

Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor

Where:

Fuel Consumption Factor for a diesel engine is 0.04 gallons per horsepower per hour (gal/hp/hr) and a gasoline engine is 0.06 gal/hp/hr.

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

Worker Trips						
Phase	**Phase Length (# days)**	**# Worker Trips**	**Worker Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)**	**Total Fuel Consumption**
Site Preparation	77	18	14.7	264.6	**24.90284233**	10.62529315
Grading - Earthwork	187	20	14.7	294		11.80588128
Trenching	132	10	14.7	147		5.902940639
Paving	132	15	14.7	220.5		8.854410959
Building Construction	792	303	14.7	4454.1		178.8591014
Architectural Coating	396	61	14.7	896.7		36.0079379
						252.0555653

VENDOR TRIPS						
Phase	**Phase Length (# days)**	**# Vendor Trips**	**Vendor Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)**	**Total Fuel Consumption**
Site Preparation	77	0	6.9	0	**8.343886151**	0
Grading - Earthwork	187	0	6.9	0		0
Trenching	132	0	6.9	0		0
Paving	132	0	6.9	0		0
Building Construction	792	63	6.9	434.7		52.09802628
Architectural Coating	396	0	6.9	0		0
						52.09802628

HAULING TRIPS						
Phase	**Phase Length (# days)**	**# Hauling Trips**	**Hauling Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)[1]**	**Total Fuel Consumption**
Site Preparation	77	0	20	0	**8.343886151**	0
Grading - Earthwork	187	258708	0.5	129354		15502.84815
Trenching	132	0	20	0		0
Paving	132	0	20	0		0
Building Construction	792	0	20	0		0
Architectural Coating	396	0	20	0		0
						15502.84815

TOTAL OFF-SITE MOBILE GALLONS CONSUMED DURING CONSTRUCTION	**15,807.00**

Notes:

1. The project would be required to use Medium Duty trucks for all soil hauling.

Appendix C:
Biological Technical Report

HELIX Environmental Planning

Bouquet Canyon Project (Tentative Tract No. 82126)

Biological Technical Report

August 26, 2019 | IPQ-25

Prepared for:

Integral Communities
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

Prepared by:

HELIX Environmental Planning, Inc.
16485 Laguna Canyon Road, Suite 150
Irvine, CA 92618

Bouquet Canyon Project (Tentative Tract No. 82126)

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August 26, 2019 | IPQ-25

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ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
BMPs	Best Management Practices
BUOW	Burrowing Owl
CAGN	Coastal California Gnatcatcher
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
City	City of Santa Clarita
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of Los Angeles
CRPR	California Rare Plant Rank
CWA	Clean Water Act
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
G	Global
GPS	Global Positioning System
HELIX	HELIX Environmental Planning, Inc.
ISA	International Society of Arboriculture
MBTA	Migratory Bird Treaty Act
MCV	A Manual of California Vegetation
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	Bouquet Canyon
RPW	Relatively Permanent Water Body
RWQCB	Regional Water Quality Control Board
S	State
SFP	State Fully Protected
SMEA	San Marino Environmental Associates

SSC	Species of Special Concern
TNW	Traditional Navigable Waters
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTS	Unarmored Threespine Stickleback
WUS	Waters of the U.S.

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EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) completed this biological technical report for the Bouquet Canyon Project (project), which is proposed by Integral Communities in the City of Santa Clarita (City), Los Angeles County, California. Integral Communities is proposing a residential development and road improvements to Bouquet Canyon Road on an approximately 94-acre study area. The study area is generally located 5.5 miles to the northeast of Interstate 5 and 3.8 miles to the northwest of California State Route 14.

The study area is located in the foothills of the Sierra Pelona Mountains. The topography in the southern and western portions of the study area is predominantly steep hillsides, while the northern portion is primarily flat. Bouquet Canyon Creek flows from east to west in the northern portion of the study area. The steep hills throughout the southern and western portions of the site are predominated by Riversidean upland sage scrub while the flatter portions of the study area are dominated by non-native grassland. HELIX conducted a general biological survey (including vegetation mapping and a general habitat assessment) and a jurisdictional assessment in 2017. Focused surveys for rare plant species, burrowing owl (*Athene cunicularia*; BUOW), and coastal California gnatcatcher (*Polioptila californica californica*; CAGN) surveys and an oak tree survey were conducted in 2018.

A total of 20 vegetation communities were mapped on the study area. Native communities totaled 29.19 acres, which included big sagebrush scrub, chamise chaparral/non-native grassland, elderberry savanna, Riversidean upland sage scrub, Riversidean upland sage scrub/non-native grassland, scrub oak chaparral, scrub oak chaparral/non-native grassland, southern north slope chaparral, and southern willow scrub/giant reed stand. Elderberry savanna and southern riparian scrub/giant reed stand are considered sensitive communities pursuant to the California Department of Fish and Wildlife (CDFW). A total of 496 slender mariposa lilies (*Calochortus clavatus* var. *gracilis*) were observed throughout the north-facing slopes in the eastern and southern portions of the study area during the rare plant surveys. Eight sensitive animal species were determined to have a potential occur on the study area, including three species with a low potential (California glossy snake [*Arizona elegans occidentalis*], Townsend's big-eared bat [*Corynorhinus townsendii*; foraging only], and southern grasshopper mouse [*Onychomys torridus ramona*]), one species with a moderate potential (California legless lizard [*Anniella* sp.]), four species with a high potential (coastal whiptail [*Aspidoscelis tigris stejnegeri*], coast horned lizard [*Phrynosoma blainvillii*], loggerhead shrike [*Lanius ludovicianus*], and San Diego black-tailed jackrabbit [*Lepus californicus bennettii*]). Two sensitive animal species are presumed absent due to negative focused surveys (BUOW and CAGN). Bouquet Canyon Creek is an ephemeral stream that runs east to west through the northern portion of the study area and is dominated by the invasive grass species giant reed (*Arundo donax*). The study are supports a total of 0.65 acre of U.S. Army Corps of Engineers (USACE)/Regional Water Quality Control Board (RWQCB) waters of the U.S. (WUS) and 9.80 acres of CDFW jurisdictional streambed and associated vegetation. A total of 64 oak trees meet the City's definition of a protected tree, including two coast live oaks (*Quercus agrifolia*), six scrub oaks (*Quercus berberidifolia*), two blue oaks (*Quercus douglasii*), and 54 Tucker oaks (*Quercus john-tuckeri*). The study area is not considered a regional wildlife corridor.

Potential significant impacts were identified for rare plants, BUOW (if present during the take avoidance survey), jurisdictional resources, nesting bird species, and City-protected oak trees. Permanent impacts are proposed to approximately 462 slender mariposa lilies and 28.68 acres of native-dominated vegetation. The project would permanently impact 0.19 acre and temporarily impact 0.46 acre of non-

wetland USACE/RWQCB WUS. The project would also permanently impact 9.33 acres and temporarily impact 0.47 acre of CDFW jurisdictional streambed and associated vegetation (mostly invasive giant reed). Following construction, the majority of the central channel within CDFW jurisdiction will be returned to pre-project topographic contours. The project would permanently remove 26 City-protected oak trees. The proposed project would not impact wildlife corridors or conflict with regional conservation plans.

Measures related to the following topics are proposed herein to fully mitigate potential impacts of the project: rare plants, BUOW, jurisdictional resources, nesting birds, and City-protected oak trees. Successful implementation of these measures would mitigate potential impacts to below a level of significance.

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report provides the City of Santa Clarita (City; California Environmental Quality Act [CEQA] lead agency), resource agencies, and the public with current biological data to satisfy review of the proposed Bouquet Canyon Project (Tentative Tract No. 82126; project) located in the City of Santa Clarita, Los Angeles County, California. The purpose of this report is to document the existing biological conditions on and in the immediate vicinity of the project and provide an analysis of potential impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for project review under CEQA by the lead agency.

1.2 PROJECT LOCATION

The proposed project is located within an approximately 93.47-acre study area in the Saugus Community in the northern portion of the City. The study area is generally located 5.5 miles to the northeast of Interstate 5 and 3.8 miles to the northwest of California State Route 14 (Figure 1, *Regional Location*). The study area is within Section 6 of Township 4 North, Range 15 West of the Mint Canyon U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 2, *USGS Topography*). Specifically, the study area is located directly south of the intersection of David Way and Bouquet Canyon Road (Figure 3, *Aerial Photograph*).

1.3 PROJECT DESCRIPTION

The proposed project is a residential development that would consist of a gated community comprising several neighborhoods and common area amenities (Figure 4, *Proposed Project*). The development would consist of private residences and would include a combination of detached single-family lots, auto court detached bungalow units, attached row townhomes, and attached motor court condominiums. The project would also require some slope stabilization in addition to implementing fuel modification zones in accordance with the County of Los Angeles (County) Fire Department regulations (County of Los Angeles 2017). A flood control channel would be constructed to south of existing Bouquet Canyon Creek. Downstream flows within Bouquet Canyon Creek would feed into the flood control channel, which would ultimately tie into the existing concrete-lined portion of Bouquet Canyon Creek to the northwest of the proposed project.

The project would construct a new alignment of Bouquet Canyon Road, which would improve a heavily-traveled route that connects to Copper Hill Drive and the northern portion of the City. The new road alignment would be constructed approximately 1,500 feet north of Plum Canyon Road on the south end to a connection point at the existing Bouquet Canyon Road approximately 700 feet south of Shadow Valley Lane. Construction of the new Bouquet Canyon alignment would implement a portion of the City's General Plan Circulation Element (City of Santa Clarita [City] 2011). The new alignment would include widened lane and shoulder areas, a full-width bridge over Bouquet Canyon Creek, pedestrian walkways, and a multi-use trail accessible to both existing neighborhoods and the proposed development.

2.0 METHODS

Project evaluation included a review of project plans; a literature review of biological resources occurring on the study area and surrounding vicinity; a general biological survey, including vegetation mapping and a general habitat assessment; focused surveys for rare plant species, burrowing owl (*Athene cunicularia*; BUOW), and coastal California gnatcatcher (*Polioptila californica californica*; CAGN); an oak tree (*Quercus* spp.) survey; and a jurisdictional assessment. The methods used to evaluate the biological resources present on the study area are discussed in this section.

2.1 NOMENCLATURE

Nomenclature for this report follows Baldwin et al. (2012) for plants. Plant communities were classified in accordance with Holland (1986) and Oberbauer (1996), with additional vegetation community information taken from Manual of California Vegetation, Second Edition (MCV; Sawyer et al. 2009). Animal nomenclature follows Emmel and Emmel (1973) for butterflies, Center for North American Herpetology (Taggart 2016) for reptiles and amphibians, American Ornithologists' Union (2018) for birds, and Baker et al. (2003) for mammals. Rare plant and sensitive animal statuses are from the Inventory of Rare and Endangered Plants of California (California Native Plant Society [CNPS] 2017, 2018) and the California Natural Diversity Database (CNDDB; California Department of Fish and Wildlife [CDFW] 2017, 2018a). Rare plant species' habitats and flowering periods are from the Jepson Manual (Baldwin et al. 2012), the Inventory of Rare and Endangered Plants of California (CNPS 2018), and California Natural Diversity Database (CDFW 2018a). Soil classifications were obtained from the Web Soil Survey (Natural Resources Conservation Service [NRCS] 2017).

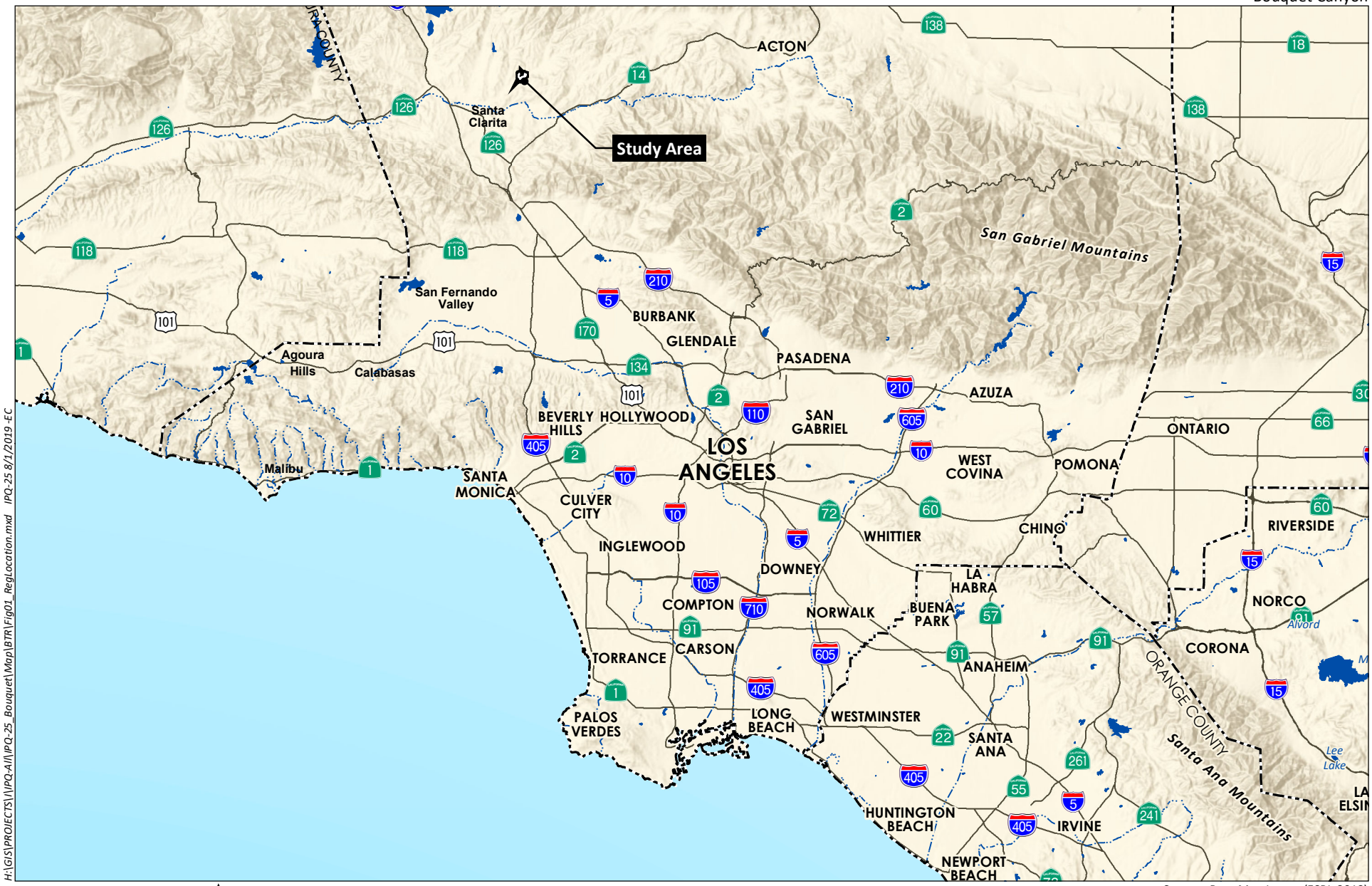
2.2 LITERATURE REVIEW

Prior to conducting the site visit, HELIX Environmental Planning, Inc. (HELIX) reviewed regional planning documents, Google Earth aerials (2017), Web Soil Survey (NRCS 2017), and sensitive species database records, including the Inventory of Rare and Endangered Plants of California (CNPS 2017, 2018), CNDDB (CDFW 2017, 2018a), and critical habitat maps for endangered and threatened species (U.S. Fish and Wildlife Service [USFWS] 2017a). A nine-quadrangle database search was conducted on CNDDB and CNPS, which included the following quadrangles: Agua Dulce, Green Valley, Mint Canyon, Newhall, Oat Mountain, San Fernando, Sleepy Valley, Sunland, and Warm Springs Mountain.

2.3 FIELD SURVEYS

Field surveys were conducted to document the existing condition of the study area and surrounding lands. A general biological survey and habitat assessment were conducted on the study area to map existing vegetation communities and to determine habitat suitability for sensitive plant and animal species. A list of plant and animal species observed and/or detected during the field surveys are provided as Appendix A, *Plant Species Observed* and Appendix B, *Animal Species Observed and/or Detected*. Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the list of animal species identified is not necessarily a comprehensive account of all species that use the study area as species that are nocturnal, secretive, or seasonally restricted may not have been observed. Focused surveys for rare plant species, oak trees, BUOW, and CAGN were conducted. A jurisdictional assessment was also conducted to determine the

Bouquet Canyon



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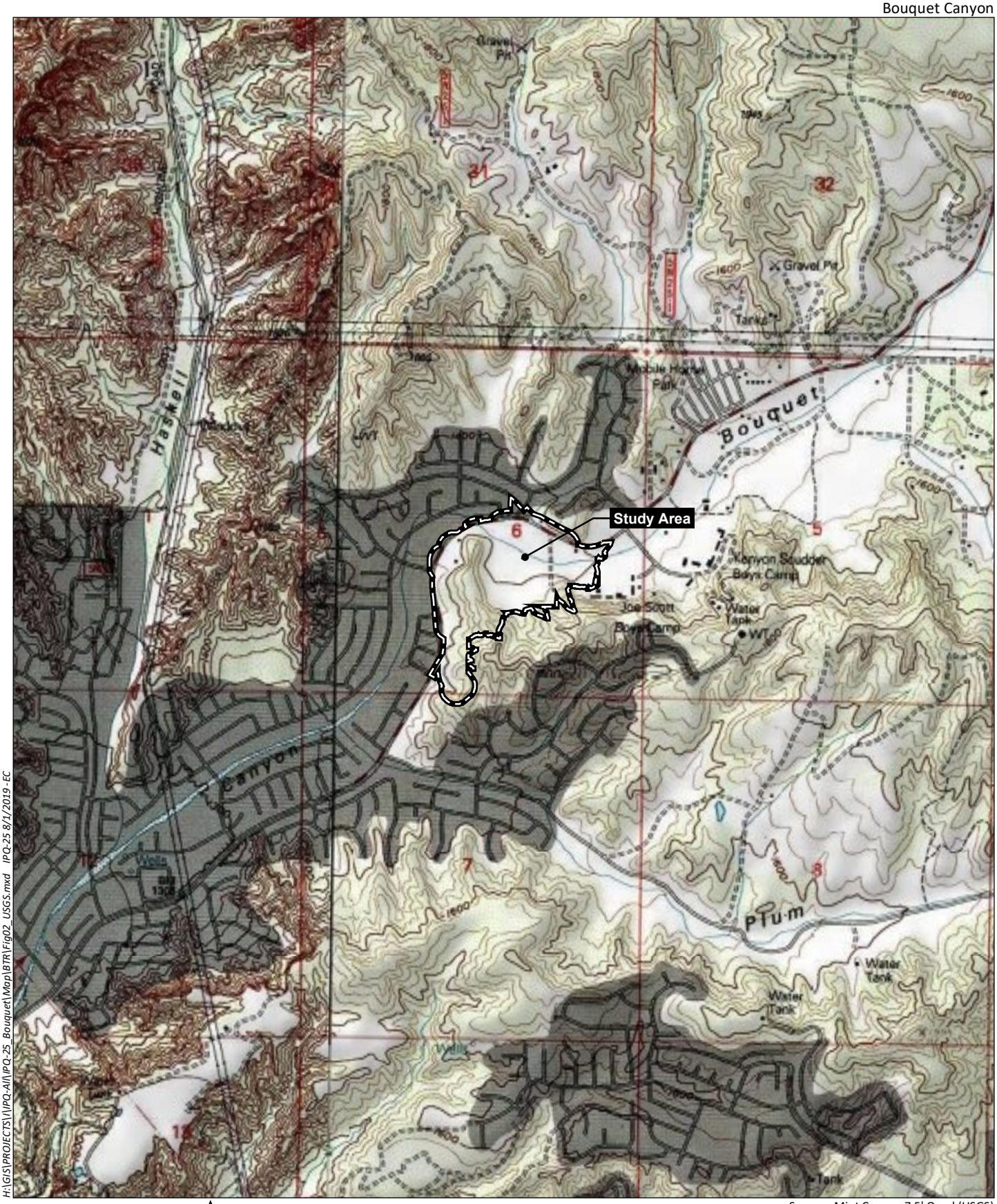
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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0 2,000 Feet

Source: Mint Canyon 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

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0 500 Feet

Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Aerial Photograph

Figure 3

BOUQUET CANYON

SANTA CLARITA | CALIFORNIA

DATE 01 | 29 | 19

INTEGRAL Communities
A DIVERSIFIED REAL ESTATE COMPANY

1"=100'- 0" SCALE
0 100 200
NORTH

CONCEPTUAL SITE PLAN

H:\GIS\PROJECTS\VPQ_Bouquet\Map\BTR\Fig4_PropProject.indd_ FEI-01 3/25/19 -EC

Source:Urban Arena, 2019

HELIX Environmental Planning

Proposed Project

Figure 4

existing jurisdictional limits regulated by the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW.

2.3.1 General Biological Survey

HELIX Biologist and Regulatory Specialist Ezekiel Cooley and Biologist Lauren Singleton conducted a general biological survey of the study area on June 13, 2017. Vegetation communities were classified and mapped in accordance with Holland (1986) and Oberbauer (1996). Vegetation was mapped on a 125-foot (1 inch = 125 feet) aerial photograph of the site. Vegetation communities were mapped by HELIX to one-hundredth of an acre (0.01 acre). The entire site was surveyed on foot with the aid of binoculars. Representative photographs of the site were taken, with select photographs included in this report as Appendix C, *Representative Site Photographs*. Plant and animal species observed or otherwise detected were recorded in field notebooks. Animal identifications were made in the field by direct, visual observation or indirectly by detection of calls, burrows, tracks, or scat. Plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs.

2.3.2 Rare Plant Species Surveys

Rare plants investigated include those that are listed as threatened or endangered by USFWS or CDFW and those afforded a California Rare Plant Rank (CRPR) of 1 through 3 by CNPS.

Mr. Cooley, Ms. Singleton, and HELIX Biologist Daniel Torres conducted spring rare plant surveys on May 15, 2018 and May 9, 2019, and a summer rare plant survey on August 8, 2018. The surveys were conducted in accordance with published agency guidelines (CDFW 2009, 2000; USFWS 2000) and during the appropriate flowering period to maximize the detection of those rare plant species with the potential occur on the study area. Survey methods incorporated a combination of meandering transects and focused searches in areas with the greatest potential to support rare plant species with the potential to occur on the study area. If observed, individual rare plants were mapped using a handheld Global Positioning System (GPS) unit. HELIX also recorded any rare plant species incidentally encountered during other field surveys.

2.3.3 Burrowing Owl

A habitat assessment was conducted on the study area by Ms. Singleton and Mr. Torres on March 27, 2018, to identify areas with potential BUOW habitat and eliminate those that did not contain habitat suitable to support the species. A focused burrow survey was conducted concurrently with the habitat assessment. All suitable burrows (i.e., greater than approximately four inches [11 cm] in height and width and greater than approximately 59 inches [50 cm] in depth) and burrow surrogates were recorded using a handheld GPS unit. The assessment was conducted on the study area and included an approximately 500-foot (150-m) buffer zone around the periphery of the study area. The study area was determined to support suitable BUOW habitat and burrows; therefore, a focused survey was conducted as described below.

A focused survey for BUOW was conducted between April 13 and June 26, 2018, by Mr. Cooley. The survey consisted of four breeding season (February 1 through August 31) surveys that were performed in accordance with the current CDFW survey guidelines (California Department of Fish and Game [CDFG] 2012). The surveys were spaced at least three weeks apart, with at least one survey conducted between February 15 and April 15 and one survey conducted between June 15 and July 15. Biologists visually

searching for BUOW sign and individuals with the aid of binoculars by slowly walking meandering transects spaced no more than 65 feet (20 meters) apart through areas of potential habitat. Fence posts, rocks, and other possible perching locations as well as mammal burrows (especially those of California ground squirrel [*Otospermophilus beecheyi*]) potentially suitable for use by BUOW were inspected. Burrows were searched for sign of recent BUOW occupation, including pellets with regurgitated fur, bones, and insect parts; white wash (excrement); tracks; and feathers. If observed, BUOW sign and/or individuals were recorded with a handheld GPS unit. The findings for the BUOW survey are included as Appendix D, *Burrowing Owl Focused Survey Report*.

2.3.4 Coastal California Gnatcatcher

A focused survey for CAGN was conducted between March 15 and June 30 by HELIX Biologist Tara Baxter (TE 87004B-0) in accordance with the current USFWS protocols (USFWS 1997). The survey consisted of six breeding season (February 15 through August 30) surveys conducted at least one week apart between March 15 and June 30. The CAGN survey area encompassed suitable habitat and a 100-foot buffer area. The CAGN survey area totaled approximately 33 acres of potential CAGN habitat within the survey area, which comprised big sagebrush scrub, Riversidean upland sage scrub, Riversidean upland sage scrub/non-native grassland, and adjacent habitat.

The surveys were conducted by walking within and along the perimeter of suitable CAGN habitat. The survey route was arranged to ensure complete survey coverage of habitat with potential for occupancy by CAGN. Surveys were conducted with binoculars to aid in bird detection. Recorded CAGN vocalizations were played sparingly and only if other means of detection had failed. If a CAGN was detected before playing recorded vocalizations, the recordings were not played. Once CAGNs were initially detected in an area, use of playback was discontinued. The CAGN survey findings are documented in a separate letter report included as Appendix E, *Coastal California Gnatcatcher Focused Survey Report*.

2.3.5 Jurisdictional Assessment

Prior to beginning fieldwork, aerial photographs (1 inch = 75 feet), topographic maps (1 inch = 75 feet), USGS quadrangle maps, and National Wetlands Inventory maps (USFWS 2017b) were reviewed to assist in determining the location of potential jurisdictional waters on the study area. Mr. Cooley and HELIX Principal Regulatory Specialist Amir Morales conducted the jurisdictional assessment field work on July 6, 2017. The assessment was conducted to identify and jurisdictional waters potentially subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), RWQCB jurisdiction pursuant to Section 401 of the CWA, and streambed habitats potentially subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of the California Fish and Game (CFG) Code. Data collection was targeted in areas that were deemed to have the potential to support jurisdictional resources, such as the presence of an ordinary high water mark (OHWM), the presence of a bed/bank and streambed associated vegetation and/or other surface indications of streambed hydrology. Representative photographs were taken of the drainage features and are included as Appendix F, *Representative Drainage Photographs*. The findings of the jurisdictional assessment are included as Appendix G, *Jurisdictional Delineation Report*).

2.3.5.1 U.S. Army Corps of Engineers and Regional Water Quality Control Board Jurisdiction

The USACE waters of the U.S. (WUS) were determined using current USACE guidelines (Environmental Laboratory 1987, USACE 2008a). Areas were determined to be WUS if there was evidence of regular

surface flow (e.g., bed and bank). Jurisdictional limits for these areas were measured according to the presence of a discernible OHWM, which is defined in 33 Code of Federal Regulations Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; USACE 2008b), which also was considered in this jurisdictional assessment.

The jurisdictional delineation was conducted in accordance with court decisions (i.e., Rapanos v. United States, Carabell v. United States, and Solid Waste Agency of Northern Cook County v. USACE), as outlined and applied by the USACE (USACE 2007; Grumbles and Woodley 2007); the USACE and U.S. Environmental Protection Agency (EPA; 2007), and the 2015 Clean Water Rule (USACE 2015). These publications explain that the EPA and USACE will assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNWs that are a relatively permanent water body (RPW), which has year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation is used to determine if the non-RPW is jurisdictional. As an alternative to the significant nexus evaluation process, a preliminary jurisdictional delineation may be submitted to the USACE. The preliminary jurisdictional delineation treats all waters and wetlands on a site as if they are jurisdictional WUS (USACE 2008a). A significant nexus evaluation or preliminary jurisdictional delineation are typically only required for projects that propose impacts to potentially jurisdictional features and, therefore, require a Section 404 permit from the USACE.

The RWQCB asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the State pursuant to Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act. Potential RWQCB jurisdiction found within the study area follows the boundaries of potential USACE jurisdiction for WUS. There are no areas supporting isolated waters of the State subject to exclusive RWQCB jurisdiction pursuant to the State Porter-Cologne Water Quality Control Act.

2.3.5.2 California Department of Fish and Wildlife Jurisdiction

The CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow, if present. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses with surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub). Jurisdictional limits for CDFW streambeds were defined by the top of bank. Vegetated CDFW habitats were mapped at the limits of streambed-associated vegetation, if present.

2.3.6 Oak Tree Survey

An oak tree survey was conducted by Mr. Cooley and Mr. Torres (International Society of Arboriculture [ISA] WE-12249) on December 19 and 20, 2018 to identify oak trees that are protected under the City's Oak Tree Preservation ordinance (Title 17, Chapter 51, Section 40; City of Santa Clarita [City] 1990). Under these guidelines, all oak trees in the genus *Quercus* at least six inches in circumference measured at 4.5 feet above the natural grade are protected by the City. Heritage oak trees are given special consideration and may be fully protected or subject to requirements stricter than those of a standard

protected oak tree. A heritage oak tree is defined as any oak tree measuring 108 inches in circumference measured at 4.5 feet above the tree's natural grade. In the case of trees with multiple trunks, two or more trunks must measure 72 inches each or greater in circumference when measured at 4.5 feet above the tree's natural grade.

All oak trees within the survey area that satisfied the previously mentioned criteria were identified to species. An aluminum tag with a unique number was affixed to the north side of each tree at approximately three feet above natural grade, with the exception of those trees located outside of the study area where the Applicant does not own the property. The location of each individual tree and the canopy extent were recorded with a GPS with sub-meter accuracy. Physical and horticultural evaluations were performed for each tree according to the City's Oak Tree Preservation and Protection Guidelines (City 1990). The rating system is outlined below in Table 1, *Oak Tree Rating System*. The findings of the oak tree survey are included as Appendix H, *Oak Tree Survey Report*.

Table 1
OAK TREE RATING SYSTEM

Rating	Description
A – Outstanding	A healthy and vigorous tree characteristic of its species and reasonably free of any visible signs of stress, disease, or pest infestation.
B – Above Average	A healthy and vigorous tree with minor visible signs of stress, disease, or pest infestation.
C – Average	Although healthy in overall appearance there is an abnormal amount of stress or disease and/or pest infestation.
D – Below Average/Poor	This tree is characterized by exhibiting a greater degree of stress, disease, and/or pest infestation than normal and appears to be in a state of rapid decline. The degree of decline may vary greatly in signs of dieback, disease, and pest infestation and appears to be in an advanced state of decline.
F – Dead	This tree exhibits no signs of life whatsoever.

Source: City of Santa Clarita (1990)

3.0 RESULTS

3.1 ENVIRONMENTAL SETTING

The study area is located in the foothills of the Sierra Pelona Mountains and portions were historically used as school, ranch, and hog farm from the early 1900s through the 1970s (Historic Aerials 1948). The

topography in the southern and western portions of the study area is predominantly steep hillsides, while the northern portion is primarily flat. The steep hills throughout the southern and western portions of the site are predominated by Riversidean upland sage scrub while the flatter portions of the study area are dominated by non-native grassland due to historic disturbance from ranching activities. Bouquet Canyon Creek flows from east to west in the northern portion of the study area. Elevations on the study area range from approximately 1,365 feet above mean sea level (AMSL) near the western boundary of the study area to approximately 1,600 feet above AMSL near the southeastern corner. Seven soil types are mapped on the study area, including Hanford sandy loam (HcC), Metz loam sandy (MfA), Mocho loam (MpA), Ojai loam (OgF), Saugus loam (ScF2), Sorrento loam (SsA), and Yolo loam (YoC; NRCS 2017).

Immediate surrounding land uses include existing residential development to the north and west, a mixture of undeveloped land and residential development to the south, and a juvenile camp (Los Angeles County Camp Joseph Scott) to the east. The study area is located approximately 0.20 mile to the southeast of Haskell Canyon Open Space and 1.40 miles to the south of Angeles National Forest.

3.2 VEGETATION COMMUNITIES

A total of 20 vegetation communities were mapped on the study area (Table 2, *Vegetation Communities*, Figure 5, *Vegetation*). The Holland/Oberbauer Element Codes and CDFW CaCodes are provided in parentheses next to each MCV community name in Table 2. Sensitive habitats pursuant to CDFW's Natural Communities List (2018b) are also identified in Table 2. A brief description of each vegetation community and land uses mapped on the study area is provided below.

Table 2
VEGETATION COMMUNITIES

Habitat Type (Holland/Oberbauer)	Habitat Type (Manual of California Vegetation)	Acres
Big Sagebrush Scrub (H[1] 35210)	Big Sagebrush (35.110.02)	1.91
Chamise Chaparral (H 37200)/Non-native Grassland (H 42200)	Chamise Chaparral (37.101.16)/Red Brome Grasslands (42.024.02)	2.98
Developed (O[2] 12000)	Developed (N/A)	9.37
Disturbed (O 11300)	Disturbed (N/A)	5.32
Disturbed-Riversidean Upland Sage Scrub	Disturbed-California Buckwheat Scrub	0.62
Elderberry Savanna (H 63430)	Blue Elderberry Stands (63.410.00)[3]	0.56
Giant Reed Stand (O 65100)	Giant Reed Breaks (42.080.01)	7.08
Mule Fat Scrub (H 63310)	Mule Fat Thickets (63.510.01)	0.27
Non-native Grassland (H 42200)	Red Brome Grasslands (42.024.02)	22.06
Non-native Grassland (H 42200)/ Riversidean Upland Sage Scrub (H 32710)	Red Brome Grasslands (42.024.02)/California Sagebrush Scrub (32.010.01)	7.75
Non-native Vegetation (O 42210)	Upland Mustards (42.011.05)	8.06
Non-native Vegetation (O 42210)/ Elderberry Savanna (H 63430)	Red Brome Grasslands (42.024.02)/Blue Elderberry Stands (63.410.00)	0.97
Ornamental (N/A)	Ornamental (N/A)	2.69
Riversidean Upland Sage Scrub (H 32710)	California Sagebrush Scrub (32.010.01)	7.06
Riversidean Upland Sage Scrub (H 32710)/Non-native Grassland (H 42200)	California Sagebrush Scrub (32.010.01)/Non-native Grassland	13.10
River Wash (O 64140)	River Wash (N/A)	0.36
Scrub Oak Chaparral (H 37900)	Scrub Oak Chaparral (37.407.02)	0.26

Table 2 (cont.)
VEGETATION COMMUNITIES

Habitat Type (Holland/Oberbauer)	Habitat Type (Manual of California Vegetation)	Acres
Scrub Oak Chaparral (H 37900)/Non-native Grassland (H 42200)	Scrub Oak Chaparral (37.407.02)/Red Brome Grasslands (42.024.02)	2.01
Southern North Slope Chaparral (H 37E20)	Tucker Oak Chaparral (37.418.04)	0.34
Southern Willow Scrub (H 63320)/Giant Reed Stand (O 65100)	Red Willow Thickets (61.205.01)[3]	0.70
	TOTAL	**93.47**

[1] Holland Element Code
[2] Oberbauer Element Code
[3] Sensitive habitats pursuant to the California Department of Fish and Wildlife (CDFW) Natural Communities List (2018b).

3.2.1 Big Sagebrush Scrub

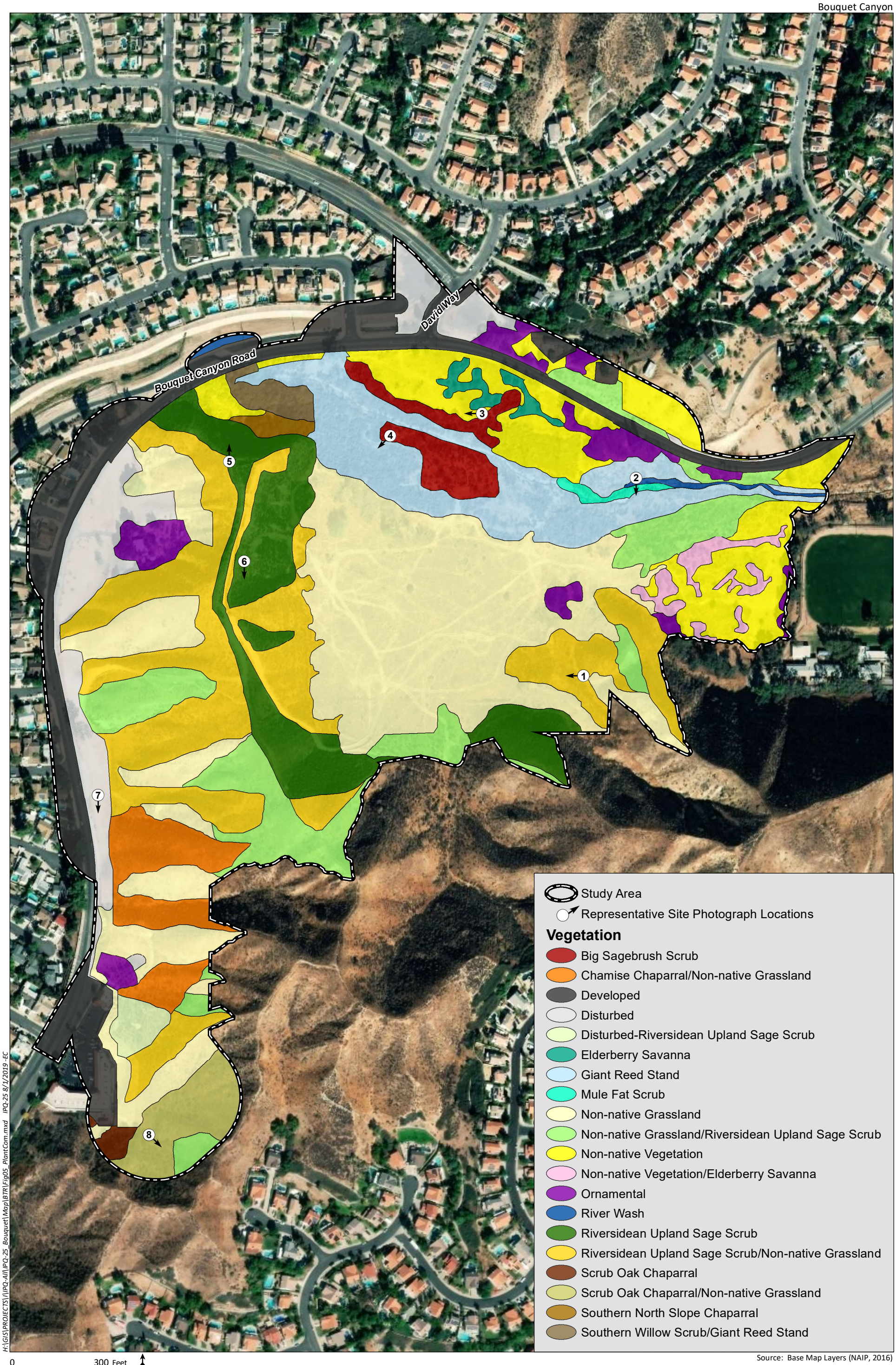
Big sagebrush scrub comprises mostly soft-woody shrubs usually with bare ground underneath and between the shrubs. This vegetation community occurs on a wide variety of soils and terrain, from rocky, well-drained slopes to fine-textured valley soils with high water tables. Big sagebrush scrub usually occurs between 4,000 feet and 9,000 feet in scattered localities within and along the margins of the Mojave and Sonoran deserts, on desert mountain ranges. Great Basin sagebrush (*Artemisia tridentata*) is the dominant plant species.

Big sagebrush scrub totaled 1.91 acres and was observed adjacent to portions of Bouquet Canyon Creek. This plant community was dominated by big sagebrush with scattered non-native species in the understory, including giant reed (*Arundo donax*), Mediterranean grass (*Schismus barbatus*), and short-pod mustard (*Hirschfeldia incana*).

3.2.2 Chamise Chaparral/Non-native Grassland

Chamise chaparral is the most widely distributed chaparral shrub and is dominated by the species chamise (*Adenostoma fasciculatum*). This vegetation community is found from Baja to northern California in pure or mixed stands. Chamise chaparral's ubiquitous distribution may be the result of chamise being the only chaparral species that regenerates from fire from both an underground root crown and the production of seeds. This community can be found on variable landforms, but soils are usually fairly shallow over bedrock. Chamise chaparral often dominates at low elevations and on xeric south facing slopes with 60 to 90 percent canopy cover. Along its lower elevation limit, chamise chaparral intergrades with coastal sage scrub. Mission manzanita (*Xylococcus bicolor*) and black sage (*Salvia mellifera*) are minor plant species associated within this vegetation community.

Chamise chaparral/non-native grassland was observed on some of the steep north-facing slopes in the southwestern portion of the study area, totaling 2.98 acres. Chamise was the dominant shrub observed in this community. The shrubs were fairly well-spaced with understory comprising many non-native grassland species (see Section 3.2.10 below). A few other native shrubs were observed in this community, including California buckwheat (*Eriogonum fasciculatum*), chaparral mallow (*Malacothamnus fasciculatus*), and Tucker oak (*Quercus john-tuckeri*).



Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Vegetation

Figure 5

3.2.3 Developed

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained.

Developed areas were observed near the northern and western study area boundaries, totaling 9.37 acres. The developed areas consisted of the existing Bouquet Canyon Road right-of-way.

3.2.4 Disturbed

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads) or actively maintained or heavily disturbed areas that are mostly unvegetated but may support scattered non-native plant species, such as ornamentals or ruderal exotic species that take advantage of disturbance. Disturbed habitat is similar to the non-native vegetation community described below (see Section 3.2.11), although disturbed areas generally support little to no vegetative cover.

Disturbed habitat was observed adjacent to Bouquet Canyon Road along the northern and western study area boundary, totaling 5.32 acre. The disturbed habitat mainly consisted of fuel modification areas for existing adjacent residential homes and were mostly void of vegetation.

3.2.5 Disturbed/Riversidean Upland Sage Scrub

This community is dominated by disturbed habitat described in Section 3.2.4 above and is intermixed with species associated with Riversidean upland sage scrub described in Section 3.2.14 below.

Disturbed/Riversidean upland sage scrub was observed in the southern portion of the study area, totaling 0.62 acre. This community consisted of widely-spaced California buckwheat shrubs. The interstitial spaces between the shrubs were mostly unvegetated due to fuel modification that was implemented for the adjacent shopping center.

3.2.6 Elderberry Savanna

Elderberry savanna is dominated by widely-spaced blue elderberry (*Sambucus nigra* ssp. *caerulea*) with a grassy understory. This plant community is associated with stream terraces and bottomlands, which may be intermittently flooded.

One small patch of elderberry savanna was observed adjacent to the northern study area boundary, totaling 0.56 acre. This plant community was dominated by blue elderberry trees in the overstory and California buckwheat and short-pod mustard (*Hirschfeldia incana*) in the understory.

3.2.7 Giant Reed Stand

Giant reed stand occurs within sandy or gravelly soils that are deposited near stream channels during flood events and are densely vegetated by giant reed. These dense stands generally exclude most other plant life. This community typically associated with riparian areas along low-gradient streams and in ditches.

The giant reed stands on the study area were densely vegetated by giant reed, and the community totaled 7.08 acres on the study area. Native species, such as thick-leaved yerba santa (*Eriodictyon*

crassifolium), fourwing saltbush (*Atriplex canescens*), and caterpillar phacelia (*Phacelia cicutaria*), were observed within the openings of this plant community. One Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) was also observed in this community. Non-native species observed within these openings included prickly lettuce (*Lactuca serriola*), red brome (*Bromus madritensis* ssp. *rubens*), short-pod mustard, and tree tobacco (*Nicotiana glauca*).

3.2.8 Mule Fat Scrub

Mule fat scrub is a shrubby riparian scrub community dominated by mule fat (*Baccharis salicifolia*) interspersed with small willows. This early seral community is dominated by frequent flooding, the absence of which would lead to a cottonwood or sycamore dominated woodland or forest. In some environments, limited hydrology may favor the persistence of mule fat.

The study area supports one patch of mule fat scrub along Bouquet Canyon Creek in the northeastern corner of the study area, which totaled 0.27 acre. In addition to mule fat, other species observed included California sagebrush (*Artemisia californica*) with and understory of non-native species such as Jersey cudweed (*Pseudognaphalium luteo-album*), red brome (*Bromus madritensis* ssp. *rubens*), common ripgut grass (*Bromus diandrus*), and short-podded mustard.

3.2.9 Non-native Grassland

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs. Characteristic species include oats (*Avena* spp.), brome grasses (*Bromus* spp.), and mustards (*Brassica* spp., *Hirschfeldia incana*). Most of the annual introduced species within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. Intensive grazing and agricultural practices combined with severe droughts in California contributed to the successful invasion and establishment of these species and the replacement of native grasslands with annual-dominated non-native grasslands (Jackson 1985).

Non-native grassland is the predominant plant community observed on the study area, totaling 22.06 acres. This community was observed in the flatter portions of the study area, including the valleys in the center and western parts of the study area. This plant community consisted most of red brome. Other non-native grass species included common ripgut grass, Mediterranean grass, and oats. A few annual native species were also observed within these areas, including common sandaster (*Corethrogyne filaginifolia*), fascicled tarplant (*Deinandra fasciculata*), and Menzies' fiddleneck (*Amsinckia menziesii*) and.

3.2.10 Non-native Grassland/Riversidean Upland Sage Scrub

This community is dominated by non-native grassland described in Section 3.2.9 above and is intermixed with some species associated with Riversidean upland sage scrub described in Section 3.2.14 below.

Non-native grassland/Riversidean upland sage scrub was observed on some of the south- and southwest-facing slopes in the southern portion of the study area, totaling 7.75 acres. This community was dominated by non-native grasses with widely-spaced California buckwheat shrubs.

3.2.11 Non-native Vegetation

Non-native vegetation community is typically associated with land that has been heavily influenced by human activities, including areas adjacent to roads, manufactured slopes, and abandoned lots. Non-native vegetation areas are dominated by ornamental and non-native species that take advantage of previously cleared or abandoned landscaping or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Non-native vegetation was observed in several patches within the study area, totaling 8.06 acres. These areas were dominated by short-podded mustard with other scattered non-native species such as annual yellow sweetclover (*Melilotus indicus*), foxtail barely (*Hordeum murinum*), red brome, and redstem filaree (*Erodium cicutarium*).

3.2.12 Non-native Vegetation/Elderberry Savanna

This community is dominated by non-native herbaceous species described in Section 3.2.11 above and is intermixed with some species associated with elderberry savanna described in Section 3.2.6 above.

Non-native vegetation/elderberry savanna was observed as scattered patches in the eastern portion of the study area, totaling 0.97 acre. This community was dominated by mustard with widely-spaced blue elderberry shrubs.

3.2.13 Ornamental

Ornamental vegetation is characterized as stands of naturalized trees and shrubs, many of which are also used in landscaping.

Ornamental vegetation was observed in small patches throughout the study area, totaling 2.69 acres. Most of the ornamental vegetation was associated with existing development adjacent to the study area, such as Bouquet Canyon Road, residences, and commercial businesses. Ornamental species observed included black locust (*Robinia pseudoacacia*), chinaberry (*Melia azedarach*), blue gum (*Eucalyptus globulus*), Italian cypress (*Cupressus sempervirens*), river red gum (*Eucalyptus camaldulensis*), silver dollar gum (*Eucalyptus polyanthemos*), and tree of heaven (*Ailanthus altissima*).

3.2.14 Riversidean Upland Sage Scrub

Riversidean sage scrub is the most xeric expression of coastal sage scrub south of Point Conception, California. This community occupies xeric sites, such as steep slopes, severely drained soils, or clays that slowly release stored soil moisture. This community is dominated by subshrubs with leaves that are deciduous during drought, an adaptation that allows the habitat to withstand the prolonged drought period in the summer and fall. Sage scrub species have relatively shallow root systems and open canopies that allow for the occurrence of a substantial herbaceous (annual plant) component. Typical stands are fairly open and dominated by species such as California sagebrush, brittlebush (*Encelia farinosa*), and California buckwheat.

Several patches of Riversidean upland sage scrub were observed on the east- and north-facing hillsides in the western portion of the study area, totaling 7.06 acres. In addition to California sagebrush and California buckwheat, other native shrubs included black sage, basket-brush (*Rhus aromatica*), purple sage (*Salvia leucophylla*), chaparral mallow, and Our Lord's candle (*Hesperoyucca whipplei*). Native

annuals included common goldenstar (*Bloomeria crocea*), elegant clarkia (*Clarkia unguiculata*), gilia (*Gilia angelensis*), and Menzies' fiddleneck.

3.2.15 Riversidean Upland Sage Scrub/Non-native Grassland

This community is dominated by species associated with the Riversidean upland sage scrub community described above in Section 3.2.7 above with a significant component of species associated with non-native grassland described in Section 3.2.9 above.

Riversidean upland sage scrub/non-native grassland was observed on the north-facing hillsides in the western portion of the study area, totaling 13.10 acres. This community mostly consisted of California sagebrush and California buckwheat shrubs, but contributed less cover than those observed in the Riversidean upland sage scrub community. The understory was made up mostly of non-native brome grasses, such as red brome and common ripgut grass.

3.2.16 River Wash

River wash is mostly unvegetated streambed that typically consists of coarse-textured substrate, which ranges from sand to gravel. The coarse-textured substrate is transported and deposited by stream flows.

River wash was observed in the upstream portion of Bouquet Canyon, totaling 0.36 acre. The river wash consisted of mostly unvegetated sandy streambed. Some thick-leaved yerba santa and non-native grasses were scattered throughout this area.

3.2.17 Scrub Oak Chaparral

Scrub oak chaparral is a dense, evergreen chaparral with shrubs up to 20 feet tall and is dominated by scrub oak (*Quercus berberidifolia*) with considerable mountain mahogany (*Cercocarpus betuloides*). Scrub oak chaparral occurs in somewhat more mesic areas than other chaparrals, such as north facing slopes, and recovers more rapidly from fires than other chaparrals due to resprouting capabilities of scrub oak (Holland 1986). This vegetation community often occurs at slightly higher elevations (to 5,000 feet) and substantial leaf litter accumulates.

Two small areas of scrub oak chaparral were observed on a steep north-facing slope in the southwestern corner of the study area, totaling 0.26 acre. Scrub oak was the dominant shrub species while the understory consisted of non-native brome grasses.

3.2.18 Scrub Oak Chaparral/Non-native Grassland

This community is dominated by species associated with the scrub oak chaparral community described above in Section 3.2.17 above with a significant component of species associated with non-native grassland described in Section 3.2.9 above.

Scrub oak chaparral/non-native grassland was observed on the north-facing hillsides in the western portion of the study area, totaling 13.10 acres. This community mostly consisted of scrub oak, but contributed less cover than those observed in the scrub oak chaparral. The understory was made up mostly of non-native brome species, such as red brome and common ripgut grass. The study area supports one patch of scrub oak chaparral/non-native grassland totaling 2.01 acres adjacent to the southern corner of the study area.

3.2.19 Southern North Slope Chaparral

Southern north slope chaparral is generally a mixed chaparral community on more mesic, shady slopes with well-drained soil. Codominant species or minor components of this plant community may include chamise, manzanita (*Arcostaphylos* spp.), California lilac (*Ceanothus* spp.), and basket-bush.

One patch of southern north slope chaparral was observed on the upper portion of a north-facing slope near the northwestern corner of the study area, totaling 0.34 acre. Tucker oak was the dominant shrub in this plant community. Other species observed included basket-bush, California bee plant (*Scrophularia californica),* and chamise. The understory of this plant community comprised non-native grasses.

3.2.20 Southern Willow Scrub/Giant Reed Stand

Southern willow scrub consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* spp.) in association with mule fat and with scattered emergent Fremont cottonwood and western sycamores (*Platanus racemosa*). This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland 1986). In the absence of periodic flooding, this early seral type would be succeeded by southern cottonwood or western sycamore riparian forest.

The study area supports one patch of southern riparian scrub/giant reed stand located along in the downstream (western) portion of Bouquet Canyon Creek, totaling 0.70 acre. Red willow (*Salix laevigata*) dominated the canopy in this community with a strong presence of giant reed in the understory. The canopy also included a few dying Fremont cottonwoods and scattered patches of mule fat were observed in the shrub layer.

3.3 PLANTS

HELIX identified a total of 151 plant species within the study area during surveys to date, of which 53 (35 percent) are non-native species (Appendix A).

3.4 ANIMALS

A total of 45 animal species were identified on the study area during biological surveys, including one reptile species, 40 bird species, and four mammal species (Appendix B).

3.5 SENSITIVE BIOLOGICAL RESOURCES

3.5.1 Rare Plant Species

Rare plant species are uncommon or limited in that they: (1) are only found in the Santa Clarita region; (2) are a local representative of a species or association of species not otherwise found in the region; or (3) are severely depleted within their ranges or within the region. Rare plant species include those species listed by CNPS with a CRPR of 1, 2, or 3 or federally and state listed endangered and threatened species. Species with CRPR of 4 may be considered rare if a population is locally uncommon, at the periphery of the species' range, sustained heavy losses, shows unusual morphology, or occurs on

unusual substrates (CNPS 2019). Focused surveys concentrated on the identification of CRPR 1, 2, and 3 species.

A total of eight rare plant species were recorded within the Mint Canyon quadrangle database search conducted on CNDDB (CDFW 2018a) and CNPS (2018). These species are included in Appendix I, *Rare Plant Species Potential to Occur.* Of the eight rare plant species recorded within the vicinity of the study area, four species were considered to have no potential to occur on the study area based on elevation range and/or lack of suitable habitat on the study area. The remaining four species were considered to have a potential to occur on the study area, primarily based on the presence of chaparral and coastal scrub habitats (see Appendix I). These species include Nevin's barberry (*Berberis nevinii*), slender mariposa lily (*Calochortus clavatus* var. *gracilis*), slender-horned spineflower (*Dodecahema leptoceras*), and Piute Mountains navarretia (*Navarretia setiloba*).

Spring rare plant surveys were conducted on May 15, 2018 and May 9, 2019, and a summer rare plant survey was conducted on August 8, 2018. Nevin's barberry, slender-horned spineflower, and Piute Mountains navarretia were not observed during the rare plant surveys and are therefore presumed absent from the study area. A total of 496 slender mariposa lilies were observed throughout the north-facing slopes in the eastern and southern portions of the study area during the spring rare plant survey (Figure 6, *Impacts to Rare Plants*).

3.5.2 Sensitive Animal Species

Sensitive animal species include federally and state listed endangered and threatened species, candidate species for listing by USFWS or CDFW, and/or are species of special concern (SSC) pursuant to CDFW.

A total of 15 sensitive animal species were recorded within the Mint Canyon database search conducted on CNDDB (CDFW 2018a). These species are included in Appendix J, *Sensitive Animal Species Potential to Occur.* An evaluation of each sensitive animal species' potential to occur on the study area is also provided in Appendix J and discussed in further detail below.

No Potential to Occur

Of the 15 sensitive animal species recorded within the vicinity of the study area, five species (Quino checkerspot butterfly [*Euphydryas editha quino*], two-striped gartersnake [*Thamnophis hammondii*], unarmored threespine stickleback [*Gasterosteus aculeatus williamsoni*], vernal pool fairy shrimp [*Branchinecta lynchi*], and western spadefoot [*Spea hammondii*]) were considered to have no potential to occur on the study area due to lack of suitable habitat and/or the study area is located outside of the species' known geographical range. Due to historical documentation of unarmored threespine stickleback (UTS) in Bouquet Canyon Creek, this species is discussed in further detail below.

Unarmored Threespine Stickleback

Currently, there are three recognized subspecies of threespine stickleback (*Gasterosteus aculeatus*), which are differentiated by the number of plates on the sides of their bodies. The subspecies include: (1) fully plated threespine stickleback (*Gasterosteus aculeatus aculeatus*), which have up to 36 plates; (2) low-plated threespine stickleback (*Gasterosteus aculeatus microcephalus*), which have 3 to 7 plates; and (3) UTS, which lack plates (Richmond et al. 2015). The UTS adults prefer slow-moving streams with a constant flow of water, but will occupy faster moving water if algal mats or other forms of protection

Bouquet Canyon

Study Area

Rare Plant Survey Areas

2018 Rare Plant Survey Area

2019 Rare Plant Survey Area

Rare Plant Locations

Calchortus clavatus var gracilis (496 individuals)

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0 375 Feet

N

Source: Aerial (NAIP, 2016)

HELIX Environmental Planning

Rare Plant Locations

Figure 6

are available (USFWS 2009). The UTS require sheltered pools at least 15 inches in depth with dense aquatic vegetation for breeding.

The UTS has been historically documented in Bouquet Canyon Creek. Although there is no written record, low-plated threespine stickleback were believed to have been introduced from the Fillmore State Fish Hatchery on the lower Santa Clara River into Bouquet Canyon Creek during rainbow trout (*Oncorhynchus mykiss*) stocking in the 1970s. This resulted in intergrades between the low-plated threespine stickleback and the UTS (San Marino Environmental Associates [SMEA] 2008; Richmond et al. 2015). San Marino Environmental Associates (SMEA) conducted multiple surveys for stickleback in Bouquet Canyon Creek. They identified an intergrade zone just upstream of the U.S. Forest Service Texas Canyon Station near the end of Bouquet Canyon. SMEA also conducted a number of surveys downstream of this intergrade zone where Bouquet Canyon Creek crosses Vasquez Canyon Road, which is approximately 1.70 miles upstream of the study area. SMEA collected 27 UTS in 1998 and only 3 UTS in 2001. In 2005, three sticklebacks were captured and plates were counted on two of the individuals. One of the individuals was unarmored while the other individual had one plate. This reach of Bouquet Canyon Creek was also surveyed in 2000, but was entirely dry. SMEA notes that this stretch of UTS habitat has clearly become more ephemeral since the 1998 survey, which is reflected in the drop in stickleback individuals collected between 1998 and 2005. SMEA concluded that the population located near Vasquez Canyon Road has likely been extirpated and only the intergrade zone remains upstream at the U.S. Forest Service Texas Canyon Station.

Richmond et al. (2015) also conducted a genetic study of sticklebacks in Bouquet Canyon Creek. They determined that the genotype and phenotype of sticklebacks in Bouquet Canyon Creek resemble a low-plated threespine stickleback population as opposed to the unarmored populations they observed in adjacent streams (e.g., San Francisquito Canyon, Santa Ana River near Valencia, and Soledad Canyon). They also discovered that although sticklebacks sampled near the juncture of Bouquet Canyon Creek and Texas Canyon Creek were the most similar to the unarmored populations, plates have steadily increased since at least the 1980s. This is the near the same location SMEA (2008) identified an intergrade zone between UTS and the low-plated threespine stickleback.

Although UTS have historically been documented upstream of the study area, findings by SMEA (2008) and Richmond et al. (2015) indicate that many stickleback in Bouquet Canyon Creek have a low plate count due to introduction of partially armored stickleback upstream. Richmond et al. (2015) indicates that downstream movement of stickleback through Bouquet Canyon Creek into the Santa Clara River is not likely due to channel alteration at the base of Bouquet Canyon (i.e., approximately 3.2 miles upstream of the study area). Upstream movement of stickleback from the Santa Clara River to Bouquet Canyon Creek and into the study area is restricted as a result of the channelization of Bouquet Canyon Creek just downstream of the study area. Existing drop structures would prohibit stickleback movement upstream into the study area.

The reach of Bouquet Canyon Creek that occurs within the study area does not support suitable live-in habitat for stickleback. Bouquet Canyon Creek within the study area is characterized as an ephemeral drainage comprising somewhat excessively drained sandy loam soil of the Metz series. Due to its ephemeral nature, the drainage only supports flowing water for a brief period following rainfall. The drainage does not support dense vegetation or algal mats. No ponding or surface water was documented during any of the site visits conducted between 2017 and 2019. Since this portion of Bouquet Canyon Creek only supports water for a short period following rainfall, the study area does not support suitable live-in habitat for UTS.

Potential to Occur

Of the 15 sensitive animal species recorded within the vicinity of the study area, eight species were considered to have potential occur. Three species were determined to have a low potential to occur on the study area based on the presence of low quality habitat, limited acreage of habitat, and lack of recent observations within the immediate vicinity of the study area, including California glossy snake (*Arizona elegans occidentalis*), Townsend's big-eared bat (*Corynorhinus townsendii*; foraging only), and southern grasshopper mouse (*Onychomys torridus ramona*). California glossy snake and southern grasshopper mouse are SSC. Townsend's big-eared bat is an SSC and state candidate threatened species; no suitable roosting habitat is present for this species, although this species may use the site as foraging habitat.

One species (California legless lizard [*Anniella* sp.]) was determined to have a moderate potential to occur on the study area based on the presence of low-quality habitat and recent observations within the immediate vicinity.

Four species were determined to have a high potential to occur on the study area based on the presence of suitable habitat and recent observations within the immediate vicinity of the study area, including coastal whiptail (*Aspidoscelis tigris stejnegeri*), coast horned lizard (*Phrynosoma blainvillii*), loggerhead shrike (*Lanius ludovicianus*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). All four species are SSC and were recorded within the last 15 years less than five miles from the study area.

Presumed Absent

Focused surveys were conducted for two sensitive bird species with the potential to occur on the study area, including BUOW and CAGN. Focused surveys for both species were negative. Survey results are discussed further below.

Burrowing Owl

The BUOW is an SSC. A focused survey for BUOW was conducted between March and June 2018. No BUOWs were observed during the surveys; therefore, this species is presumed absent from the study area. The detailed report findings for the BUOW surveys are included as Appendix D.

Coastal California Gnatcatcher

The CAGN is a federally threatened species and a SSC. A focused survey for CAGN was conducted between March and May 2018. No CAGN were observed during the surveys; therefore, this species is presumed absent from the study area. The detailed report findings for the CAGN surveys are included as Appendix E.

3.5.3 Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitats are considered either rare within the region or sensitive by CDFW (2018b). Communities are given a Global (G) and State (S) ranking on a scale of 1 to 5. Communities afforded a rank of 5 are most common while communities with a rank of 1 are considered highly periled. The CDFW considers sensitive communities as those with a rank between S1 and S3.

The study area supports two sensitive plant communities. Elderberry savanna and southern willow scrub/giant reed stand are considered sensitive habitats pursuant to CDFW. Approximately 0.56 acre of elderberry savanna and 0.70 acre of southern riparian scrub/giant reed stand were mapped on the study area (Figure 5). Both communities are small, isolated habitat patches with a non-native understory.

3.5.4 Jurisdictional Waters and Wetlands

One major drainage feature, Bouquet Canyon Creek, occurs within the study area. The drainage features are described in detail below. The study area supports approximately 0.65 acre of USACE/RWQCB jurisdictional WUS and 9.80 acres of CDFW jurisdictional streambed and riparian vegetation (Figure 7, *Jurisdictional Features*).

3.5.4.1 Bouquet Canyon Creek

Bouquet Canyon Creek, which is mapped by USGS as a blueline stream, is an ephemeral drainage that runs from east to west near the northern study area boundary. The headwaters of the Bouquet Canyon drainage feature originate approximately 10 miles to the northeast of the study area in the Sierra Pelona Mountains, and non-storm related flows through the wash are often controlled via regulated releases from Bouquet Reservoir. The Bouquet Canyon streambed enters the study area at the northeastern boundary and exits at the northwestern boundary. The drainage continues under Bouquet Canyon Road at the northwestern corner of the study area boundary where the drainage has been channelized. The Bouquet Canyon drainage is a tributary to the Santa Clara River, which ultimately drains into the Pacific Ocean approximately 35 miles to the southwest of the study area. The on-site floodplain of Bouquet Canyon Creek is infested with invasive giant reed. Historical imagery and evidence of grinded material observed on the study area suggest that giant reed removal has previously occurred on the study area. Bouquet Canyon Creek supports somewhat excessively drained sandy loam of the Metz soil series. Aside from Bouquet Canyon Creek, no other surface water features were observed and the study area is predominantly upland habitat. The jurisdictional delineation report is included as Appendix G, *Jurisdictional Delineation Report*.[1]

Within the study area, Bouquet Canyon Creek supports approximately 0.65 acre of USACE/RWQCB non-wetland WUS ephemeral streams. In addition, Bouquet Canyon Creek supports approximately 9.80 acres of CDFW jurisdictional streambed and riparian vegetation.

3.5.5 Oak Tree Survey

A total of 64 oak trees meet the City's definition of a protected tree (Figure 8, *Oak Tree Locations*). Of the 64 trees, two were coast live oaks (*Quercus agrifolia*), six were scrub oaks, two were blue oaks (*Quercus douglasii*), 53 were Tucker oaks, and one was a valley oak (*Quercus lobata*). Six trees (9 percent) were assigned an A rating, 22 trees (34 percent) were assigned a B rating, 25 trees (40 percent) were assigned a C rating, and 11 trees (17 percent) were assigned a D rating. No dead trees or heritage oak trees were observed during the survey. The detailed report findings are included as Appendix H.

[1] The study area evaluated in the Jurisdictional Delineation Report increased slightly following report completion. The jurisdictional resources were extended based on previous delineation results and confirmed in the field during subsequent site visits.

3.5.6 Habitat and Wildlife Corridor Evaluation

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Corridors can be local or regional in scale; their functions may vary temporally and spatially based on conditions and species presence. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Animals use these corridors, which are often hillsides or tributary drainages, to move between different habitats. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations.

Regionally, the study area is situated in the foothills of the Sierra Pelona Mountains and supports the lower portion of Bouquet Canyon Creek just upstream of where the creek becomes channelized. The study area is located approximately 0.20 mile to the southeast of Haskell Canyon Open Space and 1.40 miles to the south of Angeles National Forest, although existing development separates the study area from these open space areas. The study area is mostly surrounded by development with the exception of the eastern portion of the study area, which connects to undeveloped land located to the east. Bouquet Canyon Creek supports limited native habitat for wildlife, including small patches of mule fat and red willows. The majority of Bouquet Canyon Creek on the study area is vegetated with giant reed, which provides limited resources for wildlife. The remainder of the study area supports a number of native upland habitats that provide live-in resources for wildlife, such as big sagebrush scrub, elderberry savanna, Riversidean upland sage scrub, scrub oak chaparral, and southern north slope chaparral. The dominant habitat on the study area is non-native grassland, which also provides low-value foraging habitat for some bird species.

As previously described, corridors can be local or regional in scale. The study area is not considered a regional corridor since it does not directly connect two or more large blocks of habitat that would otherwise be fragmented or isolated from one another. The areas immediately adjacent to the study area are highly urbanized and support limited cover for wildlife moving through the area. Wildlife may access the study area via undeveloped land to the east. Access to the study area from the east is quite constrained, but could occur along Bouquet Canyon Creek or along the ridgeline to the south of the Camp Joseph Scott facility. Development of the project would not impede wildlife access to other undeveloped land in the region since the study area is located at the edge of existing development. Although wildlife likely use Bouquet Canyon Creek for local movement through the area, the lower portion of Bouquet Canyon would not be considered a regional corridor for wildlife since the creek becomes channelized and unvegetated just downstream of the study area. The study area is essentially a “dead end” for wildlife moving through the area since it does not directly connect two or more large blocks of habitat and the northern, southern, and western portions of the study area are confined by existing development. The study area is not within any wildlife corridors or linkages identified by the South Coast Missing Linkages Project (South Coast Wildlands 2008). The nearest wildlife movement corridor to the study area identified by the South Coast Missing Linkages Project is the San Gabriel – Castaic Connection located approximately 4.3 miles to the northeast of the study area.

While the study area is not considered a regional wildlife movement corridor, the study area does support habitat suitable for local wildlife movement. Common mammals that are adapted to human disturbance (e.g., raccoon [*Procyon lotor*], skunk [*Mephitis* sp.], cottontail rabbits [*Sylvilagus* spp.], and coyote [*Canis latrans*]) may use the study area for local movement within the area. Birds species may fly over surrounding development to nest and/or forage within study area. Mountain lions (*Puma concolor*) are known to occur within the vicinity of the study area and one bobcat (*Lynx rufus*) was observed on

Bouquet Canyon

David Way

Bouquet Canyon Road

10

10

10

1

2

3

4

Study Area

Representative Drainage Photographs

Jurisdiction

USACE/RWQCB Jurisdiction

CDFW Jurisdiction

Existing Concrete Structure

0 150 Feet

N

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Source: Base Map Layers (NAIP, 2016; NearMap, 2017)

HELIX Environmental Planning

Jurisdictional Features

Figure 7

Bouquet Canyon

Study Area
200-foot Tree Survey Buffer
Tree Protected Zone
Tree Canopy
Quercus agrifolia
Quercus berberidifolia
Quercus douglasii
Quercus john-tuckeri
Quercus lobata

0 375 Feet

0 50 Feet

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Source: Base Map Layers (Nearmap, 2017)

HELIX Environmental Planning

Oak Tree Locations

Figure 8

the study area during field surveys. These larger mammals require large expanses of undeveloped land for their territories, such as land to the east. Although the study area is not large enough to solely support live-in habitat for these larger mammals, the study area could be on the edge of their territories and they may occasionally wander onto the study area. As discussed above, the study area supports opportunities for local wildlife movement but does not function as a wildlife corridor since it does not directly connect to two or more blocks of large habitat.

4.0 REGIONAL AND REGULATORY CONTEXT

Biological resources located within the study area are subject to regulatory review by federal, state, and local agencies. Biological resources-related laws and regulations that apply to the project include the Federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), CWA, California Endangered Species Act (CESA), and CFG Code.

4.1 FEDERAL REGULATIONS

4.1.1 Federal Endangered Species Act

Administered by the USFWS, the FESA provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a "take" under the FESA. Section 9(a) of the FESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

Sections 4(d), 7, and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation is required when there is a nexus between federally listed species' use of the site and impacts to USACE jurisdictional areas. Section 10(a) allows issuance of permits for "incidental" take of endangered or threatened species. The term "incidental" applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity.

4.1.2 Federal Clean Water Act

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all WUS. Permitting for projects filling WUS, including wetlands and vernal pools, is overseen by USACE under Section 404 of the CWA. Projects may be permitted on an individual basis or may be covered under one of several approved Nationwide Permits. Individual Permits are assessed individually based on the type of action, amount of fill, etc. Individual Permits typically require substantial time (often longer than six months) to review and approve, while Nationwide Permits are pre-approved if a project meets the

appropriate conditions. A CWA Section 401 Water Quality Certification, which is administered by the State Water Resources Control Board, must be issued prior to any 404 Permit.

4.1.3 Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on disturbance of active bird nests during the nesting season, which is generally defined as February 15 to August 31 for songbirds. In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests, which the nesting season is generally defined as January 15 to August 31.

4.1.4 Critical Habitat

As described by the FESA, critical habitat is the geographic area occupied by a threatened or endangered species essential to species conservation that may require special management considerations or protection. Critical habitat also may include specific areas not occupied by the species but that have been determined to be essential for species conservation.

Critical habitat does not occur on the study area. The nearest critical habitat to the study area is spreading navarretia (*Navarretia fossalis*) critical habitat, which is approximately 2.25 miles to the east (USFWS 2017a).

4.2 STATE REGULATIONS

4.2.1 California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (i.e., impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

4.2.2 California Endangered Species Act

The CESA is similar to the FESA in that it contains a process for listing of species and regulating potential impacts to listed species. Section 2081 of the CESA authorizes the CDFW to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes. The golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*) are considered State Fully Protected (SFP) species. A SFP species may not be taken or possessed at any time, and no state licenses or permits may be issued for their take except for collecting the species necessary for scientific research and relocation of the bird species for the protection of livestock (Fish and Game Code Sections 3511, 4700, 5050, and 5515).

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. The NPPA regulates the collection, transport, and commerce of plants that are listed. The CESA followed the NPPA and covers both plants and animals that are determined to be endangered or

threatened with extinction. Plants listed as rare under NPPA were designated threatened under the CESA.

4.2.3 California Fish and Game Code

4.2.3.1 Protection of Raptor Species

Raptors (birds of prey) and owls and their active nests are protected by CFG Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW.

4.2.3.2 Streambed Alteration Agreement

The CFG Code (Section 1600 et seq.) requires an agreement with the CDFW for projects affecting riparian and wetland habitats through the issuance of a Streambed Alteration Agreement.

4.3 LOCAL REGULATIONS

4.3.1 Oak Tree Protection

The City has implemented regulatory measures to protect and preserve oak trees that occur within the City's jurisdiction. The City's Oak Tree Preservation ordinance states, "No person shall cut, prune, remove, relocate, endanger, damage, or encroach into the protected zone of any oak tree on any public or private property within the City" (City 2013). The protected zone of the oak tree includes the area within five feet of the dripline (canopy extent), but no less than 15 feet from the trunk. Encroachment is defined as intrusion into the protected zone of an oak tree, which includes but is not limited to, intrusion by trenching, paving, pruning, dumping, parking of commercial vehicles. Major encroachment is defined by the City as "an area between the outer edge of the trunk and fifty percent of the diameter of the protected zone" and minor encroachment is defined as an area between the outermost edge of the protected zone and fifty percent of the diameter of the protected zone" (2013).

To remove any oak tree or to subject its protected zone to major encroachment, an Oak Tree Permit must be obtained. Trees subject to the permit include all oak trees in the genus *Quercus* that exceed six inches in circumference when measured at 4.5 feet above the tree's natural grade. Heritage oak trees are given special consideration and may be fully protected or subject to requirements stricter than those of a standard protected oak tree. A heritage oak tree is defined as any oak tree measuring 108 inches in circumference measured at 4.5 feet above the tree's natural grade. In the case of trees with multiple trunks, two or more trunks must measure 72 inches each or greater in circumference when measured at 4.5 feet above the tree's natural grade.

To obtain an Oak Tree Permit, an application must be submitted to the City Manager or designated representative ("Director") and a filing fee as established by the City Council must be paid. The conditions of the Oak Tree Permit will require native oak trees at a minimum of 24-inch box size to be planted for each protected oak tree removed and for each tree whose protected zone will be subject to major encroachment. Minor encroachment does not require mitigation, but a number of protection measures are required during construction as outlined in Section VII. Standards for Performance of Permitted Work of the Oak Tree Preservation Guidelines (City 1990). The number of replacement trees required is dependent upon the circumference of the tree to be impacted, which are described in

Subsection B of the Oak Tree Preservation Ordinance. For those trees with multiple stems, the average circumference was used to determine the number of replacement trees.

4.3.2 Fuel Modification Zones

The County Fire Department requires fuel modification zones to create a defensible space in the event a wildlife breaks out (County of Los Angeles N.D.). There are three difference zones, which are outlined below:

1. **Zone A (Setback Zone)** – This zone extends 20 feet beyond the edge of any structures. The only allowed vegetation within this zone is green lawns, ground cover not exceeding six inches in height, and well-spaced shrubs. The landscape must be irrigated to promote healthy vegetation and fire resistance.

2. **Zone B (Irrigated Zone)** – This zone extends from the outermost edge of Zone A to 100 feet from structures. Green lawn, ground cover not exceeding six inches in height, and well-spaced shrubs and trees are allowed in this zone. The landscape must be irrigated to promote healthy vegetation and fire resistance.

3. **Zone C (Native Brush Thinning Zone)** – This zone extends from the outermost edge of Zone B to 200 feet from the structures. Well-spaced native vegetation and ornamental shrubs and trees are allowed. Vegetation must be thinned and species that constitute a fire risk are not allowed (e.g., chamise, sages [*Salvia* spp.], California sagebrush, and California buckwheat). This zone does not require irrigation.

5.0 PROJECT EFFECTS

This section describes potential direct and indirect impacts associated with the proposed project. Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. Indirect impacts consist of secondary effects of a project, including noise, decreased water quality (e.g., through sedimentation, urban contaminants, or fuel release), fugitive dust, colonization of non-native plant species, animal behavioral changes, and night lighting. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes a longer time to become apparent.

The significance of impacts to biological resources present or those with potential to occur was determined based upon the sensitivity of the resource and the extent of the anticipated impacts. For certain highly sensitive resources (e.g., a federally listed species), any impact would be significant. Conversely, other resources that are of low sensitivity (e.g., species with a large, locally stable population in the region but declining elsewhere) could sustain some impact with a less than significant effect.

5.1 SENSITIVE SPECIES

5.1.1 Rare Plant Species

Less than Significant Impacts with Mitigation Incorporated

A total of four of the eight rare plant species recorded within the Mint Canyon quadrangle were not considered to have a potential to occur based on geographic range, elevation range, and/or lack of suitable habitat (see Appendix I). The remaining four species were considered to have a potential to occur on the study area primarily based on the presence of chaparral and coastal scrub habitats. Rare plant surveys were conducted in May and August 2018 and May 2019.

Nevin's barberry, Piute Mountains navarretia, and slender-horned spineflower were not observed on the study area during any of the rare plant surveys. Therefore, these species are presumed absent from the study area. Project grading and fuel modification associated with the residential development would impact approximately 142 slender mariposa lilies (Figure 9, *Impacts to Rare Plants*). Construction of the new alignment of Bouquet Canyon Road would impact approximately 320 slender mariposa lilies. The remaining 34 individuals would be avoided by the project.

Slender mariposa lily is a CRPR 1B.2 species, which are species considered rare throughout their range and have declined significant over the last century. This species is not federally or state listed as endangered or threatened. Project impacts to this species would be significant and mitigation would be required to reduce impacts to less than significant. Required mitigation for potential impacts to slender mariposa lily is described in mitigation measure BIO-1 in Section 6.0 below.

5.1.2 Sensitive Animal Species

Less than Significant Impacts with Mitigation Incorporated

Of the 15 sensitive animal species recorded within the vicinity of the study area, five species (Quino checkerspot butterfly, two-striped gartersnake, UTS , vernal pool fairy shrimp, and western spadefoot) were considered to have no potential to occur on the study area due to lack of suitable habitat and/or the study area is located outside of the species' known geographical range (Appendix J). Although UTS was determined to have no potential to occur on the study area (see discussion in Section 3.5.2 above), populations of UTS do occur downstream in portions of the Santa Margarita River. The project would not indirectly affect downstream water quality or surface water flows. The project would prevent sedimentation and potential impacts to water quality downstream during construction and post-construction by preparing and implementing a project-specific Stormwater Pollution Prevention Plan (SWPPP) and Water Quality Management Plan (WQMP), respectively. Potential impacts to water quality due to pollutants from residential uses will be addressed through the use of infiltration basins where feasible and biofiltration basins where infiltration is not feasible due to low percolation rates in the underlying soil. The SWPPP and WQMP will also be provided to the resource agencies (USACE, RWQCB, and CDFW) during the regulatory permitting process. Most of the flow within the Bouquet Creek is from upstream waters. Per the project engineer, the water surface flows within the project reach will only contribute an additional 100 cubic feet per second, which represents approximately 0.5 percent of the overall flow within this reach of Bouquet Canyon Creek. Potential increases to surface flow rates due to project construction of impervious surfaces (e.g., roads, roofs, sidewalks, etc.) would be offset by the construction of desilting basins upstream of the realigned Bouquet Canyon Road. Since the project

would not indirectly affect downstream water quality or surface water flows, the project would not indirectly impact any UTS downstream of the study area.

As discussed above, the project would not impact Quino checkerspot butterfly, two-striped gartersnake, UTS , vernal pool fairy shrimp, or western spadefoot. Of the remaining 10 species, three species have a low potential to occur, one species has a moderate potential to occur, four species have a high potential to occur, and two species are presumed absent from the study area. These species are discussed in further detail below.

Low Potential Species

Three species were determined to have a low potential to occur on the study area based on the presence of low quality habitat, limited acreage of habitat, and lack of recent observations within the immediate vicinity. These species include California glossy snake, Townsend's big-eared bat, and southern grasshopper mouse. California glossy snake and southern grasshopper mouse are SSC. Although suitable habitat is present on the study area, these species have not been recorded within the vicinity of the study area (five- to 10-mile radius) in over 50 years, indicating that regionally significant populations of these species are not present. Therefore, the study area is not expected to support large populations of California glossy snake or southern grasshopper mouse and a loss of a few individuals, if present, would not be expected to reduce regional population numbers. Townsend's big-eared bat is a State Candidate Threatened species and an SSC. There is no suitable roosting habitat on the study area. This species could use the study area for foraging habitat since it uses a variety habitats, although it is a low potential since this species prefers mesic habitats. Impacts to these species would be less than significant and no mitigation measures are considered required.

Moderate Potential Species

California legless lizard, which is an SSC, was determined to have a moderate potential to occur on the study area based on the presence of low quality habitat on the study area and recent observations within the immediate vicinity. Although the study area supports suitable sandy wash habitat within Bouquet Canyon Creek, the habitat is considered low quality since the banks are infested with giant reed, leaving little open areas for the lizard to burrow and no leaf litter for protection. Since the study area supports low quality habitat, the study area is not expected to support large populations of this species and a loss of a few individuals, if present, would not be expected to reduce regional population numbers. Impacts to these species would be less than significant and no mitigation measures are considered required.

High Potential Species

Four species were determined to have a high potential to occur on the study area based on the presence of suitable habitat and recent observations within the immediate vicinity. These species include coastal whiptail, coast horned lizard, loggerhead shrike, and San Diego black-tailed jackrabbit, which are all SSC. None of these species were observed during any of the field surveys conducted on the study area. Coastal whiptail, coast horned lizard, loggerhead shrike, and San Diego black-tailed jackrabbit are highly mobile and the majority are expected to disperse to undeveloped land to the east of the proposed project. These species are not afforded a state or federal listing. Displacement or loss of a few individuals, if present, would not be expected to reduce regional population numbers. Impacts to these

Bouquet Canyon

Study Area

Grading Limits

Rare Plant Survey Areas

2018 Rare Plant Survey Area

2019 Rare Plant Survey Area

Rare Plant Locations

Calchortus clavatus var gracilis (496 individuals)

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0 375 Feet

N

Source: Aerial (NAIP, 2016)

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Impacts to Rare Plants

Figure 9

species would be less than significant and no mitigation measures are proposed. Loggerhead shrike eggs and young are protected under MBTA, which is discussed in Section 5.4.2 below.

Presumed Absent Species

Focused surveys for BUOW (SSC) and CAGN (federally threatened and SSC) were conducted in 2018. Survey results were negative, and these species are presumed absent from the study area. Therefore, no direct or indirect impacts are anticipated to these species.

Since the study area supports suitable BUOW habitat, a take avoidance survey is required prior to ground disturbance in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). An avoidance and minimization measure is included as BIO-2 in Section 6.0 below, which requires a take avoidance survey and avoidance of active nests and/or relocation of BUOW (if BUOWs are observed).

5.2 SENSITIVE VEGETATION COMMUNITIES

5.2.1 California Department of Fish and Wildlife Sensitive Vegetation Communities/Habitats

Less than Significant Impacts with Mitigation Incorporated

The study area supports native-dominated habitat totaling 29.19 acres, including big sagebrush scrub (1.91 acres), chamise chaparral/non-native grassland (2.98 acres), elderberry savanna (0.56 acre), Riversidean upland sage scrub (7.06 acres), Riversidean upland sage scrub/non-native grassland (13.10 acres), scrub oak chaparral (0.26 acre), scrub oak chaparral/non-native grassland (2.01 acres), southern north slope chaparral (0.34 acre), and southern willow scrub/giant reed stand (0.70 acre). The remainder of the study area (64.28 acres) supports habitat dominated by non-native species and sparsely vegetated developed, disturbed, and river wash.

Permanent impacts to vegetation are proposed for project development and to implement County-required fuel modification (Figure 10, *Impacts to Vegetation*). Permanent impacts are proposed to 28.68 acres of native-dominated habitat and 55.55 acres of habitat dominated by non-native species, developed, disturbed, and river wash (Table 3, *Impacts to Vegetation Communities*). Although some native vegetation will be avoided in Zones B and C, such as protected oak trees, all fuel modification impacts were assessed as permanent impacts.

Table 3
IMPACTS TO VEGETATION COMMUNITIES

Habitat Type (Holland/Oberbauer)	Existing (acres)	Permanent Impacts (acres)
Big Sagebrush Scrub	1.91	1.91
Chamise Chaparral/Non-native Grassland	2.98	2.77
Developed	9.37	4.50
Disturbed	5.32	3.83
Disturbed-Riversidean Upland Sage Scrub	0.62	0.54
Elderberry Savanna[1]	0.56	0.56
Giant Reed Stand	7.08	7.08
Mule Fat Scrub	0.27	0.27
Non-native Grassland	22.06	21.76
Non-native Grassland/Riversidean Upland Sage Scrub	7.75	7.34
Non-native Vegetation	8.06	7.06
Non-native Vegetation/Elderberry Savanna	0.97	0.97
Ornamental	2.69	2.11
Riversidean Upland Sage Scrub	7.06	6.90
Riversidean Upland Sage Scrub/Non-native Grassland	13.10	12.96
River Wash	0.36	0.36
Scrub Oak Chaparral	0.26	0.26
Scrub Oak Chaparral/Non-native Grassland	2.01	2.01
Southern North Slope Chaparral	0.34	0.34
Southern Willow Scrub/Giant Reed Stand[1]	0.70	0.70
	93.47	**84.23**

[1] Sensitive habitats pursuant to the California Department of Fish and Wildlife (CDFW) Natural Communities List (2018b).

Two of the vegetation communities described above are considered sensitive pursuant to CDFW (2018b): elderberry savanna (0.56 acre) and southern willow scrub/giant reed stand (0.70 acre; Table 3; Figure 10). Both communities will be permanently impacted. The sensitive natural community designation is generally reserved for high-quality habitats, such as those that lack invasive species, do not show signs of human-caused disturbance, and show signs of reproduction (i.e., sprouts and seedlings present). Mitigation for impacts to elderberry savanna is not proposed since the habitat is considered low quality. The elderberry savanna is small and isolated from other native habitat, with the exception of a small patch of big sagebrush scrub. The understory is dominated by non-native short-pod mustard, which is likely due to historic disturbance from ranching activities, fuel modification over the years, and its proximity to Bouquet Canyon Road. No sprouts or seedlings were noted during field surveys. Based on the low-quality characteristics of the elderberry scrub, impacts to these species would be less than significant and no mitigation is proposed. The southern willow scrub/giant reed stand on the project appears to be associated with relict floodplain conditions that no longer exist on the site. However, for the purpose of this biological technical report, this habitat is presumed to be regulated as CDFW jurisdiction. Although southern willow scrub/giant reed stand is considered low-quality habitat due to the prevalence of giant reed, the project will provide mitigation for permanent impacts to 0.70 acre through compensatory mitigation for impacts to CDFW jurisdiction as outlined in BIO-3 included in Section 6.0 below.

Source: Base Map Layers (NAIP, 2016)

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Impacts to Vegetation

Figure 10

5.2.2 California Department of Fish and Wildlife Riparian Habitat and Streambed

Less than Significant Impacts with Mitigation Incorporated

Bouquet Canyon Creek flows through the northern portion of the study area, which is considered a jurisdictional streambed pursuant to Section 1602 of the CFG Code as regulated by CDFW. The project would result in permanent impacts to 9.33 acres and temporary impacts to 0.47 acre of CDFW jurisdictional streambed and associated vegetation (Table 4, *Impacts to California Department of Fish and Wildlife Jurisdiction*; Figure 11, *Impacts to Jurisdictional Features*). The streambed is characterized as an ephemeral floodplain with a central channel that conveys the majority of flows through the site. Permanent impacts are necessary to construct the development, complete slope grading, implement County-required fuel modification, and construct a new flood control channel to the south of Bouquet Canyon Creek. The majority of the central channel within CDFW jurisdiction will be returned to pre-project topographic contours following completion of construction. Most of the permanent impacts to streambed-associated vegetation would be to giant reed, which is rated highly invasive by the California Invasive Plant Council (2006, 2007). Only small areas of native-dominated habitat would be permanently impacted, including southern willow scrub/giant reed stand and mule fat scrub. The remaining permanent impacts would be to mostly invasive giant reed stands and unvegetated river wash. The project would remove approximately 7.08 acres of giant reed stand, eliminating it as possible seed source to downstream habitats. Temporary impacts include those proposed to existing concrete within Bouquet Canyon Creek at the downstream (west) end and disturbance for bridge installation at the upstream (east) end.

Table 4
IMPACTS TO CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTION

Drainage	Existing (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Bouquet Canyon Creek	9.80	9.33	0.47

Impacts to CDFW jurisdiction will require a Section 1602 Stream Alteration Agreement from the CDFW, as described in BIO-3 included in Section 6.0 below. Compensatory streambed mitigation for permanent impacts to CDFW jurisdiction will be required as part of subsequent Section 1602 permitting requirements.

5.3 U.S. ARMY CORPS OF ENGINEERS/REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

Less than Significant Impacts with Mitigation Incorporated

Bouquet Canyon Creek is considered a jurisdictional streambed pursuant to Sections 404/401 of the CWA as regulated by USACE and RWQCB, respectively. The project would result in permanent impacts to 0.19 acre and temporary impacts to 0.46 acre of non-wetland WUS (Table 5, *Impacts to U.S. Army Corps of Engineers/Regional Water Quality Control Board Jurisdiction*; Figure 11). Permanent impacts are proposed within Bouquet Canyon Creek at the downstream (west) end for improvements to the outlet

for the proposed flood control channel and construction of a park as well as at the upstream (east) end to install a culvert associated within the new Bouquet Canyon Road alignment. The remainder of the Bouquet Canyon Creek central channel will be temporarily impacted to construct a new flood control channel to the south of Bouquet Canyon Creek. Temporary impact areas within Bouquet Canyon Creek will be returned to pre-project topographic contours following completion of construction.

Table 5
IMPACTS TO U.S. ARMY CORPS OF ENGINEERS/
REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

Drainage	Existing (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Bouquet Canyon Creek	0.65	0.19	0.46

Impacts to USACE/RWQCB jurisdiction will require a Section 404 permit from USACE and a Section 401 permit from RWQCB, as described in BIO-4 included in Section 6.0 below. Compensatory streambed mitigation for permanent impacts to USACE/RWQCB jurisdiction will be required as part of subsequent Section 404/401 permitting requirements.

5.4 WILDLIFE MOVEMENT AND MIGRATORY SPECIES

5.4.1 Wildlife Movement

Less than Significant

The study area is not part of a regional corridor and does not serve as a nursery site. The study area is not identified as being part of a local or regional corridor or linkage by the South Coast Missing Linkages (South Coast Wildlands 2008). The study area currently has no direct connectivity to two or more large blocks of habitat and is constrained by existing development. The study area does support native upland vegetation and small patches of native riparian vegetation, which provide habitat for local wildlife movement and migratory birds passing through the study area. Some reptiles, small mammals, and occasionally larger mammals may access the study area from undeveloped land to the east via Bouquet Canyon Creek or the ridgeline to the south of the Camp Joseph Scott facility. Birds may fly over existing development to access the study area for foraging and/or nesting. Therefore, the study area provides habitat for local wildlife movement, but does not serve as a regional wildlife corridor.

The study area is confined by existing development to the north, south, and west. Wildlife movement through Bouquet Canyon Creek downstream of the study area is limited since the stream becomes channelized to the north of Bouquet Canyon Road, just downstream (west) of the study area. Although vegetation will be removed from Bouquet Canyon Creek due to fuel modification requirements, the majority of the stream will be recontoured to pre-project topographic contours following construction. Although implementation of the project may result in some temporary disturbance to local wildlife movement from construction noise, the project would have a less than significant impact to wildlife movement and no mitigation measures would be required.

Bouquet Canyon

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Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Impact to Jurisdictional Features

Figure 11

5.4.2 Migratory Species

Less than Significant Impacts with Mitigation Incorporated

The study area has the potential to support songbird and raptor nests due to the presence of shrubs, ground cover, and trees on the study area. Project activities could disturb or destroy active migratory bird nests including eggs and young. Disturbance to or destruction of migratory bird eggs, young, or adults is in violation of the MBTA and is considered a potentially significant impact. The nesting season is generally defined as February 15 through August 31 for songbirds and January 15 to August 31 for raptors. An avoidance and minimization measure is provided as BIO-5 in Section 6.0 below, which would ensure the project is in compliance with MBTA regulations.

5.5 LOCAL POLICIES AND ORDINANCES

Less than Significant with Mitigation Incorporated

The project would remove 26 oak trees, including four scrub oaks, two blue oaks, and 20 Tucker oaks (Table 6, *Impacts to Oak Trees*; Figure 12, *Impacts to Oak Trees*). In addition, one Tucker oak would be subjected to major encroachment and two Tucker oaks would be subjected to minor encroachment. The remaining 35 oak trees would be completely avoided by the project.

Table 6
IMPACTS TO OAK TREES

Species Name	Common Name	Number of Trees			
		Removed	Major Encroachment	Minor Encroachment	Avoided
Quercus agrifolia	coast live oak	0	0	0	2
Quercus berberidifolia	scrub oak	4	0	0	2
Quercus douglasii	blue oak	2	0	0	0
Quercus john-tuckeri	Tucker oak	20	1	2	30
Quercus lobata	valley oak	0	0	0	1
	TOTAL	**26**	**1**	**2**	**35**

Impacts to City-protected oak trees will require an Oak Tree Permit prior to project construction to mitigate for proposed impacts. The conditions of the Oak Tree Permit will require native oak trees at a minimum of 24-inch box size to be planted for each protected oak tree removed and for each tree whose protected zone will be subject to major encroachment. The number of replacement trees required is dependent upon the circumference of the tree to be impacted. These guidelines are described in Subsection B of the Oak Tree Preservation Ordinance, reproduced in Table 7, *Number of Replacement Trees*. Replacement trees must be placed on the same property. If there is no appropriate location on site, the replacement trees may be donated to the City or the monetary value of the required replacement trees may be paid to the City at the discretion of the Director.

Table 7
NUMBER OF REPLACEMENT TREES

Circumference of Tree Destroyed (4 feet above ground level)	Number of Replacement Trees Required for Each Tree Destroyed
Under 12 inches	2
12 to 18 inches	3
18 to 24 inches	4
24 to 30 inches	5
30 to 36 inches	6
Over 36 inches	1 additional replacement tree per incremental increase of 6 inches

Source: City of Santa Clarita (2013)

For the purpose of this assessment, oak trees located within the grading footprint and/or Fuel Modification Zone A were considered impacted while oak trees located within Zones B or C were considered avoided. Based on the impacts to oak trees as quantified by the impact assessment, 27 oak trees will be removed or subjected to major encroachment and would require replacement trees (Table 8, *Oak Tree Mitigation*). In order to receive an Oak Tree Removal Permit for these impacts, it is anticipated the City will require 91 replacement trees to be planted or the equivalent monetary value of the replacement trees to be paid, as described in mitigation measure BIO-6 included in Section 6.0 below. Replacement trees must be approved by the City and consist of the following tree species: coast live oak, valley oak, canyon live oak (*Quercus chrysolepis*), or interior live oak (*Quercus wislizenii*).

Table 8
OAK TREE MITIGATION

Species Name	Common Name	Number of Trees	
		Removed/Major Encroachment	Replacement Trees Required
Quercus berberidifolia	scrub oak	4	9
Quercus douglasii	blue oak	2	19
Quercus john-tuckeri	Tucker oak	21	63
	TOTAL	**27**	**91**

Thirty-seven oak trees will be completely avoided or subject to minor encroachment and would not require replacement trees. During construction, avoided trees and trees subject to encroachment will require protection measures, including but not limited to those outlined within Section VII. Standards for Performance of Permitted Work of the Oak Tree Preservation Guidelines (City 1990).

5.6 ADOPTED HABITAT CONSERVATION PLANS

No Impacts

The study area is not located within any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. As such, implementation of the project would not conflict with any adopted habitat conservation plans.

Bouquet Canyon

Grading Limits
Study Area
Quercus agrifolia
Quercus berberidifolia
Quercus douglasii
Quercus john-tuckeri
Quercus lobata

1 2 3 4 5 6 7 8 9 15 16 20 21 22 24 25 26 27 31 32 41 46 47 49 50 51 56 57 58 59 60 61 62 63 64

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0 375 Feet

Source: Base Map Layers (Nearmap, 2017)

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Impacts to Oak Trees

Figure 12

6.0 MITIGATION MEASURES

The following provides recommended measures intended to minimize or avoid impacts to biological resources:

BIO-1 Mitigation for project impacts to slender mariposa lily shall include one or more of the following:

- Prior to construction, a mitigation plan shall be developed that describes methods to mitigate for impacts to slender mariposa lily at a 1:1 ratio. The mitigation plan shall include a description of the mitigation site, bulb collection and planting methods, maintenance and monitoring requirements, and performance standards to measure the success of the mitigation. Slender mariposa lily bulbs shall be collected at the end of the growing season and prior to ground disturbance, or bulbs shall be obtained from a native plant nursery if available. The bulbs shall be planted within an appropriate on-site or off-site mitigation area, which will be conserved as open space in perpetuity.

- Payment into a mitigation bank and/or in-lieu fee program that has mitigation available for slender mariposa lily at a 1:1 ratio; and/or

- Preservation of land that contains slender mariposa lily at a 1:1 ratio.

Mitigation for significant impacts to slender mariposa lily shall be implemented in consultation with the City and CDFW prior to construction.

BIO-2 **Burrowing Owl**: In compliance with the CDFW *Staff Report on Burrowing Owl Mitigation* (2012), a take avoidance survey shall be conducted on the study area within 14 days prior to ground disturbance to determine presence of BUOW. If the take avoidance survey is negative and BUOW is confirmed absent, then ground-disturbing activities shall be allowed to commence, and no further mitigation would be required.

If BUOW are observed during the take avoidance survey, active burrows shall be avoided by the project in accordance with the CDFW's Staff Report (2012). The CDFW shall be immediately informed of any BUOW observations. A Burrowing Owl Protection and Relocation Plan (plan) shall be prepared by a qualified biologist, which must be sent for approval by CDFW prior to initiating ground disturbance. The plan shall detail avoidance measures that shall be implemented during construction and passive or active relocation methodology. Relocation shall only occur outside of the nesting season (September 1 through January 31).

BIO-3 **Southern Willow Scrub/Giant Reed Stand and CDFW Jurisdiction**: Prior to the City's issuance of a grading permit, the Project Applicant shall demonstrate that a Streambed Alteration Agreement has been issued by CDFW. Temporary impacts to CDFW jurisdiction shall be returned to pre-project topographic contours once the project has been completed. Permanent impacts to CDFW jurisdiction for southern willow scrub/giant reed stand (0.70 acre) shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of CDFW jurisdictional streambed at ratio of

no less than 1:1. Given that the remaining portion of Bouquet Canyon Creek is dominated by invasive giant reed stands, which is of extremely low biological function and value and contributes to downstream infestation of giant reed, the remaining permanent impacts to CDFW jurisdiction (8.63 acres) shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of CDFW jurisdictional streambed at a ratio of no less than 0.5:1. Best Management Practices (BMPs) to minimize and avoid impacts to CDFW jurisdiction during and after construction will be addressed as part in the Streambed Alteration Agreement. Minimization and avoidance measures may include, but are not limited to, the following:

- Construction-related equipment will be stored in developed areas, outside of drainages. No equipment maintenance will be done within or adjacent to the drainage.
- Mud, silt, spoil sites, raw cement, asphalt, or other pollutants from construction activities will not be placed within or adjacent to the drainage.
- Open trenches or other excavated areas will be properly secured at the end of the day to avoid entrapment of animals, or an escape ramp will be provided.
- To avoid attracting predators during construction, the project will be kept clean of debris to the extent possible. All food-related trash items will be enclosed in sealed containers and regularly removed from site.
- Construction personnel will strictly limit their activities, vehicles, equipment and construction material to the proposed project footprint, staging areas, and designated routes of travel.
- Exclusion fencing will be installed to demarcate the limits of disturbance. The exclusion fencing should be maintained until the completion of construction activities.
- To the extent feasible, construction will be conducted outside of the nesting bird season (see MM BIO-5 below).

BIO-4 **USACE and RWQCB Jurisdiction**: Prior to the City's issuance of a grading permit, the Project Applicant shall demonstrate that the appropriate regulatory permits have been issued by USACE and RWQCB. Temporary impacts to WUS shall be returned to pre-project topographic contours once the project has been completed. Compensatory mitigation for permanent impacts to WUS shall be required as part of subsequent permitting requirements. Permanent impacts to WUS shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of jurisdictional streambed at a ratio of no less than 1:1. BMPs to minimize and avoid impacts to WUS during and after construction will be addressed as part of the USACE and RWQCB permitting process. Minimization and avoidance measures may include, but are not limited to, the following:

- Construction-related equipment will be stored in developed areas, outside of the drainage. No equipment maintenance will be done within or adjacent to the drainage.

- Source control and treatment control BMPs will be implemented to minimize the potential contaminants that are generated during and after construction. Water quality BMPs will be implemented throughout the project to capture and treat potential contaminants.

- Substances harmful to aquatic life will not be discharged into the drainage. All hazardous substances will be properly handled and stored.

- A Storm Water Pollution Prevention Plan will be prepared to prevent sediment from entering the drainage during construction.

- To avoid attracting predators during construction, the project will be kept clean of debris to the extent possible. All food-related trash items will be enclosed in sealed containers and regularly removed from site.

- Construction personnel will strictly limit their activities, vehicles, equipment and construction material to the proposed project footprint, staging areas, and designated routes of travel.

- Exclusion fencing will be installed to demarcate the limits of disturbance. The exclusion fencing should be maintained until the completion of construction activities.

BIO-5 **Nesting Birds:** Construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the general bird nesting season for migratory birds, which is February 15 through August 31 for songbirds and January 15 to August 31 for raptors.

If construction activities (i.e., earthwork, clearing, and grubbing) must occur during the general bird nesting season for migratory birds and raptors, a qualified biologist shall perform a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to migratory birds and raptors afforded protection under the MBTA and CFG Code. The pre-construction survey shall be performed no more than seven days prior to the commencement of construction activities. The results of the pre-construction survey shall be documented by the qualified biologist. If construction is inactive for more than seven days, an additional survey shall be conducted.

If the qualified biologist determines that no active migratory bird or raptor nests occur, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, no impacts within 300 feet (500 feet for raptors) of the active nest shall occur until the young have fledged the nest and the nest is confirmed to no longer be active, or as determined by the qualified biologist. The biological monitor may modify the buffer or propose other recommendations in order to minimize disturbance to nesting birds.

BIO-6 **Protected Oak Trees:** Prior to construction, the Applicant shall obtain an Oak Tree Permit in accordance with the City's Oak Tree Preservation ordinance (City 2013) to impact protected oak trees. The following measures shall be required:

- **Impacted Trees:** All tree removals shall be conducted in the presence of a qualified arborist approved by the City. The Applicant shall replace impacted City-protected oak trees proposed for removal by planting replacement trees on-site, donating trees to the City, or to pay the City an equivalent monetary value of the replacement trees. Replacement ratios shall be determined based requirements described in Subsection B of the Oak Tree Preservation Ordinance (City 2013). Unless otherwise approved by the City, replacement trees shall be at a minimum of 24-inch box size and consist of the following tree species: coast live oak, valley oak, canyon live oak, or interior live oak. All replacement trees shall be approved by the City.

- **Encroached Trees:** The Applicant shall notify the City and qualified arborist 48 hours prior to beginning work within the protected zone of an oak tree. All work conducted within the protected zone shall be monitored by a qualified arborist and verified by the City. Work shall be done with hand tools only. Once work within the protected zones is complete, the qualified arborist shall submit a certification letter to the City within 10 working days demonstrating the work was conducted in accordance with project's permit. Other protection measures may be required by the City.

- **Encroached/Avoided Trees:** A minimum five-foot chain link fence in concrete footings with posts installed every eight feet and two feet deep shall be installed at the outermost edge of the protected zone of each oak or oak grove. Trees on steep slopes that will not be impacted by vegetation removal or graded may be exempt from fencing requirement. Fencing shall be inspected and approved by the City prior to construction initiation. Signs shall be placed on the fence in four locations around each tree or every 50 feet around oak groves. Signs shall be a minimum of two feet by two with the following language: "Warning: This fence is for the protection of this tree and shall not be removed or relocated without written authorization for the City of Santa Clarity Community Development Department." The fence shall remain in place for the duration of construction and shall not be removed until receiving written authorization from the City. Planting within the protected zone is discouraged. If planting within the protected zone, only drought tolerant species shall be permitted and no spray-type irrigation shall be used. A maintenance and care program shall be implemented to ensure continued health and care of oak trees on the proposed development. Other protection measures may be required by the City.

7.0 CERTIFICATION/QUALIFICATION

The following individuals contributed to the fieldwork and/or preparation of this report:

Tara Baxter	B.A., Ecology and Evolutionary Biology, University of Colorado at Boulder, 2009
Ezekiel Cooley	B.S., Natural Resources with an emphasis in Wildlife, Central Michigan University, 2004
Amir Morales	B.S., Hydrological Sciences, Minor Geographic Information Systems, University of California Santa Barbara, 2001
Aleksandra Richards	M.A., International Relations, University of San Diego, 2010
	B.A., Communications with an emphasis in Print Journalism, California State University Fullerton, 2008
Lauren Singleton	M.S., Biology with an emphasis in Ecology and Entomology, California State University Long Beach, 2014
	B.S., Biology with an emphasis in Ecology, Minor Chemistry, California State University Long Beach, 2010
Daniel Torres	B.S., Ecology and Natural Resources, Rutgers University, 2013

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Appendix A

Plant Species Observed

Appendix A
Plant Species Observed

Family	Scientific Name	Common Name
GYMNOSPERMS		
Cupressaceae	*Cupressus sempervirens**	Italian cypress
ANGIOSPERMS – EUDICOTS		
Adoxaceae	*Sambucus nigra* ssp. *caerulea*	blue elderberry
Aizoaceae	*Carpobrotus edulis**	hottentot-fig
Anacardiaceae	*Malosma laurina*	laurel sumac
	Rhus aromatica	basket-brush
	Rhus ovata	sugar bush
	*Schinus molle**	Peruvian pepper tree
	Toxicodendron diversilobum	poison oak
Apocynaceae	*Nerium oleander**	oleander
Asteraceae	*Acourtia microcephala*	sacapellote
	Ambrosia acanthicarpa	annual bur-sage
	Artemisia californica	California sagebrush
	Artemisia douglasiana	mugwort
	Artemisia tridentata	Great Basin sagebrush
	Baccharis pilularis	coyote brush
	Baccharis salicifolia	mule fat
	*Centaurea benedicta**	blessed thistle
	*Centaurea melitensis**	tocalote
	Corethrogyne filaginifolia	common sand aster
	Deinandra fasciculata	fascicled tarplant
	Encelia farinosa	brittlebush
	Ericameria pinifolia	pine goldenbush
	Erigeron canadensis	horseweed
	Eriophyllum confertiflorum	golden-yarrow
	Gutierrezia californica	California matchweed
	Hazardia squarrosa	saw-toothed goldenbush
	Helianthus annuus	western sunflower
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	goldenbush
	Iva axillaris	povertyweed
	*Lactuca serriola**	wild lettuce
	Lepidospartum squamatum	scale-broom
	Malacothrix saxatilis	cliff aster
	Osteospermum sp.*	African daisy
	Pseudognaphalium californicum	California everlasting
	*Pseudognaphalium luteoalbum**	everlasting cudweed
	*Silybum marianum**	milk thistle
	*Sonchus asper**	prickly sow thistle
	Stephanomeria virgata	virgate wreath-plant
	*Taraxacum officinale**	dandelion
	Uropappus lindleyi	silver puffs
Boraginaceae	*Amsinckia intermedia*	rancher's fiddleneck
	Emmenanthe penduliflora	whispering bells
ANGIOSPERMS – EUDICOTS (cont.)		
Boraginaceae (cont.)	*Eucrypta chrysanthemifolia*	common eucrypta
	Eriodictyon crassifolium	felt-leaf yerba santa
	Heliotropium curassavicum var. *occulatum*	salt heliotrope

Appendix A (cont.)
Plant Species Observed

Family	Scientific Name	Common Name
	Phacelia brachyloba	short lobed phacelia
	Phacelia cicutaria	caterpillar phacelia
	Phacelia distans	wild heliotrope
Brassicaceae	*Hirschfeldia incana**	short-pod mustard
	*Sisymbrium irio**	London rocket
	*Sisymbrium orientale **	hare's ear cabbage
Cactaceae	*Opuntia basilaris*	beavertail cactus
Chenopodiaceae	*Atriplex canescens*	fourwing saltbush
	*Atriplex semibaccata**	Australian saltbush
	Chenopodium californicum	California pigweed
	*Chenopodium murale**	nettle-leaf goosefoot
	*Salsola tragus**	Russian thistle
Convolvulaceae	*Calystegia peirsonii*[1]	Peirson's morning-glory
	Cuscuta sp.	dodder
Crassulaceae	*Dudleya lanceolata*	coastal dudleya
Cucurbitaceae	*Cucurbita foetidissima*	calabazilla
	Marah macrocarpa	wild cucumber
Euphorbiaceae	*Euphorbia albomarginata*	rattlesnake weed
	Croton setigerus	dove weed
	*Euphorbia serpens**	matted sandmat
	Stillingia linearifolia	linear leaf stillingia
Fabaceae	*Acmispon glaber*	deerweed
	Astragalus pomonensis	Pomona locoweed
	Lupinus bicolor	miniature lupine
	Lupinus succulentus	arroyo lupine
	*Melilotus indicus**	Indian sweet clover
	*Robinia pseudoacacia**	black locust
Fagaceae	*Quercus berberidifolia*	scrub oak
	Quercus douglasii	blue oak
	Quercus john-tuckeri	Tucker oak
	Quercus lobata	valley oak
Geraniaceae	*Erodium cicutarium**	redstem filaree
Lamiaceae	*Marrubium vulgare**	horehound
	Salvia apiana	white sage
	Salvia columbariae	chia
	Salvia leucophylla	purple sage
	Salvia mellifera	black sage
	Trichostema lanatum	woolly blue-curls
ANGIOSPERMS – EUDICOTS (cont.)		
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow
	*Malva parviflora**	cheeseweed
	Malvella leprosa	alkali-mallow
Meliaceae	*Melia azaderach**	chinaberry
Mytaceae	*Eucalyptus camaldulensis**	river red gum
	*Eucalyptus globulus**	blue gum
	*Eucalyptus polyanthemos**	silver dollar gum
Nyctaginaceae	*Mirabilis laevis ssp. crassifolia*	wishbone bush
Onagraceae	*Clarkia purpurea*	purple clarkia
	Clarkia unguiculata	elegant clarkia

Appendix A (cont.)
Plant Species Observed

Family	Scientific Name	Common Name
	Eulobus californicus	California primrose
Orobanchaceae	*Castilleja exserta*	purple owl's clover
Papaveraceae	*Eschscholzia californica*	California poppy
Plantaginaceae	*Penstemon centranthifolius*	scarlet bugler
Polemoniaceae	*Allophyllum divaricatum*	purple fasle gilia
	Eriastrum densifolium	giant eriastrum
	Gilia angelensis	gilia
Polygonaceae	*Chorizanthe staticoides*	Turkish rugging
	Eriogonum fasciculatum	buckwheat
	*Polygonum aviculare**	common knotweed
	*Rumex crispus**	curly dock
Portulacaceae	*Portulaca oleracea**	common purslane
Ranunculaceae	*Delphinium parryi*	San Bernardino larkspur
Rhamnaceae	*Rhamnus crocea*	spiny redberry
Rosaceae	*Adenostoma fasciculatum*	chamise
	Heteromeles arbutifolia	toyon
	Prunus ilicifolia	holly-leafed cherry
Rubiaceae	*Galium angustifolium*	narrow-leaved bedstraw
Salicaceae	*Populus fremontii* ssp. *fremontii*	Fremont cottonwood
	Salix gooddingii	Goodding's black willow
	Salix laevigata	red willow
Santalaceae	*Phoradendron* sp.	mistletoe
Sapindaceae	*Koelreuteria paniculata**	goldenrain tree
Scrophulariaceae	*Scrophularia californica*	California figwort
	*Verbascum virgatum**	wand mullein
Simaroubaceae	*Ailanthus altissima**	tree-of-heaven
Solanaceae	*Datura wrightii*	jimson weed
	*Nicotiana glauca**	tree tobacco
	Nicotiana quadrivalvis	Indian tobacco
	Solanum xanti	purple nightshade
Tamaricaceae	*Tamarix ramosissima**	saltcedar
Ulmaceae	*Ulmus pumila**	Siberian elm
Urticaceae	*Urtica dioica*	stinging nettle
Verbenaceae	*Verbena lasiostachys*	verbena
ANGIOSPERMS – EUDICOTS (cont.)		
Vitaceae	*Vitis vinifera**	cultivated grape
Zygophyllaceae	*Tribulus terrestris**	puncture vine
ANGIOSPERMS – MONOCOTS		
Agavaceae	*Hesperoyucca whipplei*	Our Lord's candle
Arecaceae	*Washingtonia robusta**	Mexican fan palm
Liliaceae	*Calochortus clavatus* var. *clavatus*[2]	club-haired mariposa lily
	Calochortus clavatus var. *gracilis*[3]	slender mariposa lily
	Calochortus splendens	lilac mariposa lily
	Calochortus venustus	butterfly mariposa lily

Appendix A (cont.)
Plant Species Observed

Family	Scientific Name	Common Name
Poaceae	*Arundo donax**	giant reed
	*Avena barbata**	slender oat
	*Avena fatua**	wild oats
	*Bromus diandrus**	common ripgut grass
	*Bromus hordeaceus**	soft brome
	Bromus madritensis ssp. *rubens* *	red brome
	*Bromus tectorum**	cheatgrass
	*Cynodon dactylon**	Bermuda grass
	Distichlis spicata	saltgrass
	Elymus condensatus	giant wild rye
	*Festuca myuros**	fescue
	*Hordeum murinum**	hare barley
	*Polypogon monspeliensis**	annual beardgrass
	*Schismus barbatus**	Mediterranean grass
Themidaceae	*Bloomeria crocea*	common goldenstar
	Dichelostemma capitatum	blue dicks

* Non-native species
[1] California Rare Plant Rank (CRPR) 4.2
[2] CRPR 4.3
[3] CRPR 1B.2

Appendix B

Animal Species Observed or Detected

Appendix B
Animal Species Observed or Detected

Order	Family	Scientific Name	Common Name
Insects			
Lepidoptera	Pieridae	*Anthocharis sara sara*	Sara orangetip
	Riodinidae	*Apodemia mormo virgulti*	Behr's metalmark
Reptiles			
Squamata	Phrynosomatidae	*Sceloporus occidentalis*	western fence lizard
Birds			
Accipitriformes	Accipitridae	*Accipiter cooperii*	Cooper's hawk
		Buteo jamaicensis	red-tailed hawk
	Cathartidae	*Cathartes aura*	turkey vulture
Apodiformes	Apodidae	*Aeronautes saxatalis*	white-throated swift
	Trochilidae	*Calypte anna*	Anna's hummingbird
		Calypte costae	Costa's hummingbird
		Selasphorus sp.	hummingbird sp.
Charadriiformes	Charadriidae	*Charadrius vociferus*	killdeer
Columbiformes	Columbidae	*Columba livia*	rock pigeon
		Streptopelia decaocto	Eurasian collared-dove
		Zenaida macroura	mourning dove
Cuculiformes	Cuculidae	*Geococcyx californianus*	greater roadrunner
Falconiformes	Falconidae	*Falco sparverius*	American kestrel
Galliformes	Odontophoridae	*Callipepla californica*	California quail
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Alaudidae	*Eremophila alpestris*	horned lark
	Cardinalidae	*Passerina caerulea*	blue grosbeak
		Pheucticus melanocephalus	black-headed grosbeak
		Piranga ludoviciana	western tanager
	Corvidae	*Aphelocoma californica*	California scrub-jay
		Corvus brachyrhynchos	American crow
		Corvus corax	common raven
	Emberizidae	*Aimophila ruficeps*	rufous-crowned sparrow
		Chondestes grammacus	lark sparrow
		Melospiza melodia	song sparrow
		Pipilo crissalis	California towhee
		Pipilo maculatus	spotted towhee
		Zonotrichia leucophrys	white-crowned sparrow
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
		Spinus tristis	American goldfinch
	Hirundinidae	*Hirundo rustica*	barn swallow
		Petrochelidon pyrrhonota	cliff swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Icterus cucullatus	hooded oriole
		Molothrus ater	brown-headed cowbird
		Sturnella neglecta	western meadowlark
	Mimidae	*Mimus polyglottos*	northern mockingbird
		Toxostoma redivivum	California thrasher
	Paradoxornithidae	*Chamaea fasciata*	wrentit
	Paridae	*Baeolophus inornatus*	oak titmouse

Appendix B (cont.)
Animal Species Observed or Detected

Order	Family	Scientific Name	Common Name
Birds (cont.)			
Passeriformes (cont.)	Parulidae	*Cardellina pusilla*	Wilson's warbler
		Geothlypis trichas	common yellowthroat
		Oreothlypis celata	orange-crowned warbler
		Setophaga coronate	yellow-rumped warbler
	Passerellidae	*Aimophila ruficeps*	rufous-crowned sparrow
		Melospiza melodia	song sparrow
		Melozone crissalis	California towhee
		Pipilo maculatus	spotted towhee
		Zonotrichia leucophrys	white-crowned sparrow
	Polioptilidae	*Polioptila caerulea*	blue-gray gnatcatcher
	Ptilogonatidae	*Phainopepla nitens*	Phainopepla
	Sturnidae	*Sturnus vulgaris*	European starling
	Troglodytidae	*Thryomanes bewickii*	Bewick's wren
	Turdidae	*Sialia mexicana*	western bluebird
		Turdus migratorius	American robin
	Tyrannidae	*Contopus sordidulus*	western wood-pewee
		Empidonax difficilis	pacific-slope flycatcher
		Myiarchus cinerascens	ash-throated flycatcher
		Sayornis nigricans	black phoebe
		Sayornis saya	Say's phoebe
		Tyrannus verticalis	western kingbird
		Tyrannus vociferans	Cassin's kingbird
Piciformes	Picidae	*Colaptes auratus*	northern flicker
		Melanerpes formicivorus	acorn woodpecker
		Picoides nuttallii	Nuttall's woodpecker
		Picoides pubescens	Downy woodpecker
Mammals			
Carnivora	Canidae	*Canis latrans*	coyote
	Felidae	*Lynx rufus*	bobcat
	Procyonidae	*Procyon lotor*	raccoon
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Sciuridae	*Otospermophilus beecheyi*	California ground squirrel

Appendix C

Representative Site Photographs

Photograph 1: Overview of the study area, facing west. Note the flatter portions of the study area support mostly non-native grass species due to historical ranching activities and the steeper hillsides support native Riversidean upland sage scrub.

Photograph 2: View of the mule fat scrub community, facing south.

Photograph 3: View of the non-native vegetation community (left) and elderberry savanna community (right), facing west.

Photograph 4: View of the big sagebrush scrub community (foreground) and giant reed stand community (background), facing southwest.

Note: See Figure 5 for photograph locations.

Source: HELIX 2017

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Photograph 5: View of the non-native vegetation community (left) and the southwestern willow scrub/giant reed stand community (right), facing north.

Photograph 6: View of non-native grassland community (left) and Riversidean upland sage scrub community (right), facing south. The non-native grassland/Riversidean upland sage scrub can be seen on the hillsides in the background.

Photograph 7: View of the Riversidean upland sage scrub/non-native grassland community (left) and disturbed habitat (right), facing south.

Photograph 8: View of the scrub oak chaparral community, facing southeast.

Note: See Figure 5 for photograph locations.

Source: HELIX 2017

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Appendix D

Burrowing Owl Focused Survey Report

HELIX Environmental Planning, Inc.
16485 Laguna Canyon Road
Suite 150
Irvine, CA 92618
949.234.8792 **tel.**
619.462.0552 **fax**
www.**helixepi**.com

September 7, 2018 IPQ-25

Mr. Scott Covington
Integral Communities
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

Subject: 2018 Burrowing Owl (*Athene cunicularia*) Survey Report for the Bouquet Canyon Road Project

Dear Mr. Covington:

This letter report presents the results of the 2018 focused burrowing owl (*Athene cunicularia*; BUOW) survey conducted by HELIX Environmental Planning, Inc. (HELIX) for the Bouquet Canyon Road Project (project) located in the City of Santa Clarita, Los Angeles County, California. The survey was conducted in accordance with the California Department of Fish and Wildlife (CDFW; previously California Department of Fish and Game [CDFG]) Staff Report on Burrowing Owl Mitigation (CDFG 2012). This letter report describes the methods used to perform the survey and the survey results.

PROJECT SITE LOCATION

The 78.10-acre project site is generally located 6.9 miles to the east of Interstate 5 and 3.8 miles to the northwest of California State Route 14 in the City of Santa Clarita (Figure 1, *Regional Location*). The project site is within Section 6 of Township 4 North, Range 15 West of the Mint Canyon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 2, *Vicinity Map*). Specifically, the project site is located directly south of the intersection of David Way and Bouquet Canyon Road (Figure 3, *Aerial Photograph*).

PROJECT SITE DESCRIPTION

The project site is located in the foothills of the Sierra Pelona Mountains. The topography in the southern and western portions of the project site is predominantly steep hillsides, while the northern portion is primarily flat. Elevations on the project site range from approximately 1,365 feet above mean sea level (AMSL) near the northwest corner of the project to approximately 1,520 feet above AMSL near the southeastern corner. The steep hills throughout the southern and western portions of the site are predominated by Riversidean upland sage scrub while the flatter portions of the project site are dominated by non-native grassland. Seven soil types are mapped on the project site, including Hanford

sandy loam (HcC), Metz loam sandy (MfA), Mocho loam (MpA), Ojai loam (OgF), Saugus loam (ScF2), Sorrento loam (SsA), and Yolo loam (YoC).

Immediate surrounding land uses include existing residential development to the north and west, a mixture of undeveloped land and residential development to the south, and undeveloped land and juvenile detention schools to the east (Figure 3). The project site is located approximately 0.20 mile to the southeast of Haskell Canyon Open Space and 1.40 miles to the south of Angeles National Forest.

Representative photographs of the project site are shown on Attachment A, *Site Photographs*.

METHODS

The focused BUOW survey was conducted according to the CDFW BUOW survey guidelines (CDFG 2012), which includes Part I Habitat Assessment and Focused Burrow Survey and Part II Focused BUOW Surveys. The CDFW BUOW survey guidelines are described in further detail below.

Part I: Habitat Assessment and Focused Burrow Survey

Prior to conducting the habitat assessment, HELIX consulted the California Natural Diversity Database (CNDDB) to determine the nearest BUOW occurrence(s). A habitat assessment was conducted by HELIX biologists Lauren Singleton and Daniel Torres on March 27, 2018, to determine whether the project site supports suitable BUOW habitat. A focused burrow survey was conducted concurrently with the habitat assessment. All suitable burrows (i.e., greater than 11 centimeters [cm] in height and width and greater than 150 cm in depth) and burrow surrogates were recorded using a handheld Global Positioning System (GPS) unit (Figure 4, *Suitable Burrow and Transect Locations*). The habitat assessment and focused burrow survey were conducted prior to commencement of the BUOW focused surveys. The assessment was conducted on the project site and within a 150-meter (approximately 500-foot) buffer zone around the periphery of the project site (survey area). The survey area was slowly walked and assessed for suitable BUOW habitat, including:

- disturbed low-growing vegetation within grassland and shrublands (less than 30 percent canopy cover);
- gently rolling or level terrain;
- areas with abundant small mammal burrows, especially California ground squirrel (*Otospermophilus beecheyi*) burrows;
- fence posts, rocks, or other low perching locations; and
- man-made structures, such as earthen berms, debris piles, and cement culverts.

All potential burrows were checked for signs of recent owl occupation. Signs of occupation include:

- pellets/casting (regurgitate fur, bones, and/or insect parts);
- white wash (excrement); and/or
- feathers.

Part II: Locating Burrowing Owls

Since suitable habitat and burrows were observed within the survey area, focused BUOW surveys were conducted to determine whether the survey area supports BUOW. The focused surveys consisted of four breeding season surveys that were performed by HELIX biologist Ezekiel Cooley between April 13 and June 26, 2018. The surveys were spaced at least three weeks apart, with at least one survey conducted between February 15 and April 15 and three surveys conducted between April 15 and July 15 (Table 1, *Survey Information*)

The biologist walked transects spaced no greater than 20 meters apart (approximately 65 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area (Figure 4). The biologist walked slowly and methodically, closely checking suitable habitat within the survey area for BUOW diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance) and individual BUOW. If observed, BUOW sign and BUOW observations were recorded with a GPS unit. Inaccessible areas of the survey area were visually assessed using binoculars.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Start/Stop Time	Start/Stop Weather Conditions	Survey Results
HA[1]	03/27/18	Lauren Singleton Daniel Torres	0800-1300	54°F, wind 6-7 mph, 0% clouds 66°F, wind 6-7 mph, 0% clouds	Suitable habitat and burrows present.
1	04/13/18	Ezekiel Cooley	0630-1000	48°F, wind 2-3 mph, 100% clouds 63°F, wind 2-4 mph, 5% clouds	No BUOW detected.
2	05/11/18	Ezekiel Cooley	0625-1000	58°F, wind 2-3 mph, 100% clouds 61°F, wind 1-2 mph, 100% clouds	No BUOW detected.
3	06/08/18	Ezekiel Cooley	0600-1000	56°F, wind 2-3 mph, 0% clouds 73°F, wind 1-2 mph, 0% clouds	No BUOW detected.
4	06/26/18	Ezekiel Cooley	0630-0950	61°F, wind 0-1 mph, 0% clouds 70°F, wind 0-1 mph, 5% clouds	No BUOW detected.

[1] Part I Habitat Assessment and focused burrowing survey.

RESULTS

No BUOW have been previously recorded on the project site. The nearest BUOW observation record in CNDDB was observed in 2005, approximately three miles to the southeast of the survey area (California Department of Fish and Wildlife 2018).

Suitable BUOW habitat was observed within the survey area, including low-growing vegetation within disturbed areas and non-native grasslands (Attachment A). Several burrows that could potentially be used by BUOW were observed within the survey area and suitable foraging habitat was observed within and adjacent to the survey area. No BUOW or sign of BUOW occupation were observed within the survey area during the four focused surveys. Therefore, BUOW do not currently occupy the survey area. Observed burrow locations and transects walked are show on Figure 4.

CONCLUSION

No BUOW were observed or detected within the survey area during the focused surveys. Burrows with potential to support BUOW were noted on the project site, but no sign of BUOW occupation was observed. A take avoidance (pre-construction) survey is required to be conducted within 14 days prior to ground disturbance in accordance with CDFW Staff Report on Burrowing Owl Mitigation (2012). If ground-disturbing activities are delayed more than 14 days after the pre-construction survey has been completed, the project site must be resurveyed.

If you have any questions regarding the information presented in this letter report, please contact Ezekiel Cooley (EzekielC@helixepi.com) at (949) 234-8770.

Sincerely,

Ezekiel Cooley
Biologist

Enclosures:

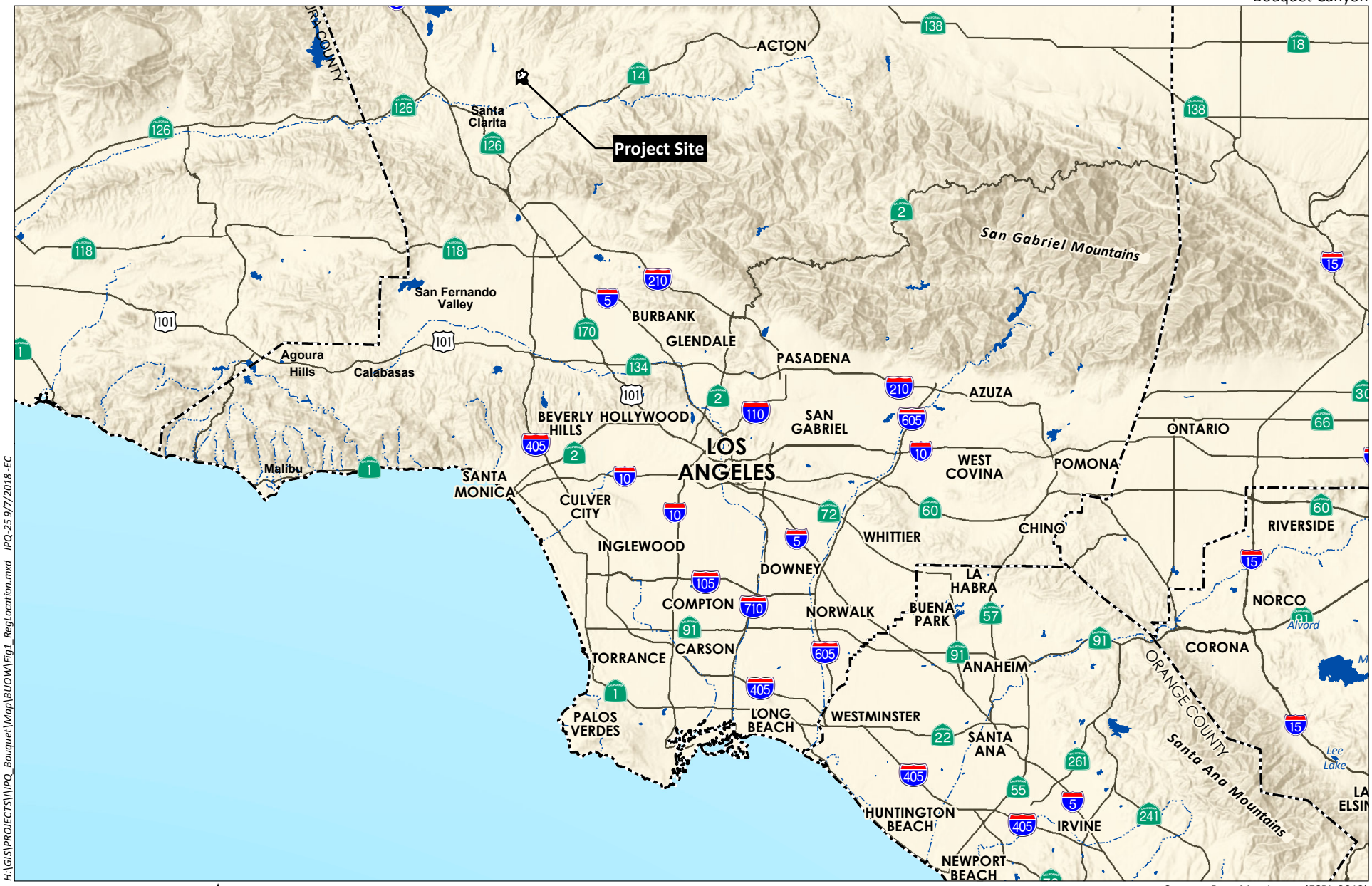
Figure 1: Regional Location
Figure 2: Vicinity Map
Figure 3: Aerial Photograph
Figure 4: Suitable Burrow and Transect Locations
Attachment A: Site Photographs

REFERENCES

California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resource Agency. March 7.

California Department of Fish and Wildlife. 2018. California Natural Diversity Database and Rarefind. California Department of Fish and Wildlife: Sacramento, California. Retrieved from: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed August 22, 2018.

Bouquet Canyon



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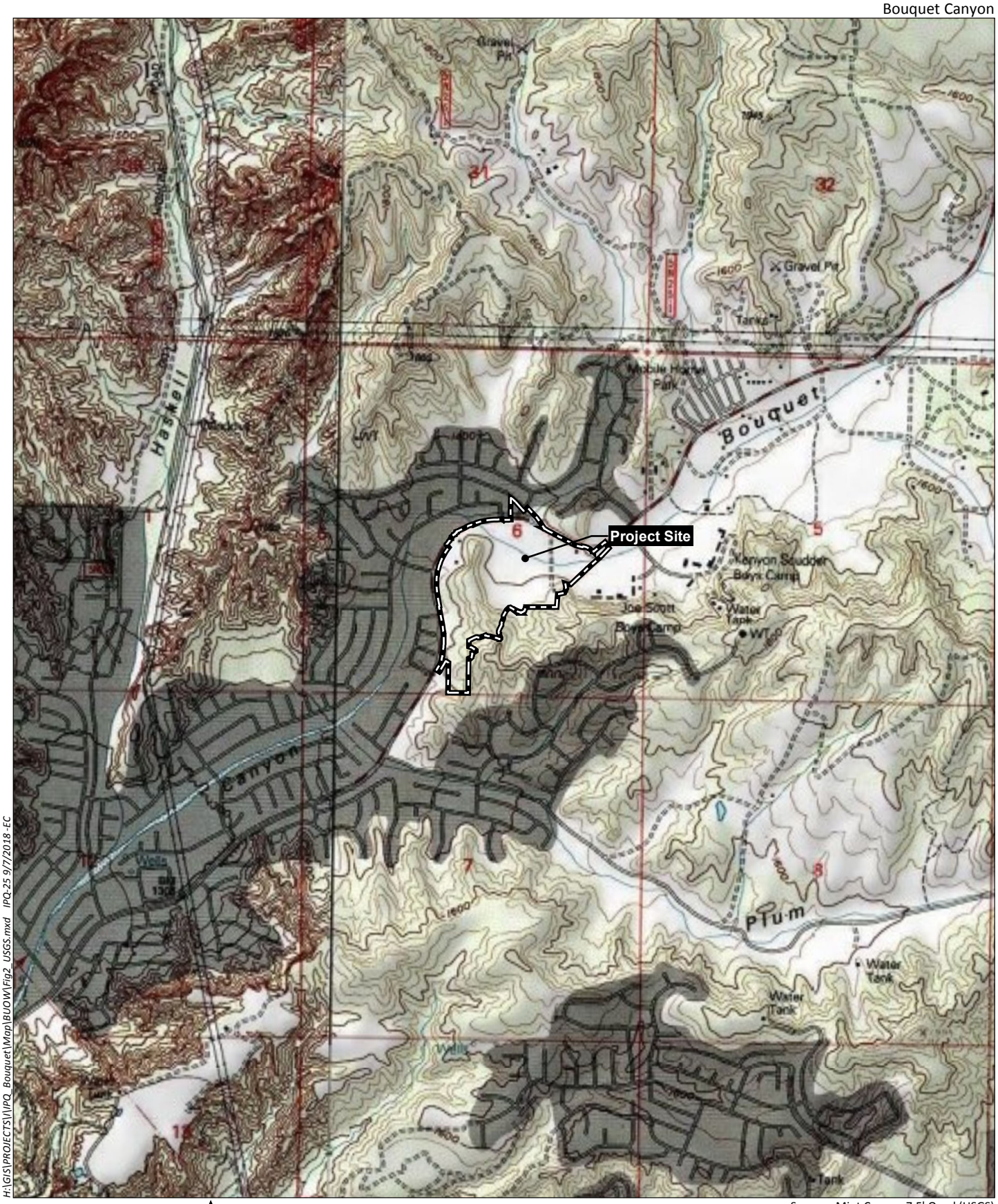
0 10 Miles

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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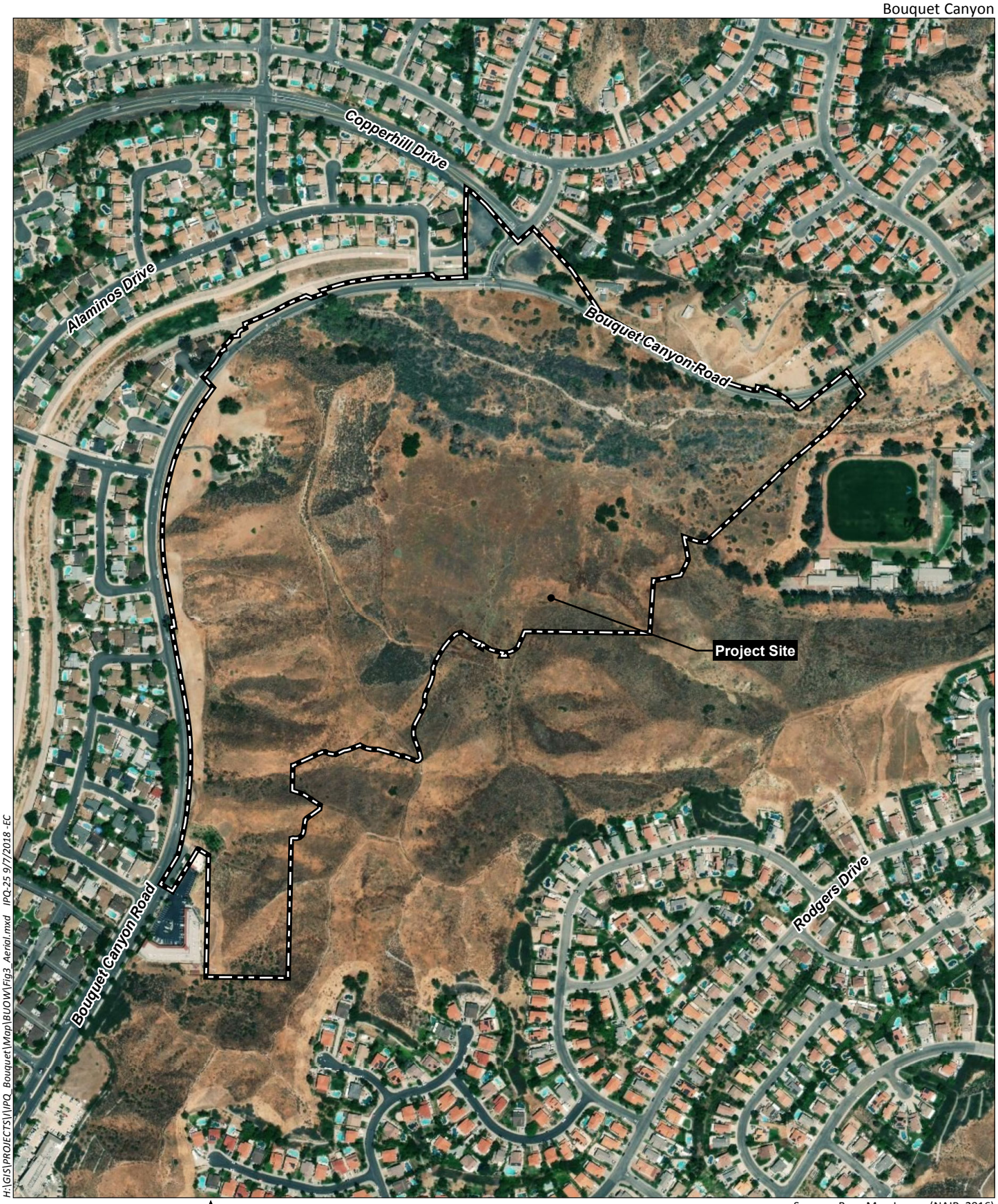
0 2,000 Feet

Source: Mint Canyon 7.5' Quad (USGS)

HELIX Environmental Planning

Vicinity Map

Figure 2



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0 500 Feet

Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Aerial Photograph

Figure 3

Project Site
500-foot Survey Buffer
Burrow Locations
Transect
Photograph Locations

Vegetation

Chamise Chaparral/Non-native Grassland
Disturbed
Disturbed-Riversidean Upland Sage Scrub
Elderberry Savanna
Non-native Grassland
Non-native Grassland/Riversidean Upland Sage Scrub
Non-native Vegetation
Non-native Vegetation/Elderberry Savanna
Ornamental
Scrub Oak Chaparral/Non-native Grassland

David Way
Bouquet Canyon Road
1
2
3
4

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0 400 Feet

Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Suitable Burrow and Transect Locations

Figure 4

Photograph 1: View of the non-native grassland located in the center of the study area, facing east.

Photograph 2: View of the non-native grassland located in the center of the study area, facing south.

Photograph 3: View of disturbed-riversidean upland sage scrub in foreground, chamise chaparral/non-native grassland, non-native grassland, and disturbed area in the background, facing southwest.

Photograph 4: View of disturbed areas located adjacent to Bouquet Canyon Road, facing south.

Note: See Figure 4 for photograph locations.

Source: HELIX 2018

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Appendix E

Coastal California Gnatcatcher Focused Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

June 22, 2018 IPQ-25

Mr. Chris Kofron
US Fish & Wildlife Service
2493 Portola Road, Suite B
Ventura, California 93003

Subject: 2018 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for the Bouquet Canyon Project

Dear Mr. Kofron:

This letter presents the results of a US Fish and Wildlife Service (USFWS) protocol presence/absence survey of the federally listed threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Bouquet Canyon Project (project). The project site is comprised of four parcels with Assessor Parcel Numbers (APNs) 2812-008-03, -013, -022, and -031 located in the City of Santa Clarita, Los Angeles County, California. The project site also includes the northwest corner of the parcel with APN 2812-038-022, which may be considered for slope stabilization associated with the proposed development, and a road easement that extends through the southern portion of the parcel with APN 2812-008-022. In addition, a 100-foot buffer around the project site was evaluated. This report describes the methods used to perform the survey and the results, which is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE-778195-13.

PROJECT LOCATION

The approximately 78-acre project site and 24-acre buffer is generally located 6.9 miles to the east of Interstate 5 and 3.8 miles to the northwest of California State Route 14 in the City of Santa Clarita (Figure 1). Specifically, the project site is located directly south of the intersection of David Way and Bouquet Canyon Road (Figure 2). The project site is within Section 6 of Township 4 North, Range 15 West of the Mint Canyon, California US Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 3).

Immediate surrounding land uses include existing residential development to the north and west, a mixture of undeveloped land and residential development to the south, and undeveloped land and juvenile detention schools to the east. The project site is located approximately 0.20 mile to the southeast of Haskell Canyon Open Space and 1.40 miles to the south of Angeles National Forest.

METHODS

The survey consisted of six visits that were performed by HELIX biologist Tara Baxter (TE 87004B-0) in accordance with the current (1997) USFWS protocol. Approximately 32.83 acres of potential CAGN habitat occurs within the survey area, which consists of big sagebrush scrub, Riversidean upland sage scrub, disturbed-Riversidean upland sage scrub, Riversidean upland sage scrub/non-native grassland, and non-native grassland/Riversidean upland sage scrub mapped within the project site and 100-foot buffer (Figure 4). Table 1 details the survey dates, times, and conditions.

The surveys were conducted by walking within and along the perimeter of suitable CAGN habitat within the project site. Suitable habitat in areas adjacent to the project site were surveyed from the project site boundary. The survey route was arranged to ensure complete survey coverage of habitat with potential for occupancy by CAGN. Surveys were conducted with binoculars to aid in bird detection. Recorded CAGN vocalizations were played sparingly and only if other means of detection had failed. If a CAGN was detected before playing recorded vocalizations, the recordings were not played. Once CAGNs were initially detected in an area, use of playback was discontinued. The approximate survey route followed is depicted on Figure 4.

Table 1
GNATCATCHER SURVEY INFORMATION

Site Visit	Survey Date	Biologist(s)	Start/Stop Time	Approx. Acres Surveyed/ Acres per Hour	Start/Stop Weather Conditions	Survey Results
1	03/24/18	Tara Baxter	0715/1045	32.83 ac/ 9.38 ac/hr	46°F, wind 2-4 mph, 20% cloud cover 64°F, wind 3-5 mph, 40% cloud cover	No CAGN detected
2	04/07/18	Tara Baxter	0630/0930	32.83 ac/ 9.38 ac/hr	56°F, wind 0-2 mph, 15% cloud cover 70°F, wind 1-3 mph, 20% cloud cover	No CAGN detected
3	04/14/18	Tara Baxter	0830/1130	32.83 ac/ 9.38 /hr	67°F, wind 0-2mph, 0% cloud cover 77°F, wind 0-2 mph, 0% cloud cover	No CAGN detected
4	04/21/18	Tara Baxter	0700/1000	32.83 ac/ 9.38 ac/hr	50°F, wind 0-2mph, 0% cloud cover 68°F, wind 1-3 mph, 0% cloud cover	No CAGN detected
5	05/05/18	Tara Baxter	0600/0900	32.83 ac/ 9.38 ac/hr	57°F, wind 0-2 mph, 5% cloud cover 74°F, wind 1-3 mph, 10% cloud cover	No CAGN detected
6	05/12/18	Tara Baxter	0645/0945	32.83 ac/ 9.38 ac/hr	59°F, wind 1-4 mph, 95% cloud cover 63°F, wind 1-4 mph, 100% cloud cover	No CAGN detected

COASTAL CALIFORNIA GNATCATCHER HABITAT

Big Sagebrush Scrub

Big sagebrush scrub comprises mostly soft-woody shrubs up to two meters tall, and usually has bare ground underneath and between the shrubs. This vegetation community is dominated by big sagebrush (*Artemisia tridentata*) and occurs on a wide variety of soils and terrain, from rocky, well-drained slopes to fine-textured valley soils with high water tables. Other species observed in this community included mostly non-native species, such as giant reed (*Arundo donax*), short-pod mustard (*Hirschfeldia incana*), and tree tobacco (*Nicotiana glauca*).

Riversidean Upland Sage Scrub

Riversidean upland sage scrub (including disturbed-Riversidean sage scrub, Riversidean sage scrub/non-native grassland, and non-native grassland/Riversidean sage scrub) occupies xeric sites such as steep slopes, severely drained soils, or clays that slowly release stored soil moisture. This vegetation community is dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*). Other species observed in this community included basket-brush (*Rhus aromatica*), purple sage (*Salvia leucophylla*), and rancher's fiddleneck (*Amsinckia intermedia*).

Disturbed-Riversidean sage scrub has been subjected to human disturbance and has a lower percent cover of Riversidean sage scrub species and a higher percent cover of bare ground. Riversidean sage scrub/non-native grassland is dominated by California sagebrush and California buckwheat with several non-native grass species interspersed between shrubs, including red brome (*Bromus madritensis* ssp. *rubens*), ripgut (*Bromus diandrus*), and soft chess (*Bromus hordeaceus*). Non-native grassland/Riversidean sage scrub is dominated by non-native grass species with interspersed California sagebrush and California buckwheat shrubs.

RESULTS

No coastal California gnatcatchers were detected during the survey (Figure 4). CAGN is assumed to be absent from the survey area.

CERTIFICATION

I certify that the information in this survey report and enclosed exhibit fully and accurately represent our work.

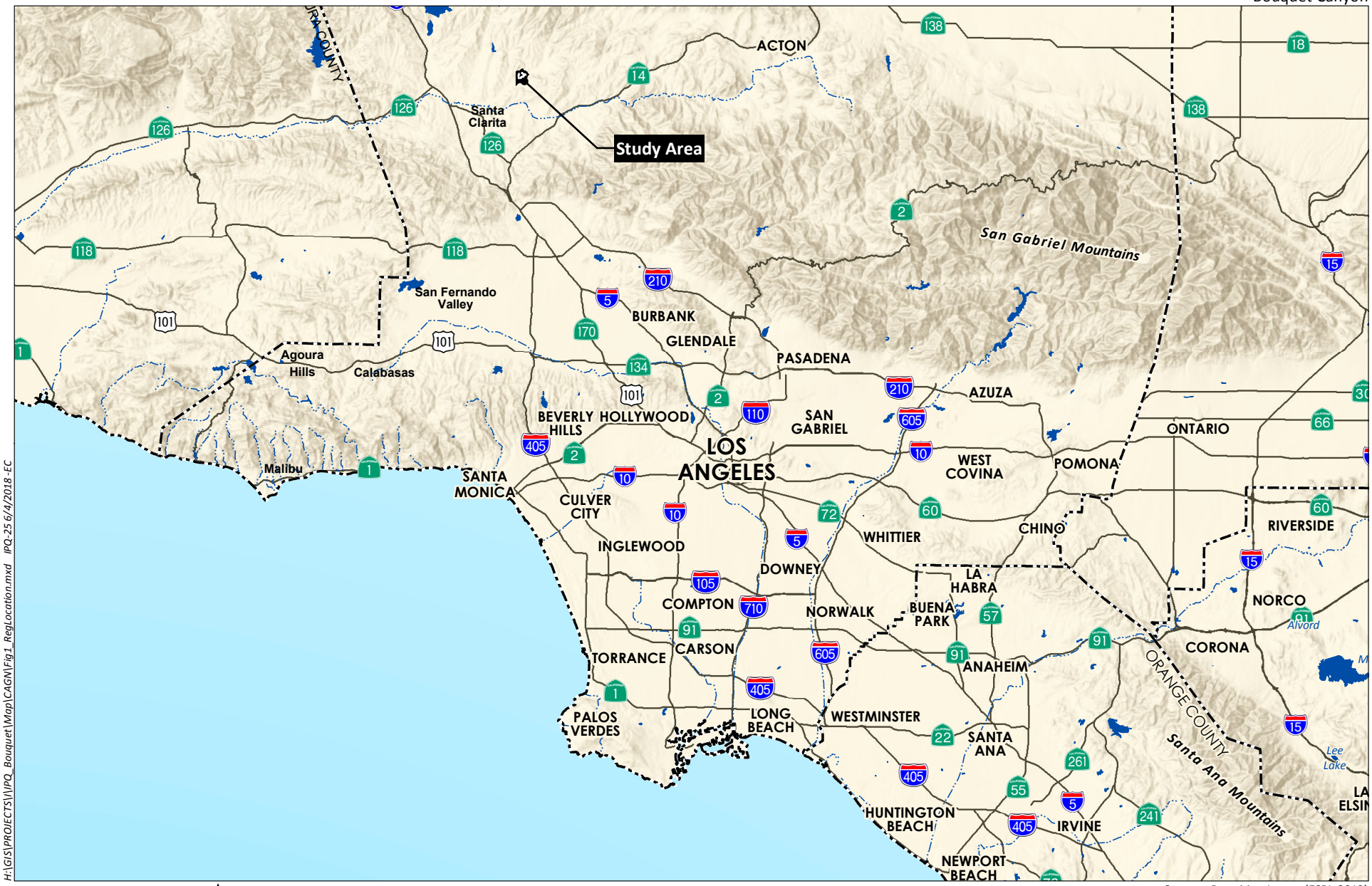
Sincerely,

Tara Baxter

Enclosures:
Figure 1 Regional Location
Figure 2 Project Vicinity (Aerial Photograph)
Figure 3 Project Vicinity (USGS Topography)
Figure 4 2018 Coastal California Gnatcatcher Survey Results

REFERENCES

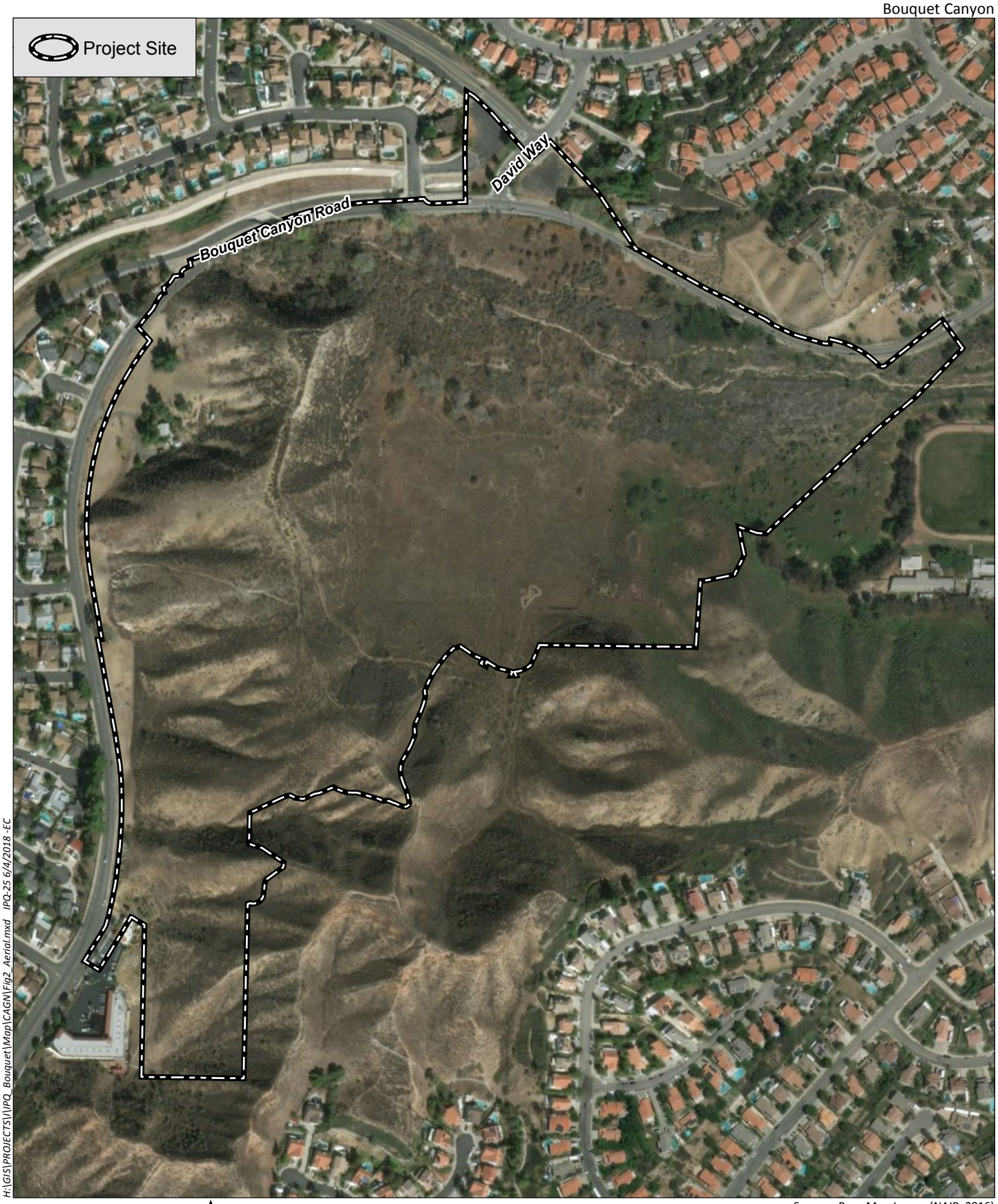
US Fish and Wildlife Service (USFWS). 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5pp.



HELIX Environmental Planning

Regional Location

Figure 1



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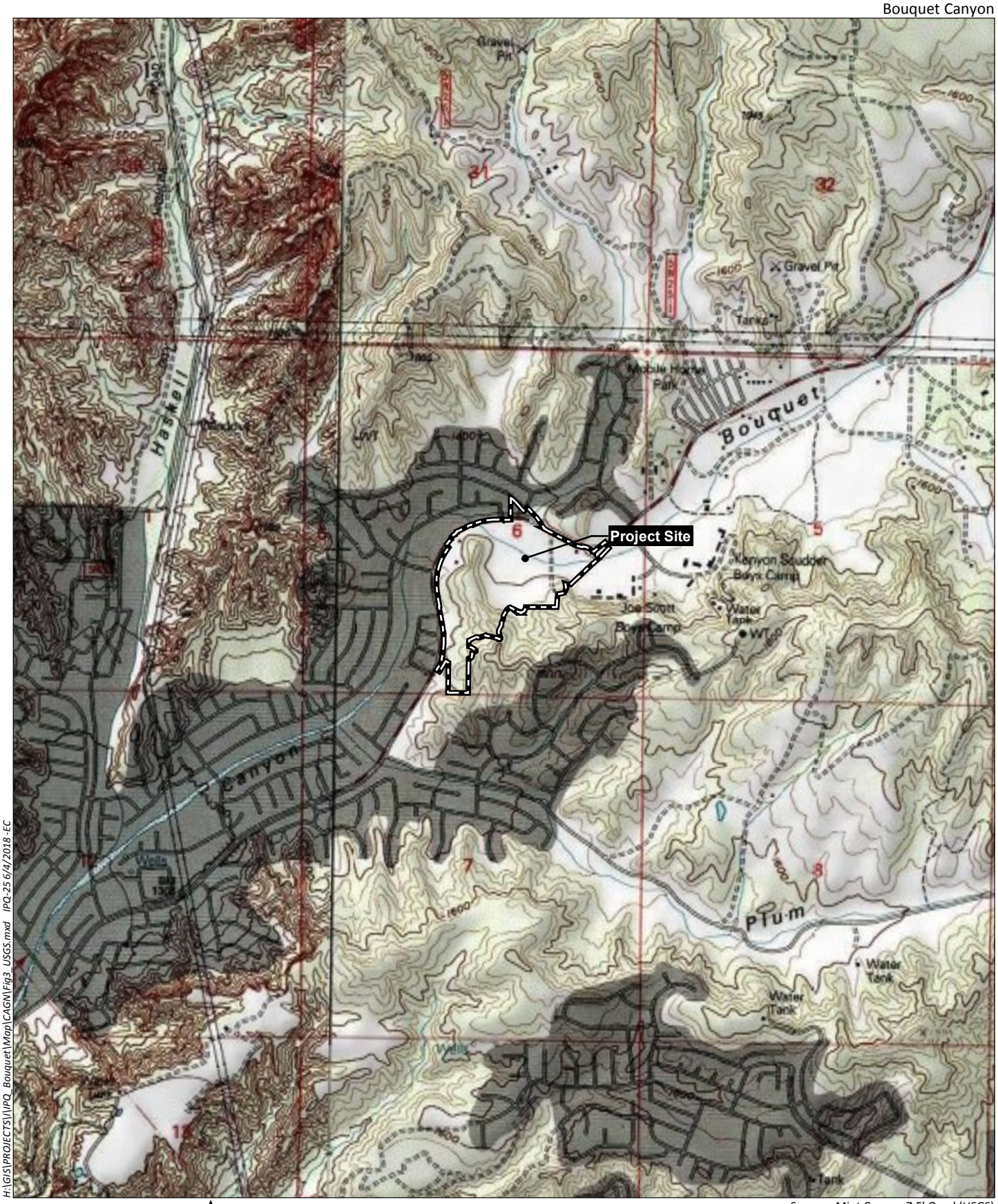
Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Project Vicinity (Aerial Photograph)

Figure 2



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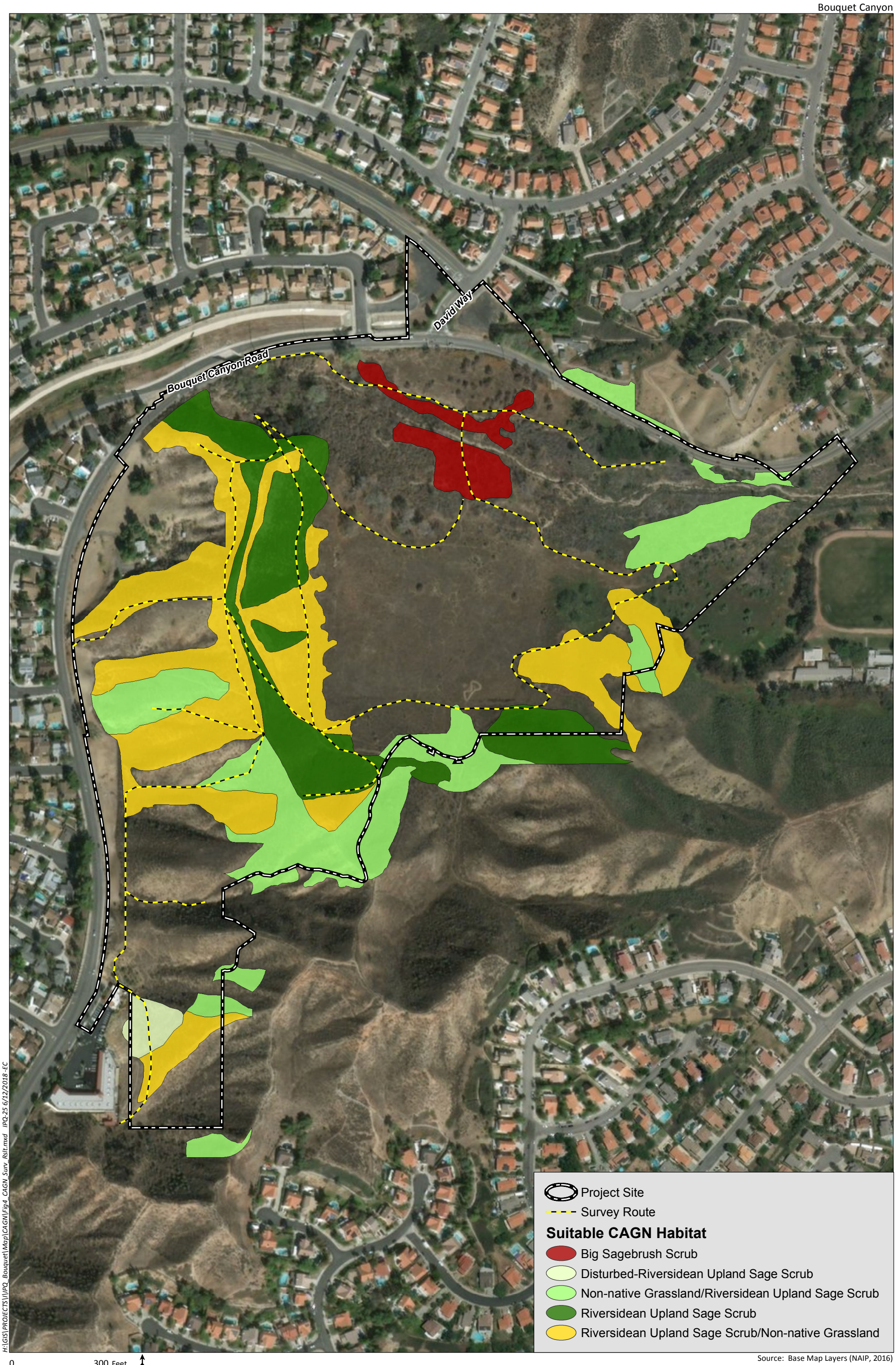
Source: Mint Canyon 7.5' Quad (USGS)

HELIX Environmental Planning

Project Vicinity (USGS Topography)

Figure 3



Source: Base Map Layers (NAIP, 2016)

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HELIX Environmental Planning

2018 Coastal California Gnatcatcher Survey Results

Figure 4

Appendix F

Representative Drainage Photographs

Photograph 1: View of the eastern portion of Bouquet Canyon Creek, facing downstream. The unvegetated river wash can be seen in the foreground and the mule fat scrub community can be seen in the distance.

Photograph 2: View of the central portion of Bouquet Canyon Creek within the study area, facing upstream. The unvegetated river wash can be seen in the foreground and the giant reed stand vegetation community can be seen along the banks.

Photograph 3: View of the western portion of Bouquet Canyon Creek within the study area, facing upstream. The giant reed stand vegetation community can be seen along the banks.

Photograph 4: View of the western most portion of Bouquet Canyon Creek within the study area, facing upstream. The giant reed stand vegetation community can be seen along the banks.

Note: See Figure 7 for photograph locations.

Source: HELIX 2017

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HELIX Environmental Planning

Representative Drainage Photographs

Appendix G

Jurisdictional Delineation Report

Bouquet Canyon Project

Jurisdictional Delineation Report

September 20. 2017 | IPQ-25

Ezekiel Cooley
Project Manager

Prepared for:

Integral Communities
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Bouquet Canyon Project

Jurisdictional Delineation Report

Prepared for:

Integral Communities
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

Prepared by:

HELIX Environmental Planning, Inc.
16485 Laguna Canyon Road, Suite 150
Irvine, CA 92618

September 20, 2017 | IPQ-25

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ACRONYMS AND ABBREVIATIONS

AMSL	Above mean sea level
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
HELIX	HELIX Environmental Planning, Inc.
IP	Individual Permit
MCV	A Manual of California Vegetation
NWP	Nationwide Permit
OHWM	Ordinary high water mark
Project	Bouquet Canyon Residential Development Project
RPW	Relatively Permanent Waterbody
RWQCB	California Regional Water Quality Control Board
SAA	Stream Alteration Agreement
TNW	Traditional Navigable Waters
U.S.	United States
U.S.C.	United States Code
USGS	U.S. Geological Survey
USACE	U.S. Army Corps of Engineers
WUS	Waters of the U.S.

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1.0 INTRODUCTION

This report presents the results of a jurisdictional delineation for the proposed Bouquet Canyon Residential Development (Project), which is proposed on an approximately 56.77-acre undeveloped property located in the City of Santa Clarita, Los Angeles County, California (study area). The Project proposes a residential development, along with associated infrastructure improvements.

This delineation was conducted to identify and map existing areas within the study area that are Waters of the U.S. (WUS) under U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act ([CWA] 33 United States Code [U.S.C.] 1344); and wetland and streambed habitats under California Department of Fish and Wildlife (CDFW) jurisdiction pursuant to Section 1600 of the California Fish and Game Code. This information is necessary to evaluate effects on jurisdictional areas and determine permit requirements for the proposed Project. This report presents HELIX Environmental Planning, Inc.'s (HELIX's) best efforts to quantify the amount of WUS and state jurisdictional habitats in the study area using the current regulations, written policies, and guidance from the agencies. The results presented here are subject to confirmation by the USACE and CDFW.

1.1 STUDY AREA LOCATION

The 56.77-acre study area is generally located 6.9 miles to the east of Interstate 5 and 3.8 miles to the northwest of California State Route 14 in the City of Santa Clarita (Figure 1, *Regional Location*). Specifically, the study area is located directly south of the intersection of David Way and Bouquet Canyon Road. The study area is within Section 6 of Township 4 North, Range 15 West of the Mint Canyon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 2, *Vicinity Map*).

Immediate surrounding land uses include existing residential development to the north and west, a mixture of undeveloped land and residential development to the south, and undeveloped land and juvenile detention schools to the east (Figure 3, *Aerial Photograph*). The study area is located approximately 0.20 mile to the southeast of Haskell Canyon Open Space and 1.40 miles to the south of Angeles National Forest.

2.0 METHODS

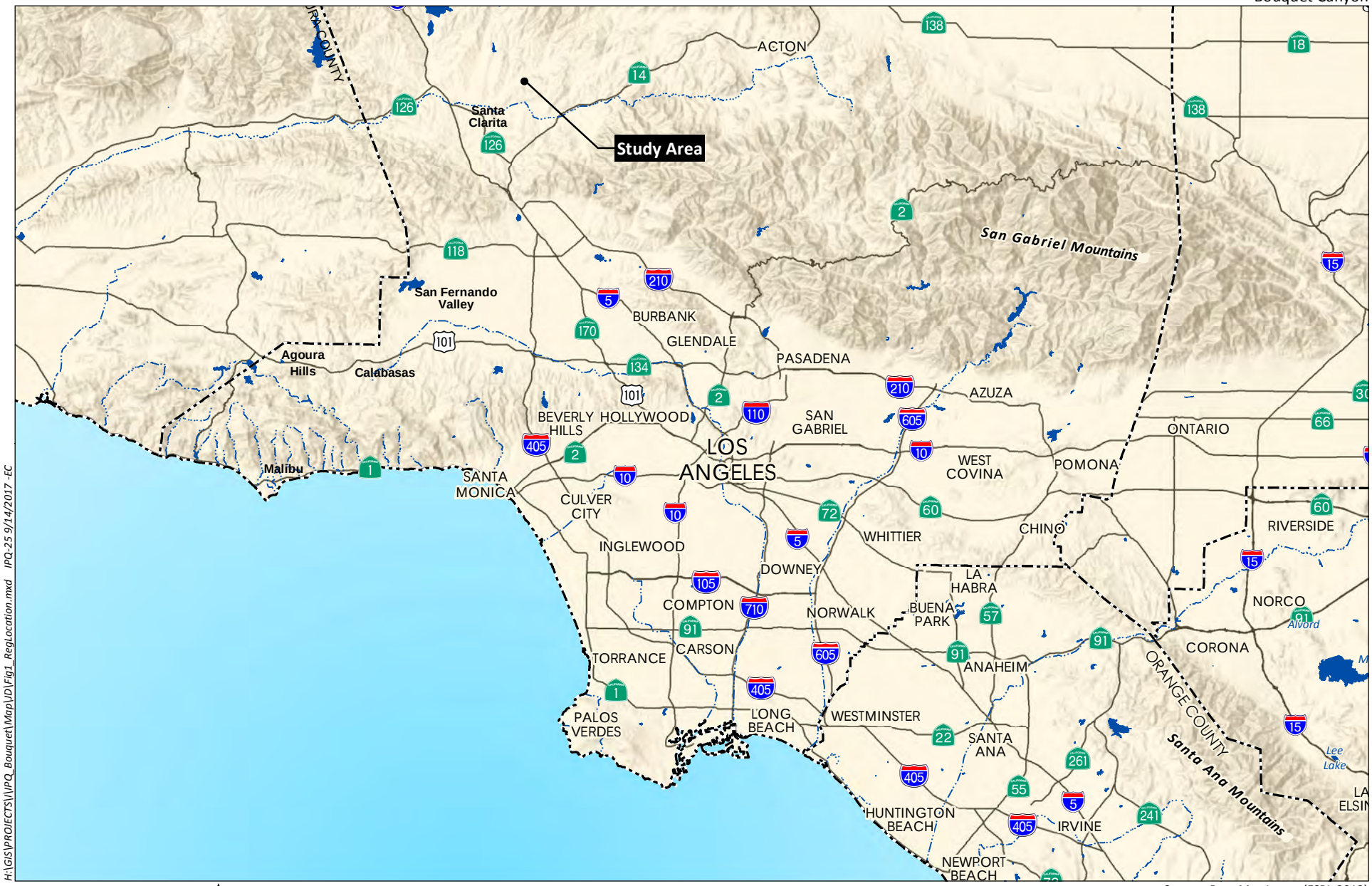
Prior to beginning fieldwork, aerial photographs (1"=75' scale), topographic maps (1"=125' scale), USGS quadrangle maps, and National Wetlands Inventory maps (U.S. Fish and Wildlife Service 2017) were reviewed to assist in determining the location of potential jurisdictional waters and wetlands in the study area. HELIX regulatory specialists Amir Morales and Ezekiel Cooley conducted the jurisdictional delineation field work on July 6, 2017. Data were collected in areas that were judged likely to support potential jurisdictional resources. Mapping of drainage features was performed in the field based on ordinary high water mark (OHWM) and other surface indications, as defined below.

2.1 U.S. ARMY CORPS OF ENGINEERS AND REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

Areas were determined to be potential USACE WUS wetland if the three criteria (vegetation, soils, and hydrology) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (U.S. Army Corps of Engineers [USACE] 2008a) were met. Plants were identified according to Baldwin et al. (2012), and Calflora (2017) was used to augment common names. Wetland affiliations of plant species follow the National Wetland Plant List (Lichvar et al. 2016). Soils information was taken from the Natural Resource Conservation Services' Web Soil Survey (2017). Areas were determined to be potential non-wetland WUS if there was evidence of regular surface flow (e.g., bed and bank) but either the vegetation or soils criterion was not met. Jurisdictional limits for these areas were measured according to the presence of a discernible OHWM, which is defined in 33 Code of Federal Regulations (CFR) Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; USACE 2008b), which also was used for this delineation.

The results presented here are also discussed in light of court decisions (i.e., Rapanos v. United States, Carabell v. United States, and Solid Waste Agency of Northern Cook County [SWANCC] v. USACE), as outlined and applied by the USACE (USACE 2007; Grumbles and Woodley 2007), USACE and Environmental Protection Agency (EPA; 2007), and EPA and USACE (2007). These publications explain that the EPA and USACE will assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNW that are relatively permanent water bodies (RPWs), which have year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation must be conducted to determine whether the non-RPW is jurisdictional. An overview of USACE wetlands and jurisdictional WUS definitions is presented in Appendix A, *Federal Jurisdictional Information*.

The California Regional Water Quality Control Board (RWQCB) asserts regulatory jurisdiction over activities affecting wetland and non-wetland Waters of the State pursuant to Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act. Potential RWQCB jurisdiction found within the study area follows the boundaries of potential USACE jurisdiction for WUS. There are no areas supporting isolated Waters of the State subject to exclusive RWQCB jurisdiction pursuant to the State Porter Cologne Water Quality Control Act.



HELIX Environmental Planning

Regional Location

Figure 1

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Source: Mint Canyon 7.5' Quad (USGS)

HELIX Environmental Planning

Vicinity Map

Figure 2

Bouquet Canyon

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Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Aerial Photograph

Figure 3

2.2 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTION

The CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub). Streambed widths were measured to the nearest foot at various locations along the channel. The CDFW guidance on dryland watersheds (Vyverberg 2010) was also used to understand fluvial actions and map jurisdictional areas in the study area. Definitions of CDFW jurisdictional areas are presented in Appendix B, *State Jurisdictional Information*.

3.0 RESULTS

3.1 STUDY AREA DESCRIPTION

The study area is located in the foothills of the Sierra Pelona Mountains. The topography in the southern and western portions of the study area is predominantly steep hillsides, while the northern portion is primarily flat. Elevations on the study area range from approximately 1,365 feet above mean sea level (AMSL) near the northwest corner of the study area to approximately 1,520 feet above AMSL near the southeastern corner. The steep hills throughout the southern and western portions of the site are predominated by Riversidean upland sage scrub while the flatter portions of the study area are dominated by non-native grassland.

Seven soil types are mapped on the study area, including Hanford sandy loam (HcC), Metz loam sandy (MfA), Mocho loam (MpA), Ojai loam (OgF), Saugus loam (ScF2), Sorrento loam (SsA), and Yolo loam (YoC; Figure 4, *Soils*).

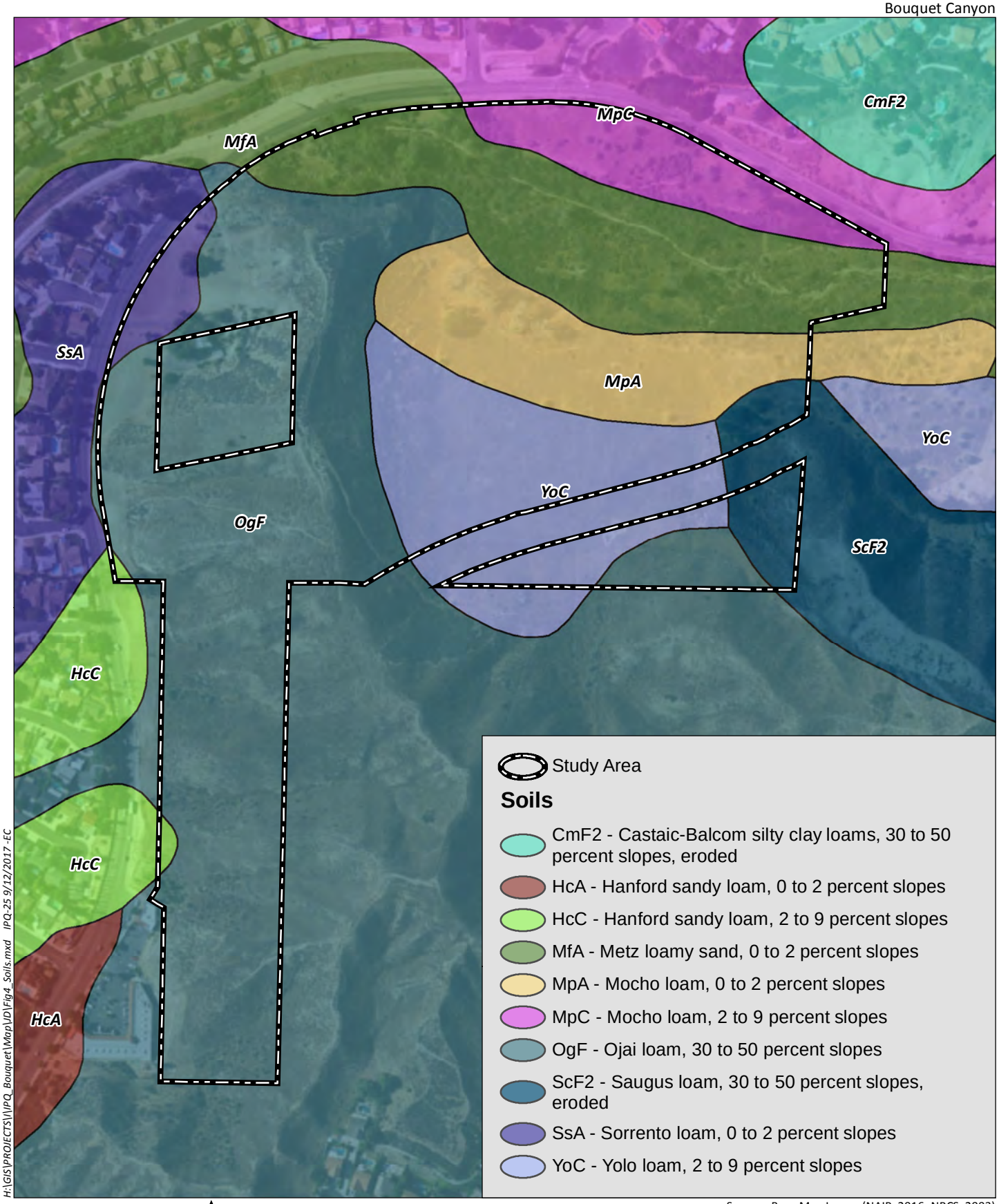
3.2 DRAINAGE FEATURE DESCRIPTION

Bouquet Canyon Creek, which is a blueline stream mapped by USGS, is an ephemeral drainage that runs from east to west near the northern study area boundary. The headwaters of the Bouquet Canyon drainage feature originate approximately 10 miles to the northeast of the study area in the Sierra Pelona Mountains, and non-storm related flows through the wash are often controlled via regulated releases from Bouquet Reservoir. The Bouquet Canyon streambed enters the study area at the northeastern boundary and exits at the northwestern boundary. The drainage continues under Bouquet Canyon Road at the northwestern corner of the study area boundary where the drainage has been channelized. The Bouquet Canyon drainage is a tributary to the Santa Clara River, which ultimately drains into the Pacific Ocean approximately 35 miles to the southwest of the study area. The on-site floodplain of the Bouquet Canyon drainage is infested with invasive giant reed (*Arundo donax*). Historical imagery and evidence of grinded material observed on the study area suggest giant reed removal has occurred on the study area. Bouquet Canyon supports somewhat excessively drained sandy loam of the Metz soil series. Aside from Bouquet Canyon, no other surface water feature was observed and the study area is predominantly made up of upland habitat.

Representative photographs were taken of the drainage and are included as Appendix C, *Representative Drainage Photographs*.

3.3 VEGETATION COMMUNITIES

The study area supports 18 vegetation communities, which are shown on Figure 5, *Vegetation* and listed in Table 1, *Vegetation Communities*. Plant communities are classified in accordance with Holland (1986) and Oberbauer (1996). Community names consistent with A Manual of California Vegetation, Second Edition (MCV; Sawyer et al. 2009) are also provided. Sensitive habitats pursuant to CDFW's Natural Communities List (California Department of Fish and Wildlife 2010) are also identified in Table 1.

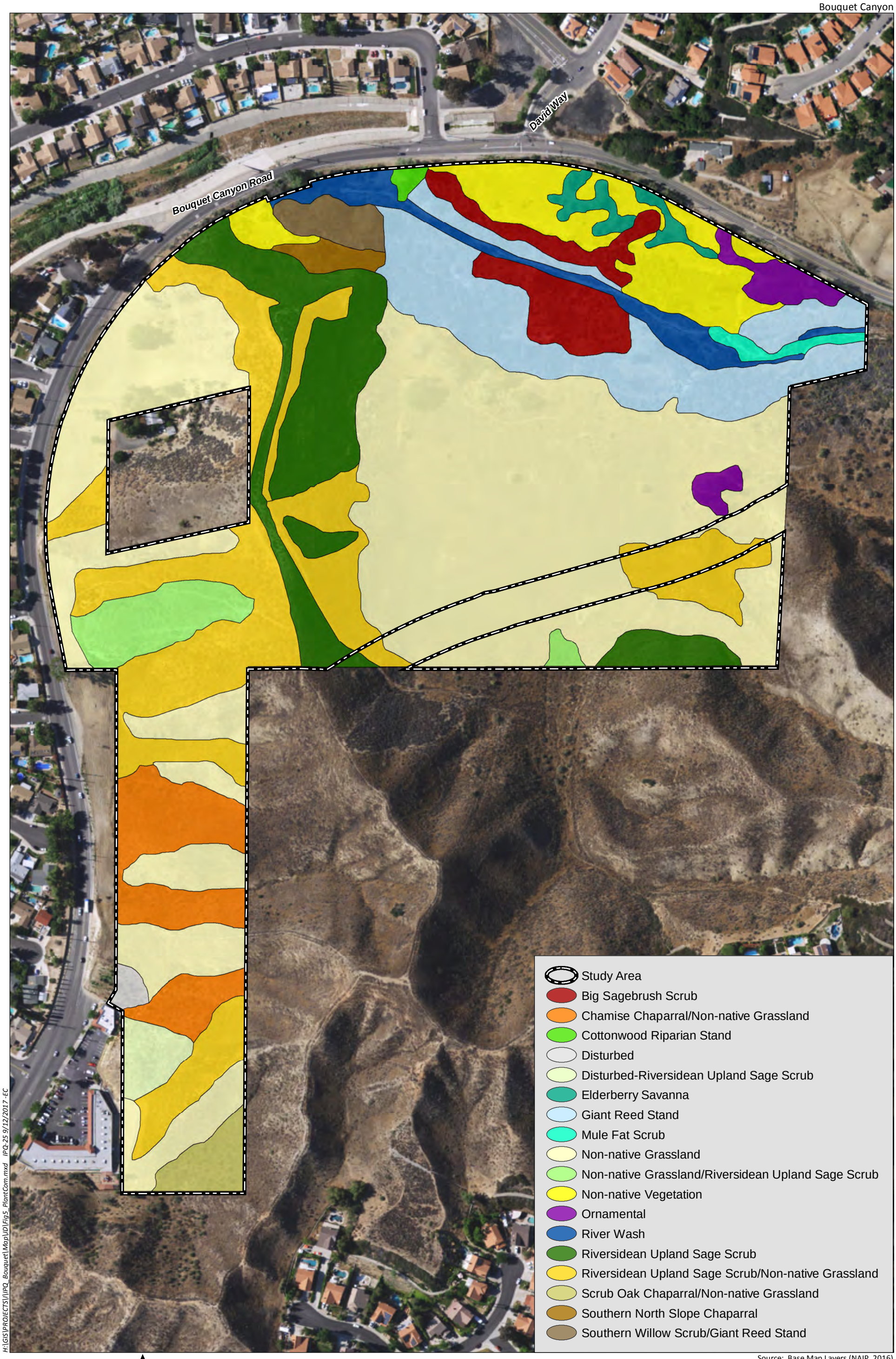


Source: Base Map Layers (NAIP, 2016; NRCS, 2003)

HELIX Environmental Planning

Soils

Figure 4



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Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Vegetation

Figure 5

Table 1
VEGETATION COMMUNITIES

Habitat Type (Holland/Oberbauer)	Habitat Type (MCV)	Acres
Big Sagebrush Scrub	Big Sagebrush	1.91
Chamise Chaparral/Non-native Grassland	Chamise Chaparral/Non-native Grassland	2.70
Cottonwood Riparian Stand	Fremont Cottonwood Forest	0.13
Elderberry Savannah	Blue Elderberry Stands[1]	0.56
Mule Fat Scrub	Mule Fat Thickets	0.29
Riversidean Upland Sage Scrub	California Sagebrush Scrub	4.87
Riversidean Upland Sage Scrub/Non-native Grassland	California Sagebrush Scrub/Non-native Grassland	8.86
Scrub Oak Chaparral/Non-native Grassland	Scrub Oak Chaparral/Non-native Grassland	0.67
Southern North Slope Chaparral	Tucker Oak Chaparral	0.34
Southern Willow Scrub/Giant Reed Stand	Red Willow Thickets[1]/Giant Reed Breaks	0.61
Disturbed	Disturbed	0.18
Disturbed-Riversidean Upland Sage Scrub	Disturbed-California Buckwheat Scrub	0.58
Giant Reed Stand	Giant Reed Breaks	5.12
Non-native Grassland	Non-native Grassland	23.02
Non-native Grassland/Riversidean Upland Sage Scrub	Non-native Grassland/California Sagebrush Scrub	1.49
Non-native Vegetation	Upland Mustards	3.30
Ornamental	Ornamental	0.78
River Wash	River Wash	1.36
	TOTAL	**56.77**

Source: HELIX (2017)

[1] These communities are considered sensitive habitats pursuant to CDFW's Natural Communities List.

3.3.1 Description of Jurisdictional Habitats

Potential jurisdictional habitats observed on the study area include big sagebrush scrub, cottonwood riparian stand, giant reed stand, mule fat scrub, river wash, and southern willow scrub/giant reed stand.

3.3.1.1 Big Sagebrush Scrub

Big sagebrush scrub is dominated by big sagebrush (*Artemisia tridentata*). Big sagebrush scrub is typically associated with plains, alluvial fans, lower slopes, and dry washes in well-drained sandy and loamy soils. Associated species observed within this community include shadscale (*Atriplex canescens*), giant reed, Mediterranean grass (*Schismus barbatus*). Big sagebrush scrub/non-native grassland was observed along the eastern boundary of the study area.

3.3.1.2 Cottonwood Riparian Stand

Cottonwood riparian stand consists of tall, open, broad-leaved, winter-deciduous cottonwood (*Populus fremontii* ssp. *fremontii*), with non-native herbaceous species and giant reed comprising the understory. Most of the understory of this community is heavily disturbed due to the community's proximity to Bouquet Canyon Road and the roads associated weed abatement activities. A small cottonwood riparian stand was observed in the northeastern portion of the study area.

3.3.1.3 Giant Reed Stand

Giant reed stand is completely dominated by dense stands of giant reed. Giant reed stand is associated with low-gradient streams, ditches, and coastal marshes. Giant reed is an invasive species that outcompetes native riparian species. Other scattered species observed in this community included native big sagebrush and red willow (*Salix laevigata*) and non-native foxtail chess (*Bromus madritensis* ssp. *rubens*) and short podded mustard (*Hirschfeldia incana*). Giant reed stand extends the length of the drainage atop the banks on both sides.

3.3.1.4 Mule Fat Scrub

Mule fat scrub is a shrubby riparian scrub community dominated by mule fat (*Baccharis salicifolia*) and interspersed with small willows (*Salix* spp.). This vegetation community occurs along stream channels with a fairly coarse substrate and moderate depth to the water table. Mule fat scrub is present in the downstream most portion of the drainage near the eastern boundary of the study area.

3.3.1.5 River Wash

River wash is predominately unvegetated; however, some sparse upland species and giant reed do persist in the wash. River wash is present in the most upstream portion of the drainage near the northern boundary of the study area.

3.3.1.6 Southern Willow Scrub/Giant Reed Stand

Southern willow scrub/giant reed stand consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and also contains scattered stands of giant reed. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows (Holland 1986). Southern willow scrub/giant reed stand is present in the most upstream portion of the drainage near the northern boundary of the study area.

3.3.1.7 Riversidean Upland Sage Scrub

Riversidian sage scrub is the most xeric expression of coastal sage scrub south of Point Conception, California. Typical stands are fairly open and dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum* ssp. *fasciculatum*), and foxtail chess, each attaining at least 20 percent cover. Riversidian sage scrub is typically found on xeric sites such as steep slopes, severely drained soils, or clays that release stored soil moisture only slowly. Intergrades at slightly higher elevations with several southern Californian chaparrals. Characteristic species of Riversidean upland sage scrub in the study area include California buckwheat, California sagebrush, and black sage (*Salvia melifera*), with a sparse understory of non-native grasses.

3.3.1.8 Southern North Slope Chaparral

Southern north slope chaparral is a dense, evergreen chaparral up to 20 feet tall, dominated by scrub oak (*Quercus berberidifolia*). Southern north slope chaparral occurs in somewhat more mesic areas than many other chaparrals, such as north facing slopes, and recovers more rapidly from fires than other chaparrals due to resprouting capabilities of scrub oak (Holland 1986; Keeley and Keeley 1988).

Characteristic species of southern north slope chaparral in the study area include scrub oak, with an understory of non-native grasses.

3.3.1.9 Non-native Vegetation

Non-native vegetation includes land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage. Characteristic species of non-native vegetation in the study area include short podded mustard, foxtail chess, and Mediterranean grass.

3.3.1.10 Non-native Grassland

Non-native grassland is a dense to sparse cover of annual grasses, sometimes associated with native annual forbs. Most of the species that occur in non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. Characteristic species of non-native grassland in the study area include oats (*Avena* sp.), bromes (*Bromus* spp.), and mustards (*Brassica* spp.).

3.4 JURISDICTIONAL SUMMARY

3.4.1 Federal Jurisdiction

Areas under USACE jurisdiction within the study area consist of a total of 0.35 acre of non-wetland WUS ephemeral streams (Figure 6, *USACE Waters of the U.S.*; Table 2, *Jurisdictional Habitats Occurring on the Study Area*).

3.4.2 State Jurisdiction

Areas under CDFW jurisdiction within the study area total 8.14 acres, including 0.57 acre of big sagebrush scrub, 0.11 acre of cottonwood riparian stand, 4.09 acres of giant reed stand, 0.29 acre of mule fat scrub, 0.68 acre of non-native grassland, 0.35 acre of non-native vegetation, 0.01 acre of Riverisdean upland sage scrub, 1.20 acre of river wash, 0.26 acre of southern north slope chaparral, and 0.58 acre of southern willow scrub/giant reed stand (Figure 7, *CDFW Waters of the State*; Table 2).

Table 2
JURISDICTIONAL HABITATS OCCURRING ON THE STUDY AREA

Habitat	CDFW (Acres)[1]	USACE/RWQCB (Acres)[1]
Big Sagebrush Scrub	0.57	<0.01
Cottonwood Riparian Stand	0.11	<0.01
Giant Reed Stand	4.09	0.00
Mule Fat Scrub	0.29	0.07
Non-native Grassland	0.68	0.00
Non-native Vegetation	0.35	0.00
Riversidean Upland Sage Scrub	0.01	0.00
River Wash	1.20	0.27
Southern North Slope Chaparral	0.26	0.00
Southern Willow Scrub/Giant Reed Stand	0.58	0.00
TOTAL	**8.14**	**0.35**

Source: HELIX (2017)
[1] Acres are rounded to the nearest hundredth.

Bouquet Canyon

Study Area
USACE/RWQCB Jurisdiction

David Way

Bouquet Canyon Road

10

10

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0 150 Feet

Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

USACE Waters of the U.S.

Figure 6

Bouquet Canyon

H:\GIS\PROJECTS\\IPQ_Bouquet\Map\JD\Fig7_CDFW.mxd IPQ-25 9/14/2017 -EC

Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

CDFW Waters of the State

Figure 7

4.0 CONCLUSION

4.1 FEDERAL PERMITTING

Federal jurisdictional areas occurring within the study area total 0.35 acre. Impacts to WUS are regulated by the USACE under Section 404 of the CWA (33 U.S.C. 401 et seq.; 33 U.S.C. 1344; U.S.C. 1413; and U.S. Department of Defense, Department of the Army, USACE 33 CFR Part 323). A federal CWA Section 404 Permit would be required for the proposed Project. A CWA Section 401 Water Quality Certification administered by the RWQCB must be issued prior to any 404 Permit.

Projects may be permitted on an individual basis or may be covered under one of several approved Nationwide Permits (NWPs), which is based on the type of action, amount of fill, and size and length of impact. Individual Permits (IPs) typically require substantial time (often longer than 12 months) to review and approve, while NWPs are pre-approved if a project meets appropriate conditions.

4.1.1 404 Permit

A CWA Section 404 Permit is required by the USACE for impacts to WUS. The type of 404 Permit required from the USACE would depend primarily on the quantity of jurisdictional areas to be impacted. If the Project affects less than 0.5 acre of jurisdictional areas, it may qualify for a NWP 29 for residential developments under current regulations. The NWP's are pre-issued permits for certain activities resulting in no more than minimal adverse effects to USACE jurisdictional streambeds. If implementation of the Project on the study area would impact less than 0.5 acre of jurisdictional areas but exceed the 300-foot threshold for linear streambed impacts under NWP 29, an IP could be required if USACE does not grant a waiver of the 300-foot limit for the Project. Based on the preliminary site plan, our sense is that a NWP may be obtainable if unavoidable impacts to USACE waters are required. An IP application generally takes significantly longer to process than a NWP and requires preparation of a biological assessment, a detailed Section 404(b)(1) on- and off-site alternatives analysis, an environmental assessment, and issuance of a public notice.

4.1.2 401 Certification

A 401 Water Quality Certification (Certification) is required by the RWQCB for impacts to Waters of the State. The 401 Certification is tied to the 404 Permit, and the 404 Permit cannot be issued until the 401 Certification is issued. The 401 Certification cannot be issued until the adopted or certified California Environmental Quality Act (CEQA) document is completed by the lead CEQA agency. In HELIX's experience, RWQCB is one of the most challenging regulatory agencies to obtain a regulatory permit from, as the 401 Certification evaluates impacts to jurisdictional WUS and Waters of the State, and also ensures that adequate pre- and post-construction water quality measures are implemented by a proposed project. Early planning and coordination between the design engineer and regulatory consultant is highly recommended to minimize impacts to RWQCB jurisdiction, ensure adequate water quality measures, and determine potential mitigation obligations.

4.2 STATE PERMITTING

The CDFW jurisdictional areas occurring within the study area total 8.14 acres, including 0.57 acre of big sagebrush scrub, 0.11 acre of cottonwood riparian stand, 4.09 acres of giant reed stand, 0.29 acre of mule fat scrub, 0.68 acre of non-native grassland, 0.35 acre of non-native vegetation, 0.01 acre of Riverisdean upland sage scrub, 1.20 acre of river wash, 0.26 acre of southern north slope chaparral, and 0.58 acre of southern willow scrub/giant reed stand. The CDFW regulates alterations or impacts to streambeds or lakes under California Fish and Game Code 1602 and requires a Streambed Alteration Agreement (SAA) for projects that will divert or obstruct the natural flow of water; change the bed, channel, or bank of any stream; or use any material from a streambed. The SAA is a contract between the applicant and CDFW that includes reasonable measures necessary to protect the resource (California Association of Resource Conservation Districts 2002). Any impacts to CDFW habitat would be regulated under California Fish and Game Code 1602 (Appendix B) and require an SAA.

4.2.1 1602 Agreement

Notification of Lake or Streambed Alteration is required to CDFW for impacts to jurisdictional streambed and riparian habitat. For projects with minor minimal streambed impacts, CDFW may waive their right to issue a formal SAA and issue an Operation of Law authorization, which requires compliance with the terms proposed as part of the SAA notification. For projects in which CDFW takes action and requires a SAA, the SAA cannot be issued until the certified CEQA document or determination is completed by the lead CEQA agency.

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Appendix A

Federal Jurisdictional Information

Appendix A
Federal Jurisdictional Information

WETLANDS AND "WATERS OF THE U.S." DEFINITIONS

WETLANDS

The U.S. Army Corps of Engineers (USACE; 33 CFR 328.3) and the Environmental Protection Agency (EPA; 40 CFR 230.3) jointly define wetlands as "[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987).

WATERS OF THE U.S.

The official definition of "Waters of the U.S." and their limits of jurisdiction (as they may apply) are defined by the USACE' Regulatory Program Regulations (33 CFR 328.3, paragraphs [a] 1-3 and [e], and Section 328.4, paragraphs [c] 1 and 2) as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters including interstate wetlands;

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters,

    i. which are or could be used by interstate or foreign travelers for recreation or other purposes; or

    ii. from which fish or shellfish are or could be taken and sold in interstate commerce; or

    iii. which are used or could be used for industrial purpose by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under the definition;

5. Tributaries of waters;

6. The territorial seas;

7. Wetlands adjacent to waters (other than waters that are themselves wetlands)…

NON-TIDAL WATERS OF THE U.S.

The limits of jurisdiction in non-tidal waters: In the absence of adjacent wetlands, the jurisdiction extends to the OHWM, or when adjacent wetlands are present, the jurisdiction extends to the limit of the adjacent wetlands.

The term OHWM refers to that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation (scouring), the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Waters of the U.S. must exhibit an OHWM or other evidence of surface flow created by hydrologic physical changes. These physical changes include (Riley 2005):

- Natural line impressed on the bank
- Shelving
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining
- Change in plant community

Further guidance on identifying the OHWM in the Arid Southwest (Lichvar and McColley 2008). This publication provided geomorphic and vegetation OHWM indicators specific to the Arid Southwest.

Jurisdictional areas also must be connected to Waters of the U.S. (Guzy and Anderson 2001; U.S. Supreme Court 2001).

As a consequence of the U.S. Supreme Court decision in Rapanos v. United States, a memorandum was developed regarding Clean Water Act jurisdiction (Grumbles and Woodley 2007). The memorandum states that the EPA and the USACE will assert jurisdiction over traditional navigable waters (TNW), wetlands adjacent to TNW, tributaries to TNWs that are a relatively permanent water body (RPW), and wetlands adjacent to TNW. An RPW has year-round flow or a continuous seasonal flow (i.e., typically for three months or longer). Jurisdiction over other waters (i.e., non TNW and RPW) will be based on a fact-specific analysis to determine if they have a significant nexus to a TNW.

Pursuant to the USACE Instructional Guidebook (USACE and EPA 2007), the significant nexus evaluation will cover the subject reach of the stream (upstream and downstream) as well as its adjacent wetlands (Illustrations 2 through 6, USACE and EPA 2007). The evaluation will include the flow characteristics,

annual precipitation, ability to provide habitat for aquatic species, ability to retain floodwaters and filter pollutants, and proximity of the subject reach to a TNW, drainage area, and the watershed.

WETLAND CRITERIA

Wetland boundaries are determined using three mandatory criteria (hydrophytic vegetation, wetland hydrology, and hydric soil) established for wetland delineations and described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Following is a brief discussion of the three criteria and how they are evaluated.

Vegetation

"Hydrophytic vegetation is defined herein as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987).

The wetland indicator status (obligate upland, facultative upland, facultative, facultative wetland, obligate wetland, or no indicator status) of the dominant plant species of all vegetative layers is determined. Species considered to be hydrophytic include the classifications of facultative, facultative wetland, and obligate wetland as defined in the current list of wetland plants of the Arid Southwest (Lichvar, et al. 2016; Table A-1). The percent of dominant wetland plant species is calculated. The hydrophytic vegetation criterion is considered to be met if it meets the "Dominance Test," "Prevalence Index," or the vegetation has morphological adaptations for prolonged inundation.

Table A-1
DEFINITIONS OF PLANT INDICATOR CATEGORIES

Indicator Categories	Abbreviation	Qualitative Description
Obligate	OBL	Almost always occur in wetlands
Facultative Wetland	FACW	Usually occur in wetlands but may occur in non-wetlands
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands but may occur in wetlands
Upland	UPL	Almost never occur in wetlands

Hydrology

"The term 'wetland hydrology' encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic reducing conditions, respectively" (Environmental Laboratory 1987).

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year (approximately 18 days for most of low-lying southern California). Hydrology criteria are evaluated based on the characteristics

listed below (USACE 2008). Where positive indicators of wetland hydrology are present, the limit of the OHWM (or the limit of adjacent wetlands) is noted and mapped. Evidence of wetland hydrology is met by the presence of a single primary indicator or two secondary indicators.

Primary

- surface water (A1)
- high water table (A2)
- saturation (A3)
- water marks (B1; non-riverine)
- sediment deposits (B2; non-riverine)
- drift deposits (B3; non-riverine
- surface soil cracks (B6)
- inundation visible on aerial imagery (B7)
- water-stained leaves (B9)
- salt crust (B11)
- biotic crust (B12)
- aquatic invertebrates (B13)
- hydrogen sulfide odor (C1)
- oxidized rhizospheres along living roots (C3)
- presence of reduced iron (C4)
- recent iron reduction in tilled soils (C6)
- thin muck surface (C7)

Secondary

- watermarks (B1; riverine)
- sediment deposits (B2; riverine)
- drift deposits (B3; riverine)
- drainage patterns (B10)
- dry-season water table (C2)
- crayfish burrows (C8)
- saturation visible on aerial imagery (C9)
- shallow aquitard (D3)
- FAC-neutral test (D5)

In the absence of all other hydrologic indicators and in the absence of significant modifications of an area's hydrologic function, positive hydric soil characteristics are assumed to indicate positive wetland hydrology. This assumption applies unless the site visit was done during the wet season of a normal or wetter-than-normal year. Under those circumstances, wetland hydrology would not be present.

Soils

The USACE and EPA, in their administration of Section 404 of the Clean Water Act, rely on the National Technical Committee for Hydric Soils (NTCHS) for a definition of hydric soils. According to the NTCHS, "A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." (Federal Register 1994)

Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation. Soil matrix and mottle colors are identified at each sampling plot using a Munsell soil color chart (Kollmorgen 1994). Generally, an 18-inch or deeper pit is excavated with a shovel at each sampling plot unless refusal occurs above 18 inches.

Soils in each area are closely examined for hydric soil indicators, including the characteristics listed below. Hydric soil indicators are presented in three groups. Indicators for "All Soils" (A) are used in any soil regardless of texture, indicators for "Sandy Soils" (S) area used in soil layers with USDA textures of loamy fine sand or coarser, and indicators for "Loamy and Clayey Soils" (F) are used with soil layers of loamy very fine sand and finer (USACE 2008 and Vasilias et al. 2017).

- histosols (A1)
- histic epipedons (A2)
- black histic (A3)
- hydrogen sulfide (A4)
- stratified layers (A5)
- 1 cm muck (A9)
- depleted below dark surface (A11)
- thick dark surface (A12)
- sandy mucky mineral (S1)
- sandy gleyed matrix (S4)
- sandy redox (S5)
- stripped matrix (S6)
- loamy mucky mineral (F1)
- loamy gleyed matrix (F2)
- depleted matrix (F3)
- redox dark surface (F6)
- depleted dark surface (F7)
- redox depressions (F8)
- vernal pools (F9)
- 2 cm muck (A10)
- reduced vertic (F18)
- red parent material (TF2)

Hydric soils may be assumed to be present in plant communities that have complete dominance of obligate or facultative wetland species. In some cases, there is only inundation during the growing season and determination must be made by direct observation during that season, recorded hydrologic data, testimony of reliable persons, and/or indication on aerial photographs.

NON-WETLAND WATERS OF THE U.S.

The non-wetland Waters of the U.S. designation is met when an area has periodic surface flows but lacks sufficient indicators to meet the hydrophytic vegetation and/or hydric soils criteria. For purposes of delineation and jurisdictional designation, the non-wetland Waters of the U.S. boundary in non-tidal areas is the OHWM as described in the Section 404 regulations (33 CFR Part 328).

U.S. Geological Survey Mapping

The U.S. Geological Survey (USGS) quad maps are one of the resources used to aid in the identification and mapping of jurisdictional areas. Their primary uses include understanding the subregional landscape position of a site, major topographical features, and a project's position in the watershed.

In our experience, the designation of watercourse as a blue-line stream (intermittent or perennial) on USGS maps has been unreliable and typically overstates the hydrology of most streams. This has also been the experience of others, including the late Dr. Luna Leopold. Dr. Leopold was a hydrologist with USGS from 1952 to 1972, professor in the Department of Geology and Geophysics and Department of Landscape Architecture, University of California, Berkeley from 1972 to 1986, and Professor Emeritus from 1987 until his death in 2006. In regard to USGS maps, Dr. Leopold wrote, "I tried to devise a way of defining hydrologic criteria for the channels shown on topographic maps and developed some promising procedures. None were acceptable to the topographers, however. I learned that the blue lines on a map are drawn by non-professional, low-salaried personnel. In actual fact, they are drawn to fit a rather personalized aesthetic" (Leopold 1994).

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Appendix B

State Jurisdictional Information

CALIFORNIA FISH AND WILDLIFE REGULATIONS

The California Department of Fish and Wildlife (CDFW) regulates alterations or impacts to streambeds or lakes (wetlands) under Fish and Game Code Sections 1600 through 1616 for any private, state, or local government or public utility-initiated projects. The Fish and Game Code Section 1602 requires any entity to notify the CDFW before beginning any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers and streams as well as lakes in the state.

In order to notify the CDFW, a person, state, or local governmental agency or public utility must submit a complete notification package and fee to the CDFW regional office that serves the county where the activity will take place (CDFW 2016). A fee schedule is included in the notification package materials. Under the Permit Streamlining Act (Government Code Sections 65920 et seq.), the CDFW has 30 days to determine whether the package is complete. If the requestor is not notified within 30 days, the application is automatically deemed to be complete.

Once the notification package is deemed to be complete, the CDFW will determine whether the applicant will need a Lake or Streambed Alteration Agreement (SAA) for the activity, which will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an SAA is required, the CDFW will conduct an on-site inspection, if necessary, and submit a draft SAA that will include measures to protect fish and wildlife resources while conducting the project. If the applicant is applying for a regular SAA (less than five years), the CDFW will submit a draft SAA within 60 calendar days after notification is deemed complete. The 60-day time period does not apply to notifications for long-term SAAs (greater than five years).

After the applicant receives the SAA, the applicant has 30 calendar days to notify the CDFW whether the measures in the draft SAA are acceptable. If the applicant agrees with the measures included in the draft SAA, the applicant will need to sign the SAA and submit it to the CDFW. If the applicant disagrees with any measures in the draft SAA, the applicant must notify the CDFW in writing and specify the measures that are not acceptable. Upon written request, the CDFW will meet with the applicant within 14 calendar days of receiving the request to resolve the disagreement. If the applicant fails to respond in writing within 90 calendar days of receiving the draft SAA, the CDFW may withdraw that SAA. The time periods described above may be extended at any time by mutual agreement.

After the CDFW receives the signed draft SAA, the CDFW will make it final by signing the SAA; however, the CDFW will not sign the SAA until it both receives the notification fee and ensures that the SAA complies with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.). After the applicant receives the final agreement, the applicant may begin the project, provided that the applicant has obtained any other necessary federal, state, and/or local authorizations.

WATER RESOURCE CONTROL BOARD REGULATIONS

SECTION 401 WATER QUALITY CERTIFICATION

Whenever a project requires a federal Clean Water Act (CWA) Section 404 permit or a Rivers and Harbors Act Section 10 permit, it must first obtain a CWA Section 401 Water Quality Certification. The Regional Water Quality Control Board (RWQCB) administers the 401 Certification program. Federal CWA Section 401 requires that every applicant for a Section 404 permit must request a Water Quality Certification that the proposed activity will not violate state and federal water quality standards.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The State Water Resource Control Board (SWRCB) and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) as described in the California Water Code (SWRCB 2017). The California Water Code is the State's version of the federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal. State waters that are not federal waters may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue Waste Discharge Requirements (WDRs) or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

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Appendix C

Representative Drainage Photographs

Photograph 1: View of the eastern portion of Bouquet Canyon Creek, facing downstream. The unvegetated river wash can be seen in the foreground and the mule fat scrub community can be seen in the distance.

Photograph 2: View of the central portion of Bouquet Canyon Creek within the project site, facing upstream. The unvegetated river wash can be seen in the foreground and the giant reed stand vegetation community can be seen along the banks.

Photograph 3: View of the western portion of Bouquet Canyon Creek within the project site, facing upstream. The giant reed stand vegetation community can be seen along the banks.

Photograph 4: View of the western most portion of Bouquet Canyon Creek within the project site, facing upstream. The giant reed stand vegetation community can be seen along the banks.

Source: HELIX 2017

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HELIX Environmental Planning

Representative Drainage Photographs

Appendix H

Oak Tree Survey Report

HELIX Environmental Planning, Inc.
16485 Laguna Canyon Road, Suite 150
Irvine, CA 91942
949.234.8770 tel
619.462.1515 fax
www.**helixepi**.com

March 21, 2019 IPQ-25

Mr. Scott Covington
Integral Communities
888 San Clemente Drive
Newport Beach, CA 92660

Subject: Oak Tree Survey Report for the Bouquet Canyon Road Project

Dear Mr. Covington:

HELIX Environmental Planning, Inc. (HELIX) prepared this report to document the results of an oak tree survey conducted for the proposed Bouquet Canyon Road Project (project) located the City of Santa Clarita (City), Los Angeles County, California. The purpose of this report is to provide an inventory of all species of oak tree (*Quercus* spp.) within 200-feet of the project footprint with at least one trunk over 6 inches in circumference at a point 4.5 feet above natural grade and to determine the presence of Heritage Trees as defined under the City's Oak Tree Preservation Ordinance (17.51.040; ordinance). This report was also prepared to provide supporting information for obtaining an Oak Tree Permit if sought in the future.

STUDY AREA LOCATION

The approximately 94-acre study area is generally located 6.9 miles to the east of Interstate 5 and 3.8 miles to the northwest of California State Route 14 in the City of Santa Clarita (Figure 1, *Regional Location*). Specifically, the study area is located directly south of the intersection of David Way and Bouquet Canyon Road. The study area is within Section 6 of Township 4 North, Range 15 West of the Mint Canyon, USGS 7.5-minute topographic quadrangle (Figure 2, *USGS Topography*).

Immediate surrounding land uses include existing residential developments to the north and west, a mixture of undeveloped land and residential development to the south, and undeveloped land and juvenile detention schools to the east (Figure 3, *Aerial Photograph*). The study area is located approximately 0.20 mile to the southeast of Haskell Canyon Open Space and 1.40 miles to the south of Angeles National Forest.

REGULATORY FRAMEWORK

The City's Oak Tree Preservation ordinance states, "No person shall cut, prune, remove, relocate, endanger, damage, or encroach into the protected zone of any oak tree on any public or private property within the City" (City of Santa Clarita [City] 2013). The protected zone of the oak tree includes

the area within five feet of the dripline (canopy extent), but no less than 15 feet from the trunk. To remove any oak tree or to subject its protected zone to major encroachment, an Oak Tree Permit must be obtained. Trees subject to the permit include all trees of the oak species (*Quercus* sp.) exceeding 6 inches in circumference when measured at a point 4.5 feet above the tree's natural grade. Encroachment is defined as intrusion into the protected zone of an oak tree, which includes but is not limited to, intrusion by trenching, paving, pruning, dumping, parking of commercial vehicles. Major encroachment is defined by the City's ordinance as "an area between the outer edge of the trunk and fifty percent of the diameter of the protected zone" and minor encroachment is defined as an area between the outermost edge of the protected zone and fifty percent of the diameter of the protected zone" (City 2013).

To obtain an Oak Tree Permit, an application must be submitted to the City Manager or designated representative ("Director") and a filing fee as established by the City Council must be paid. The conditions of the Oak Tree Permit will require native oak trees at a minimum of 24-inch box size to be planted for protected trees that are removed or subjected to major encroachment. The number of replacement trees required is dependent upon the circumference of the tree to be impacted. These guidelines are described in Subsection B of the Oak Tree Preservation Ordinance (City 2013), and reproduced below in Table 1, *Number of Replacement Trees*.

Table 1
NUMBER OF REPLACEMENT TREES

Circumference of Tree Destroyed (4 feet above ground level)	Number of Replacement Trees Required for Each Tree Destroyed
Under 12 inches	2
12 to 18 inches	3
18 to 24 inches	4
24 to 30 inches	5
30 to 36 inches	6
Over 36 inches	1 additional replacement tree per incremental increase of 6 inches

Source: City of Santa Clarita (2013)

Replacement trees must be placed on the same property. If there is no appropriate location on-site, the replacement trees may be donated to the City or the monetary value of the required replacement trees may be paid to the City at the discretion of the Director.

Heritage Oak Trees are given special consideration and may be fully protected or subject to requirements stricter than those of a standard protected oak tree. A Heritage Oak Tree is defined as any oak tree measuring 108 inches in circumference when measured 4.5 feet above the tree's natural grade. In the case of trees with multiple trunks, two or more trunks each must measure 72 inches or greater in circumference when measured 4.5 feet above the tree's natural grade.

METHODS

HELIX International Society of Arboriculture (ISA) Certified Arborist Daniel Torres (WE-12249) and HELIX Biologist/Regulatory Specialist Ezekiel Cooley completed an oak tree survey on the study area and within a 200-foot buffer of the study area (survey area) on December 19 and 20, 2018. The purpose of the

survey was to document the presence of: (1) oak trees with at least one trunk over 6 inches in circumference at a point 4.5 feet above natural grade and (2) Heritage Oak Trees.

All oak trees within the survey area that satisfied the previously mentioned criteria were identified to species. The circumference at a point 4.5 feet above natural grade was measured. For trees with co-dominant stems at 4.5 feet above natural grade, the circumference of each stem was measured at this height. The average circumference of all the stems was calculated in order to determine the number of replacement trees required if the tree was to be removed or subject to major encroachment, as outlined in Table 1 above. Next, the height of each tree was estimated and an aluminum tag with a unique number was affixed to the north side of the tree at approximately three feet above natural grade. Trees located outside of the study area but located within the buffer area were not tagged since Integral Communities does not own this property. Finally, the location of each individual tree and the canopy extent were recorded with a global positioning system device with sub-meter accuracy. The collected data are not considered survey-grade accuracy and should not be used for construction purposes.

Physical and horticultural evaluations were performed for each protected tree according to the City's Oak Tree Preservation and Protection Guidelines (City 1990). The physical evaluation included the assessment of structure, terrain, and general appearance. The horticultural evaluation included the detection of any disease or pathogens and an assessment of the tree's overall vigor. The physical and horticultural evaluations were used to rate each tree on a scale ranging from A to F as outlined in the City's Preservation and Protection Guidelines. The rating system is reproduced below in Table 2, *Oak Tree Rating System*.

Table 2
OAK TREE RATING SYSTEM

Rating	Description
A – Outstanding	A healthy ad vigorous tree characteristic of its species and reasonably free of any visible signs of stress, disease or pest infestation.
B – Above Average	A healthy and vigorous tree with minor visible signs of stress, disease or pest infestation.
C – Average	Although healthy in overall appearance there is an abnormal amount of stress or disease and/or pest infestation.
D – Below Average/Poor	This tree is characterized by exhibiting a greater degree of stress, disease and/or pest infestation than normal and appears to be in a state of rapid decline. The degree of decline may vary greatly in signs of dieback, disease and pest infestation and appears to be in an advanced state of decline.

F – Dead	This tree exhibits no signs of life whatsoever.

Source: City of Santa Clarita (1990)

Following the oak tree survey, an impact assessment was conducted using the most recent project grading plans. The impact assessment was used to determine the number of oak trees that would be required to be removed or whose protected zone would be subject to major encroachment to complete project activities.

RESULTS

A total of 64 oak trees subject to an Oak Tree Permit were located within the survey area (Figure 4, *Oak Tree Locations*). Of these trees, 2 were coast live oak (*Quercus agrifolia*), 6 were scrub oak (*Quercus berberidifolia*), 2 were blue oak (*Quercus douglasii*), 53 were Tucker oak (*Quercus john-tuckeri*), and one was a valley oak (*Quercus lobata*). Six trees (approximately 9 percent) were assigned a rating of A – Outstanding, 22 trees (approximately 34 percent) were B – Above Average, 25 trees (approximately 40 percent) were C – Average, and 11 trees (approximately 17 percent) were D – Below Average. No dead trees were observed during the survey. Overall, there was very little disease noted on the oak trees within the survey area. The majority of trees (37 trees, approximately 58 percent) showed evidence of stress-related growth such as epicormic sprouting and suckers. No Heritage Oak Trees were found during the survey. The locations of all oak tree surveyed are shown in Figure 4. The data collected during the survey is included as Attachment A, *Oak Tree Survey Data*. Representative site and tree photographs are included as Attachment B, *Representative Photographs*.

IMPACT ASSESSMENT

All oak trees within the project footprint will be removed. In addition, the project will be required to implement fuel medication. The County Fire Department requires fuel modification zones to create a defensible space in the event a wildlife breaks out (County of Los Angeles N.D.). There are three different zones, which are outlined below:

Zone A (Setback Zone) – This zone extends 20 feet beyond the edge of any structures. The only allowed vegetation within this zone is green lawns, ground cover not exceeding six inches in height, and well-spaced shrubs. The landscape must be irrigated to promote healthy vegetation and fire resistance.

Zone B (Irrigated Zone) – This zone extends from the outermost edge of Zone A to 100 feet from structures. Green lawn, ground cover not exceeding six inches in height, and well-spaced shrubs and trees are allowed in this zone. The landscape must be irrigated to promote healthy vegetation and fire resistance.

Zone C (Native Brush Thinning Zone) – This zone extends from the outermost edge of Zone B to 200 feet from the structures. Well-spaced native vegetation and ornamental shrubs and trees are allowed. Vegetation must be thinned and species that constitute a fire risk are not allowed (e.g., chamise [*Adenostoma fasciculatum*], sages [*Salvia* spp.], California sagebrush, and California buckwheat). This zone does not require irrigation.

For the purpose of this assessment, oak trees located within Fuel Modification Zone A were considered impacted while oak trees located within Zones B and C were considered avoided.

Based on analyzing each surveyed oak's location in respect to the project grading plans and fuel modification zones, the project would require the removal of 26 oak trees, including 4 scrub oaks (*Quercus berberidifolia*), 2 blue oaks (*Quercus douglasii*), and 20 Tucker oaks (*Quercus john-tuckeri*). In addition, one Tucker oak would be subjected to major encroachment and two Tucker oaks would be subjected to minor encroachment. The remaining 35 oak trees would be completely avoided by the project (Table 3, *Impacts to Oak Trees*). A map with the location and protected zone of the oak trees assessed during this survey is included as Figure 5, *Impacts to Oak Trees*.

Table 3
IMPACTS TO OAK TREES

Species Name	Common Name	Number of Trees			
		Removed	Major Encroachment	Minor Encroachment	Avoided
Quercus agrifolia	coast live oak	0	0	0	2
Quercus berberidifolia	scrub oak	4	0	0	2
Quercus douglasii	blue oak	2	0	0	0
Quercus john-tuckeri	Tucker oak	20	1	2	30
Quercus lobata	valley oak	0	0	0	1
	TOTAL	**26**	**1**	**2**	**35**

MITIGATION

Based on the impacts to oak trees as quantified by the impact assessment, 27 oak trees will be removed or subjected to major encroachment. In order to receive an Oak Tree Removal Permit for these impacts, it is anticipated that the City will require 91 replacement trees to be planted or the equivalent monetary value of the replacement trees to be paid (Table 4, *Oak Tree Mitigation*). Trees that will be completely avoided or subject to minor encroachment will not require replacement trees.

Table 4
OAK TREE MITIGATION

Species Name	Common Name	Number of Trees	
		Removed/Major Encroachment	Replacement Trees Required
Quercus berberidifolia	scrub oak	4	9
Quercus douglasii	blue oak	2	19
Quercus john-tuckeri	Tucker oak	21	63
	TOTAL	**27**	**91**

CONCLUSION

Sixty-four (64) oak trees on the survey area were considered City-protected trees. Construction of the project will require 27 of these trees to be removed or to be subjected to major encroachment. It is anticipated that the City will require mitigation for these impacts through the purchase of 91 replacement trees or payment to the City of their equivalent monetary value. Thirty-seven (37) of these trees will be completely avoided or subjected to minor encroachment during project activities and will not require replacement trees.

During construction, trees subject to minor or major encroachment will require protection measures, including but not limited to those outlined within Section VII. Standards for Performance of Permitted Work of the Oak Tree Preservation Guidelines. Other general guidelines to protect trees during for project construction are included as Attachment C, *Tree Protection Recommendations*.

Should you have any questions or require additional information, please do not hesitate to contact me at (949) 234-1515 or DanielT@helixepi.com.

Sincerely,

Daniel Torres
ISA Certified Arborist (WE-12249A)

Enclosures:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Vicinity
Figure 4: Oak Tree Locations
Figure 5: Impacts to Oak Trees

Attachment A: Oak Tree Survey Data
Attachment B: Representative Photos
Attachment C: Tree Protection Recommendations

REFERENCES

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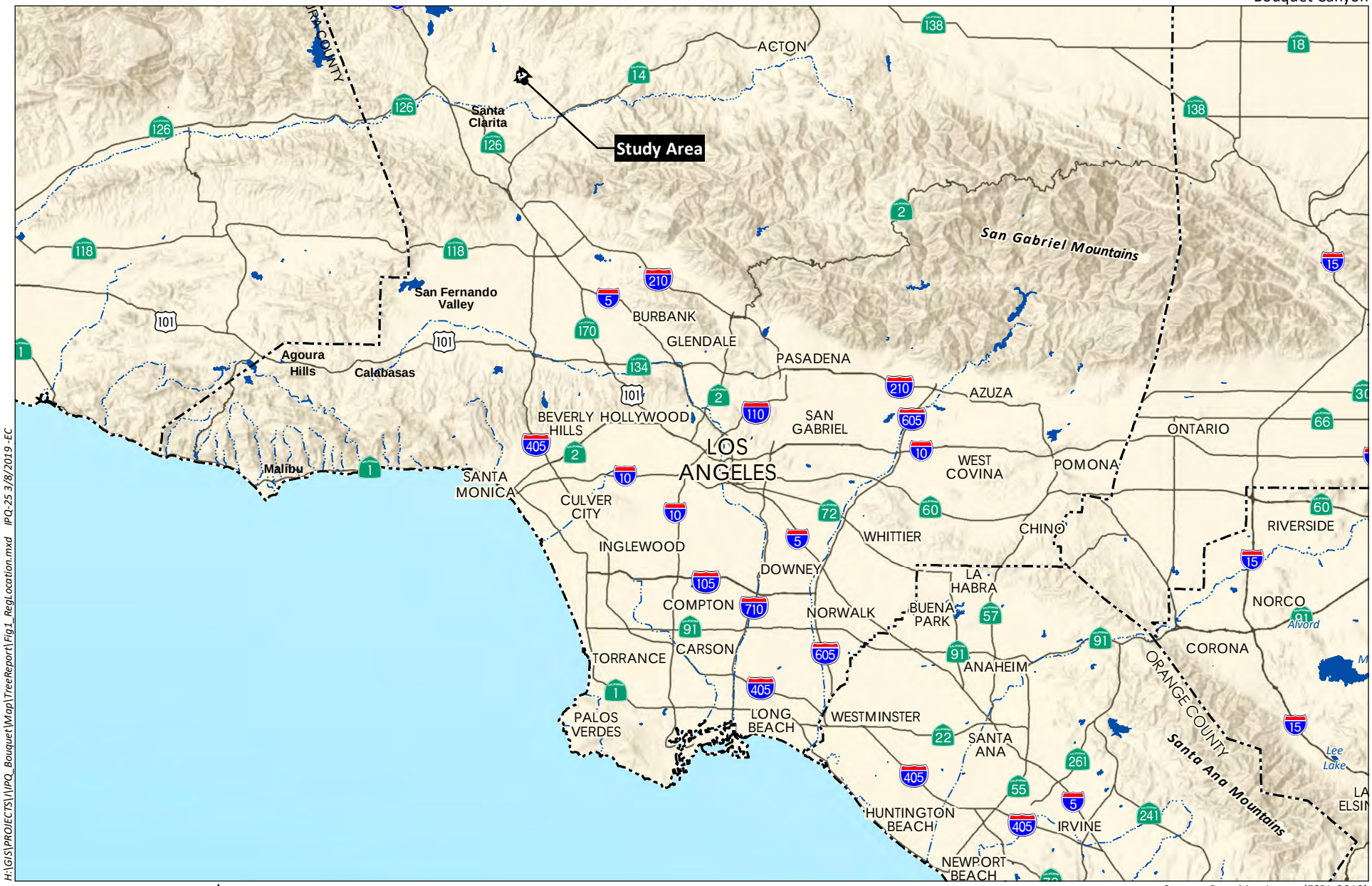


HELIX Environmental Planning

Regional Location

Figure 1

H:\GIS\PROJECTS\IVPQ_Bouquet\Map\TreeReport\Fig2_USGS.mxd IPQ-25 3/8/2019 -EC

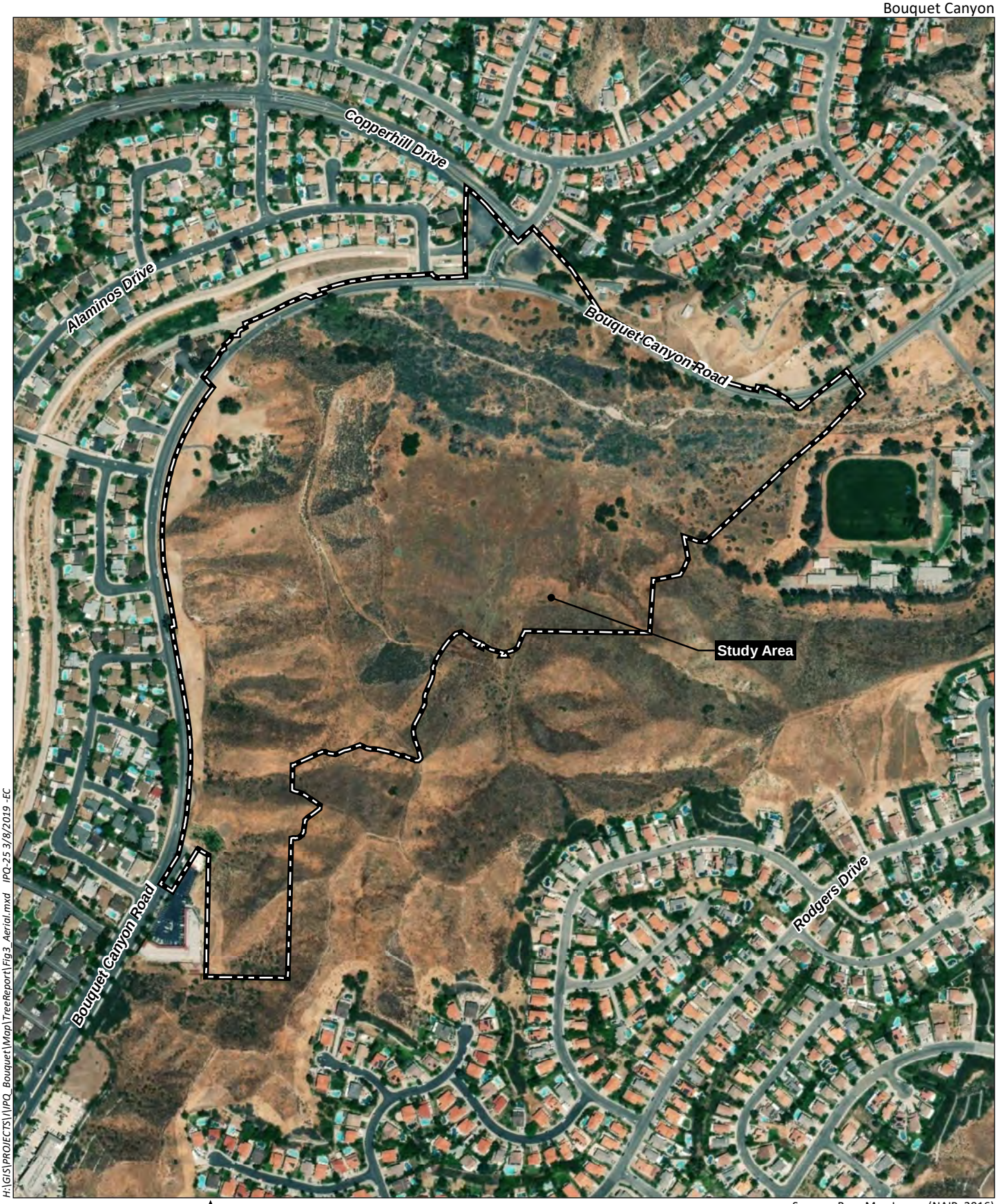
0 2,000 Feet

Source: Mint Canyon 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



H:\GIS\PROJECTS\IVPQ_Bouquet\Map\TreeReport\Fig3_Aerial.mxd IPQ-25 3/8/2019 -EC

0 500 Feet

Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Aerial Photograph

Figure 3

Bouquet Canyon

Study Area
200-foot Survey Buffer
Tree Protected Zone
Tree Canopy
Quercus agrifolia
Quercus berberidifolia
Quercus douglasii
Quercus john-tuckeri
Quercus lobata

0 50 Feet

0 50 Feet

0 50 Feet

0 50 Feet

0 375 Feet

N

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Source: Base Map Layers (Nearmap, 2017)

HELIX Environmental Planning

Oak Tree Locations

Figure 4

Bouquet Canyon

Study
200-foot Survey Buffer
Grading Limits

Fuel Modification Zone

Zone A
Zone B
Zone C

Oak Tree Survey Data

Tree Protected Zone
Tree Canopy
Quercus agrifolia
Quercus berberidifolia
Quercus douglasii
Quercus john-tuckeri
Quercus lobata

0 50 Feet

0 375 Feet

N

Source: Base Map Layers (Nearmap, 2017)

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HELIX Environmental Planning

Impacts to Oak Trees

Figure 5

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
1	Tucker oak *Quercus john-tuckeri*	6	10	3	1	1	5	6	1	1	3	Deep v-crotch at 7", canopy is N-S oriented, does not extend E-W.	Appears vigorous, some small galls present, some old, healed trunk injuries.	B		Removal
2	Tucker oak *Quercus john-tuckeri*	7.5	9	8	6	3	6	5	6	6	6	Trunk leaning northeast, canopy overall well-distributed.	Galls, insect damage.	B		Removal
3	coast live oak *Quercus agrifolia*	12.75	16	4	3	4	6	7	6	5	6	Tree leaning south.	Has stress-related suckers, sapsucker holes.	B	No tag; off-site.	Avoided
4	coast live oak *Quercus agrifolia*	10, 9, 7	9	2	6	3	1	4	3	4	3	Tree has been topped.	All epicormic growth, tree in severe decline.	D	No tag; off-site.	Avoided
5	Tucker oak *Quercus john-tuckeri*	11.75, 12, 8.5	15	9	8	6	5	4	4	5	10	Tree leaning north, away from adjacent eucalyptus.	Some galls present, bark damage present (chainsaw cut)-healing.	B	No tag; off-site.	Minor Encroach-ment
6	Tucker oak *Quercus john-tuckeri*	9, 13, 13	16	4	6	9	15	10	5	5	2	Large failure at v-crotch with decay (old main stem), exposed roots.	Declining, significant amount of epicormic sprouting.	D		Removal
7	Tucker oak *Quercus john-tuckeri*	18, 19, 24	22	10	10	10	8	15	10	10	9	Exposed roots, wide angle crotch at base.	Declining, epicormic sprouting, canopy dieback.	D		Removal

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
8	Tucker oak *Quercus john-tuckeri*	9.75, 6	5	2	8	2	2	5	10	2	4	Severe lean to south, on steep slope.	Tree is being shaded, very sparse canopy, canopy dieback.	D	Stump shoots from old dead tree.	Removal
9	Tucker oak *Quercus john-tuckeri*	20	15	6	3	12	12	5	5	2	7	Exposed roots, on steep slope.	Large split with internal decay in trunk, internal decay throughout.	D		Removal
10	blue oak *Quercus douglasii*	85, 36	45	10	15	15	20	20	25	10	10	Main trunk split long ago, large trunk leaning north, southern-most trunk with severe lean south, on steep slope.	Lots of mistletoe, canopy very sparse.	D		Removal
11	Tucker oak *Quercus john-tuckeri*	9	16	5	3	3	4	2	6	2	2	On steep slope.	Most of canopy is dead, mistletoe present, epicormic sprouting.	D	Tree is almost completely dead.	Removal
12	scrub oak *Quercus berberidifolia*	10	15	2	8	8	8	2	2	2	2	Trunk leaning to north, multi-stem, one stem is dead, on steep slope.	Epicormic growth, very sparse canopy.	D		Removal

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
13	scrub oak *Quercus berberidifolia*	12, 9.5, 10, 10	15	5	6	8	8	9	5	2	2	One dead stem, on steep slope.	Epicormic sprouting, severe decline, some galls present.	D		Removal
14	scrub oak *Quercus berberidifolia*	22.5. 22, 17, 10, 7.5	20	12	12	12	5	12	10	10	12	Some stems have internal decay, on steep slope.	Epicormic sprouting, mistletoe present, tree in decline.	D		Removal
15	scrub oak *Quercus berberidifolia*	7.5. 7.5, 8, 5.5	14	5	3	8	6	8	5	5	9	Good balance, on steep slope.	Some mistletoe present, significant amount of epicormic sprouting, some canopy dieback.	C		Removal
16	Tucker oak *Quercus john-tuckeri*	9.5	10	1	1	1	10	10	10	2	1	Most of canopy is in the south, shaded in the north, on steep slope.	Some dieback present, significant amount of epicormic sprouting.	C		Removal
17	Tucker oak *Quercus john-tuckeri*	5.5, 6.5, 7, 9	12	7	3	3	4	8	8	8	8	Some included bark at v-crotch about 5” above ground, tree on steep slope.	Small amounts of dieback and epicormic sprouting present.	B		Removal

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
18	blue oak *Quercus douglasii*	40.5, 24, 47, 52.5, 48	35	30	25	25	28	27	30	25	25	Large multi-stem tree with big split and decay, all stems leaning towards the south, tree on steep slope.	Tree is experiencing some dieback, epicormic sprouting, sap sucker and borer holes present.	C	Tree tagged 61 in old survey, probably burned.	Removal
19	Tucker oak *Quercus john-tuckeri*	22, 16.5, 17, 13, 10, 11	30	18	15	10	15	15	22	15	15	Included bark in all crotches, tree on a steep slope.	Appears vigorous, some cankers, canopy is somewhat sparse.	B		Removal
20	Tucker oak *Quercus john-tuckeri*	17.5, 17, 14, 14	15	10	10	10	7	8	8	15	10	Tree on steep slope, nexus of stems is 1' above ground.	Some canopy dieback present.	B		Removal
21	Tucker oak *Quercus john-tuckeri*	21, 25, 20.5, 9	20	20	20	10	20	18	10	15	20	Multiple trunks all leaning in different directions, tree on a steep slope.	Most of canopy is epicormic sprouting, borer and sapsucker holes are present.	C		Removal
22	Tucker oak *Quercus john-tuckeri*	15, 19, 18.5, 19, 20	25	20	3	2	1	1	20	20	20	Tree is on a steep slope, included bark present.	Tree appears healthy but is being shaded, canopy is somewhat sparse, significant dieback is present.	C		Removal

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
23	Tucker oak *Quercus john-tuckeri*	44.5	35	20	20	5	1	1	10	18	20	Strong lean to the north.	Significant amount of dieback in the lower canopy.	B		Removal
24	Tucker oak *Quercus john-tuckeri*	18, 12.5, 42, 22.5	30	18	12	9	9	15	15	15	15	V-crotch with included bark at 7", 1.5', and 2' above ground.	Some galls are present.	B	Tree tagged 60 in old survey.	Removal
25	Tucker oak *Quercus john-tuckeri*	9, 9, 10, 6	9	8	8	8	5	2	6	8	8	Tree is on a steep slope.	Some epicormic sprouting is present, fairly even canopy.	B		Removal
26	Tucker oak *Quercus john-tuckeri*	6.5	10	8	8	8	8	8	8	8	8	Even canopy spread, tree growing in the open.	Some galls are present, canopy is dense and healthy.	A	Shrub form, more than 25 stems, all 1-3 inches in circum-ference.	Removal
27	Tucker oak *Quercus john-tuckeri*	6	9	6	4	4	4	6	6	4	5	Structurally good, open, even canopy.	Significant amount of epicormic growth, most leaves are affected by aphids.	D	Some mechanical damage on the east side of the trunk.	Removal
28	Tucker oak *Quercus john-tuckeri*	6.5	8	8	8	8	8	8	8	8	8	Tree is on a steep slope.	Some galls are present.	B	No tag; off-site.	Avoided
29	Tucker oak *Quercus john-tuckeri*	10, 6, 6.5, 5.5, 11	9	10	4	9	7	4	5	6	7		Dense canopy, tree appears vigorous.	A	No tag; off-site.	Avoided
30	Tucker oak *Quercus john-tuckeri*	9, 11	12	7	5	6	5	5	6	6	6		Dense canopy, tree appears vigorous.	A	No tag; off-site.	Avoided

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
31	Tucker oak *Quercus john-tuckeri*	6.5, 8, 6.5	8	7	6	4	3	4	4	7	6		Dense canopy, tree appears vigorous.	A	No tag; off-site.	Avoided
32	Tucker oak *Quercus john-tuckeri*	6	9	7	5	6	5	5	5	6	6		Dense canopy, tree appears vigorous.	A	No tag; off-site.	Avoided
33	Tucker oak *Quercus john-tuckeri*	12, 9.5, 14.5	13	14	5	7	1	1	4	12	10	Strong lean downhill.	Tree is vigorous, some minor boring insect damage, significant amount of stress-related sprouting at base.	C	No tag; off-site.	Avoided
34	Tucker oak *Quercus john-tuckeri*	14.5, 11	14	4	5	3	9	7	10	13	3	Good structure.	Tree appears vigorous, lots of stress-related sprouting at base, epicormic sprouting present.	C	No tag; off-site.	Avoided
35	Tucker oak *Quercus john-tuckeri*	8, 13, 16, 9.5	15	10	10	7	5	3	9	4	7	Internal decay present in one main trunk.	Significant amount of stress-related sprouting at base.	C	No tag; off-site.	Avoided
36	Tucker oak *Quercus john-tuckeri*	6	12	5	6	6	4	5	5	5	4		Significant amount of epicormic sprouting, some galls present.	C	No tag; off-site.	Avoided

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
37	Tucker oak *Quercus john-tuckeri*	8	12	5	5	5	5	4	3	3	5		Significant amount of epicormic sprouting, some galls present.	C	No tag; off-site.	Avoided
38	Tucker oak *Quercus john-tuckeri*	9.5, 10, 8.5	12	12	10	5	10	10	6	5	2	Lean is causing bark to split.	Some internal decay and stress-related sprouting at the base is present.	C	No tag; off-site.	Avoided
39	Tucker oak *Quercus john-tuckeri*	7	10	4	3	3	3	4	4	5	5		Stress-related sprouting at the base and epicormic sprouting is present.	C	No tag; off-site.	Avoided
40	Tucker oak *Quercus john-tuckeri*	6, 5	12	5	4	7	8	8	6	7	5		Some galls are present, tree is in good health overall.	B	No tag; off-site.	Avoided
41	Tucker oak *Quercus john-tuckeri*	8, 6	15	7	6	5	3	10	10	3	3	Bark has a healing fissure down the middle of the trunk.	Some epicormic sprouting is present.	B	No tag; off-site.	Avoided
42	Tucker oak *Quercus john-tuckeri*	6.5, 6	12	8	8	2	2	8	7	7	7	Several branches are rubbing against each other.	Some galls are present.	B	No tag; off-site.	Avoided
43	Tucker oak *Quercus john-tuckeri*	6, 4	12	5	5	3	4	4	6	7	7		Some epicormic sprouting is present.	B	No tag; off-site.	Avoided

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
44	Tucker oak *Quercus john-tuckeri*	6, 6	12	7	8	9	5	3	3	7	7		Some canopy dieback is present.	C	No tag; off-site.	Avoided
45	Tucker oak *Quercus john-tuckeri*	7, 6, 6, 6, 5	13	8	8	6	6	9	10	9	9	Tree is in shrub form, several widely-spaced branches.	Some epicormic sprouting and galls are present.	B	No tag; off-site.	Avoided
46	Tucker oak *Quercus john-tuckeri*	6, 6, 6, 6, 8, 8.5	9	7	7	7	7	7	7	7	7	Tree is in shrub form, several widely-spaced branches.	Some epicormic sprouting is present, tree exhibiting vigorous growth.	B	No tag; off-site.	Avoided
47	Tucker oak *Quercus john-tuckeri*	6.5, 4	9	9	8	7	4	4	5	7	9	Tree is leaning downslope causing fissures in some stems.	Main stem has a large fissure with internal decay.	C	No tag; off-site.	Avoided
48	Tucker oak *Quercus john-tuckeri*	6, 5, 5	9	7	9	6	3	3	8	9	8	Some healing cracks are present at the base of main stems.	Some galls are present, some canopy dieback.	B	No tag; off-site.	Avoided
49	Tucker oak *Quercus john-tuckeri*	10, 6.5, 9.5	13	11	11	5	5	5	2	5	10	Good structure.	Some dieback and significant amounts of epicormic sprouting are present.	C	No tag; off-site.	Avoided

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
50	Tucker oak *Quercus john-tuckeri*	9, 7, 6, 6	13	2	8	8	7	7	7	2	2	Good structure.	Significant amount of epicormic sprouting is present.	C	No tag; off-site.	Avoided
51	Tucker oak *Quercus john-tuckeri*	15, 16, 16, 17	18	12	14	15	10	5	9	14	14	V-crotches are 1' above ground, some chainsaw wounds are present.	Significant amount of epicormic sprouting is present.	C	No tag; off-site.	Avoided
52	Tucker oak *Quercus john-tuckeri*	16.5, 10, 9.5, 17, 6, 9, 8.5	17	10	9	9	5	3	4	10	11	Many stems, but good structure.	Significant amount of epicormic sprouting and some canopy dieback are present.	C		Minor Encroach-ment
53	Tucker oak *Quercus john-tuckeri*	13	19	5	8	6	3	2	2	5	5	V-crotch at 6" and 4' above ground, tree has a slight lean.	Most of canopy is epicormic sprouting.	C	No tag; off-site.	Avoided
54	Tucker oak *Quercus john-tuckeri*	10, 8, 10	17	11	11	5	5	3	3	5	5		Most of canopy is epicormic sprouting, significant canopy dieback is present.	C	No tag; off-site.	Avoided
55	Tucker oak *Quercus john-tuckeri*	12	17	11	9	9	1	1	6	8	9	Tree is leaning northeast.	Borer holes and internal decay are present.	C	No tag; off-site.	Avoided

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
56	Tucker oak *Quercus john-tuckeri*	12, 11, 7, 7, 8, 10.5	15	8	8	6	8	9	10	9	7		Borer holes, some epicormic sprouting, internal decay, and canopy dieback are present.	C	No tag; off-site.	Avoided
57	scrub oak *Quercus berberidifolia*	9.5, 9.5, 7, 10, 8, 6.5, 6	12	9	10	10	7	5	9	9	9	Tree is in shrub form, mostly shaded by surrounding trees.	Some galls and epicormic sprouting are present.	B	No tag; off-site.	Avoided
58	scrub oak *Quercus berberidifolia*	7, 6	11	5	1	3	8	8	8	8	3	Tree is in shrub form.	Canopy is dying back, significant amount of epicormic sprouting is present.	C	No tag; off-site.	Avoided
59	Tucker oak *Quercus john-tuckeri*	8, 8, 8, 8, 8, 12.5	11	6	6	8	5	5	5	7	7	Tree is in shrub form.	A healing fissure and internal decay are present in one of the main stems.	C	No tag; off-site.	Avoided
60	Tucker oak *Quercus john-tuckeri*	6, 6, 6, 9, 4	8	6	6	8	5	7	9	9	9	Stems are all widely-spaced, spread out, tree is in shrubby form.	Some canopy dieback is present.	B	No tag; off-site, there is a packrat midden in the middle of the trunks.	Avoided

Tree Tag No.	Species	Circum-ference (in)	Height (ft)	Canopy Extent (feet)								Physical Evaluation	Horticultural Evaluation	Oak Tree Rating	Comments	Proposed Impacts
				N	NE	E	SE	S	SW	W	NW					
61	Tucker oak *Quercus john-tuckeri*	6, 6, 4, 5, 8, 6, 4, 4	9	8	6	6	6	6	7	9	8	Tree is in shrub form, stems are spread out.	Some canopy dieback, epicormic sprouting, and galls are present.	B		Major Encroach-ment
62	Tucker oak *Quercus john-tuckeri*	9, 7.5, 5.5, 6.5, 5.5, 8.5, 8, 6.5, 4, 5, 6	9	11	6	5	6	6	7	8	5		Cankers, galls, epicormic sprouting, and canopy dieback are present.	C		Removal
63	valley oak *Quercus lobata*	12, 22	20	5	7	7	7	7	7	7	7	V-crotch at 1.5’ and 5’ with included bark, tree is growing straight.	Vigorous growth, healthy specimen, no obvious signs of disease.	A	Circumfer-ence and canopy were estimated-tree is on private property.	Avoided
64	Tucker oak *Quercus john-tuckeri*	17, 32.5	19	10	10	10	10	10	8	8	10	Included bark, exposed roots, tree is growing on a steep slope.	Vigorous growth, some canopy dieback is present.	B		Removal

Photo 1: Tree 10 (blue oak, *Quercus douglasii*) adjacent to the northwestern corner of the study area.

Photo 2: Tucker oak (*Quercus john-tuckeri*) scrub adjacent to the southwestern corner of the study area.

Photo 3: Tree 51 (Tucker oak, *Quercus john-tuckeri*) assigned an oak tree rating of C for displaying significant amounts of epicormic growth.

Photo 4: Tree 62 (Tucker oak, *Quercus john-tuckeri*) assigned an oak tree rating of C for displaying canopy dieback and significant amounts of epicormic growth.

General Construction Site Recommendations

- A minimum 4-foot tall, brightly colored, synthetic fence should be installed around the outermost edge of the protected zone of trees that are designated for retention on-site. Encroachment into the fenced areas should be restricted to the minimum amount feasible and fencing should remain in place until all construction activities have ceased
- The fenced area should be kept clear of building materials, waste, and excess soil.
- No digging, trenching, compaction, or other soil disturbance should be allowed in the fenced area.
- The storage of construction equipment or hazardous materials such as gasoline, oil, or other toxic chemicals should not be allowed in or adjacent to the fenced area.
- Storage areas for equipment, soil, and construction materials as well as burn sites (if permitted), cement washout pits, and construction work zones should be kept away from protected trees and outside the fenced in area.
- Cable, chain, rope or signage should not be attached to retained trees.
- Designated roads and parking areas should be established. All construction personnel should be restricted to driving and parking in designated areas. Discharge of exhaust from construction vehicles and equipment should not be allowed near the protected zone of trees.
- Grade changes should be avoided near fenced areas to the maximum extent possible.

Recommendations for Construction Activities in the Vicinity of Retained Trees

- All necessary clearance pruning should be conducted by a Certified Tree Worker or Certified Arborist.
- Trenching within the dripline of retained trees should be avoided to the maximum extent practicable and kept a minimum distance of 10 times the diameter of the tree away from its trunk. If necessary, this trenching should be conducted using hand excavation or compressed air to reduce impacts to tree roots. Machine trenching should not be allowed within the dripline of retained trees. If pipes must be installed closer to the tree than a distance of 10 times the diameter of the tree away from its trunk, they should be bored beneath the tree a minimum of 3 feet below the ground surface to reduce impacts to roots.
- Excavation should also be minimized within the dripline of retained trees. Construction within the dripline of retained trees should be conducted in a manner that minimizes excavation and provides for the best preservation of roots as determined by the Project Arborist.
- If tree roots are severed outside of the fenced area, they should be severed cleanly and kept moist. All exposed roots outside of fenced areas should be covered with protective material during construction such as mulch or plywood sheets to reduce soil

compaction. Protective material should be removed upon completion of construction activities.

- Trenching and excavation should be avoided during hot, dry, weather and trees shall be watered before, during, and after trenching and excavation within the dripline of retained trees to offset water loss due to cut roots.
- Grading within the driplines of retained trees should be avoided wherever feasible.
- To prevent soil compaction, several inches of wood chips should be spread in the root zone area and covered with steel plates.

Recommendations for Protection of Trees Post-Construction

- Post-construction inspections of the trees should be conducted by a Certified Arborist or Certified Tree Worker to determine if retained trees are stressed (e.g., water stress, nutrient stress) or damaged (e.g., broken branches, trunk damage). Appropriate corrective actions should be implemented as necessary. Such corrective actions may include application of root stimulant to encourage new root growth in trees that have a significant portion of their roots lost due to cutting or soil compaction.
- Aeration of soil by vertical mulching or similar technique should be implemented around retained trees to offset the impacts of soil compaction that has already occurred due to construction activities and other site uses.
- Long term maintenance should also be conducted by a Certified Arborist or tree care specialist to assist the trees with recovering from construction related stress and may include watering, fertilization, pruning, and/or pest/disease control.

Appendix I

Rare Plant Species Potential to Occur

Appendix I
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Berberis nevinii	Nevin's barberry	FE/SE CRPR 1B.1	Shrub. Occurs on steep, north-facing slopes or washes within chaparral, cismontane woodland, coastal scrub, and riparian scrub. Elevation range 70-825 m. Flowering period Mar-May.	**Presumed absent.** The study area supports suitable habitat for this species. The nearest observation of this species was recorded in 1987 within the Santa Clara river, approximately 4.25 miles to the southwest of the study area. This species was not observed during the rare plant surveys.
Calochortus clavatus var. *gracilis*	slender mariposa-lily	CRPR 1B.2	Medium perennial herb. Occurs in shaded foothills and canyons within chaparral, coastal scrub, and valley grassland. Elevation range below 1000 m. Flowering period May-Jun.	**Observed.** A total of 496 individuals were observed on the study area during the rare plant surveys.
Calochortus palmeri var. *palmeri*	Palmer's mariposa-lily	CRPR 1B.2	Medium perennial herb. Occurs in mesic and vernally moist areas within chaparral, lower montane coniferous forest, and meadows. Also occurs within seeps. Elevation range 1200-2200 m. Flowering period May-Jul.	**None.** The study area does not support mesic or vernally moist areas. There are no records of this species in the Santa Clarita area; Los Angeles County records are confined to the San Gabriel Mountains. This study area is below the elevation range for this species.

Appendix I (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Dodecahema leptoceras	slender-horned spineflower	FE/SE CRPR 1B.1	Small annual herb. Occurs in sandy or gravelly places within chaparral, cismontane woodland, and coastal scrub associated with alluvial fans. Elevation range 200-700 m. Flowering period May-Jun.	**Presumed absent.** The study area supports suitable habitat for this species. The nearest observation of this species was recorded in 1979, approximately 3.75 miles to the east of the study area within a non-specific area of Mint Canyon. This species was not observed during the rare plant surveys.
Navarretia fossalis	spreading navarretia	FT CRPR 1B.1	Small annual herb. Occurs in vernal pools, vernal swales, or roadside depressions. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools. Elevation range 30-1300 m. Flowering period Apr-Jun.	**None.** The study area does not support vernally moist areas.
Navarretia setiloba	Piute Mountains navarretia	CRPR 1B.1	Small annual herb. Occurs on depressions in clay or gravelly loam within valley grassland, foothill woodland, and pinyon-juniper woodland. Elevation range 500-2100 m. Flowering period Apr-Jul.	**Presumed absent.** The study area contains suitable habitat for the species. The nearest observation of this species was recorded in 2001, approximately 2.25 miles the to the east of the study area within Plum Canyon. This species was not observed during the rare plant surveys.
Opuntia basilaris var. *brachyclada*	short-joint beavertail	CRPR 1B.2	Medium succulent. Occurs on sandy or coarse granitic soil within chaparral, Joshua tree woodland, and oak/pine woodland. Elevation range 1200-1800 m. Flowering period Apr-Jun.	**None.** The study area is below the elevation range for this species.

Appendix I (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Orcuttia californica	California Orcutt grass	FE/SE CRPR 1B.1	Small annual herb. Occurs in or near vernal pools. This species tends to grow in wetter portions of the vernal pool basin but does not show much growth until the basins become somewhat desiccated. Elevation range 0-700 m. Flowering period Apr-Aug.	**None.** The study area does support vernal pools.

Source: HELIX (2018)

[1] Sensitive species reported within the Mint Canyon quadrangle on CNDDB and CNPS databases.

[2] Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened.
CRPR = California Rare Plant Rank: 1A – presumed extinct; 1B – rare, threatened, or endangered in California and elsewhere; 2A – rare, threatened, or endangered in California and elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere; 3 – more information on distribution, endangerment, ecology, and/or taxonomic validity is needed. Extension codes: .1 – seriously endangered; .2 – moderately endangered; . 3 – not very endangered.

[3] Potential to Occur is assessed as follows: **None**: Habitat suitable for species survival does not occur on the study area, the study area is not within geographic range of the species, and/or the study area is not within the elevation range of the species; **Low**: Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **Moderate**: Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **High**: Suitable habitat of sufficient extent is present on the study area and the species has been recorded recently on or near the study area, but was not observed during surveys for the current project. However, focused/protocol surveys are not required or have not been completed; **Presumed Present**: The species was observed during focused surveys for the current project and is assumed to occupy the study area; **Presumed Absent**: Suitable habitat is present on the study area but focused surveys for the species were negative.

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Appendix J

Sensitive Animal Species Potential to Occur

Appendix J
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Invertebrates				
Branchinecta lynchi	vernal pool fairy shrimp	FT	Most commonly found in swale, earth slump, or basal-flow depression pools in unplowed grasslands. Requires cool-water pools.	**None.** The study area does not support vernal pools or other depressional pool habitat.
Euphydryas editha quino	Quino checkerspot butterfly	FE	Primary larval host plants in San Diego are dwarf plantain (*Plantago erecta*) at lower elevations, woolly plantain (*P. patagonica*) and white snapdragon (*Antirrhinum coulterianum*) at higher elevations. Owl's clover (*Castilleja exserta*) is considered a secondary host plant if primary host plants have senesced. Potential habitat includes vegetation communities with areas of low-growing and sparse vegetation. These habitats include open stands of sage scrub and chaparral, adjacent open meadows, old foot trails and dirt roads.	**None.** The study area is located outside of this species' current range. A historical record of this species was documented on CNDDB in 1920, approximately 2.25 miles to the east of the study area within non-specific area in Mint Canyon. The study area does not support this species' primary larval host plant, although a few scattered owl's clover individuals were observed.
Fish				
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback	FE/SE	Occurs in weedy ponds, backwaters, and among emergent vegetation in small, south coast-flowing streams.	**None.** The study area does not support suitable perennial water for this species.
Amphibians				
Spea hammondii	western spadefoot	SSC	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; require temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* spp.)	**None.** The study area does not support suitable temporary pools required for breeding.

Appendix J (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Reptiles				
Anniella sp.	California legless lizard	SSC	Occurs in a variety of habitats, such as coastal dunes, sandy washes, and alluvial fans within chaparral, pine-oak woodlands, stream terraces with cottonwoods, sycamores or oaks. Prefers areas with leaf litter under trees and bushes with generally moist and loose soil.	**Moderate.** The study area supports suitable habitat for this species, particularly within and adjacent to Bouquet Canyon Creek. However, the site is relatively free of leaf litter due to presence of giant reed (*Arundo donax*) along the banks of Bouquet Canyon Creek. The nearest CNDDB occurrence was recorded in 2010, approximately 1.5 miles to the northwest of the study area along Pettinger Canyon Road.
Arizona elegans occidentalis	California glossy snake	SSC	Most common in desert habitats but also occur in chaparral, sagebrush, valley-foothill hardwood, pine-juniper, and annual grass. Prefers open sandy areas with scattered brush, but also found in rocky areas.	**Low.** The study area supports suitable chaparral habitat, although there has not been a CNDDB occurrence record in the area in over 50 years.
Aspidoscelis tigris stejnegeri	coastal whiptail	SSC	Open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	**High.** The study area supports suitable sage scrub, chaparral, and woodland habitat for this species. The nearest CNDDB occurrence was recorded in 2008, approximately 1.25 miles to the east of the study area along Hayfork Road.

Appendix J (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Reptiles (cont.)				
Phrynosoma blainvillii	coast horned lizard	SSC	Coastal sage scrub and open areas in chaparral, oak (Quercus sp.) woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* spp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**High.** The study area supports suitable sage scrub, chaparral, and oak woodland habitats. The nearest CNDDB occurrence was recorded in 2005, approximately 4.5 miles to the southwest of the study area within the Santa Clara River.
Thamnophis hammondii	two-striped gartersnake	SSC	Occurs along perennial and intermittent streams bordered by dense riparian vegetation, but occasionally associated with vernal pools or stock ponds.	**None.** The study area does not support perennial or intermittent streams or other aquatic habitats.
Birds				
Athene cunicularia	burrowing owl	SSC	Typical habitat is grasslands, open scrublands, agricultural fields, and other areas where there are ground squirrel burrows or other areas in which to burrow.	**Presumed Absent.** Although the study area supports suitable habitat and burrows, no burrowing owls were observed during the focused survey.

Appendix J (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Birds (cont.)				
Lanius ludovicianus	loggerhead shrike	SSC	Nests in dense, often thorny shrubs or trees. Will nest within brush piles or tumbleweeds when trees or shrubs are not present. Feeds on a wide variety of animals, including arthropods, amphibians, reptiles, small mammals, and small songbirds within open habitats such as grasslands, agricultural fields, pastures, shrublands, and ruderal areas with adequate perching locations.	**High.** Some portions of the study area support dense shrubs and trees suitable for nesting . The majority of the site supports suitable foraging habitat. The nearest CNDDB occurrence was recorded in 2005, approximately 1.25 miles to the northeast of the study area.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC	Occurs in coastal sage scrub and very open chaparral.	**Presumed Absent.** The study area supports coastal scrub and chaparral habitat. This species was not observed during focused surveys.
Mammals				
Corynorhinus townsendii	Townsend's big-eared bat	SCT/SSC	Occurs in a wide variety of habitats, although more common in mesic habitats. Usually roosts in caves, abandoned mines, and occasionally buildings. Forages for small moths along the edge of vegetation, such as riparian and woodland habitats.	**Low.** The study area does not contain suitable roosting habitat but may be used by foraging individuals.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	SSC	Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	**High.** The study area contains suitable habitat for this species. The nearest CNDDB occurrence was recorded in 2015, approximately 5.5 miles to the southeast of the study area.

Appendix J (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Mammals (cont.)				
Onychomys torridus ramona	southern grasshopper mouse	SSC	Sandy valley floors within desert scrub habitat with low to moderate shrub cover and friable soils, but also found in coastal scrub and chaparral habitats.	**Low.** The study area contains suitable habitat for this species. However, the nearest CNDDB occurrence was recorded in 1930, approximately 7 miles to the northeast of the study area within the Angeles National Forest.

[1] Sensitive species reported within the Mint Canyon quadrangle on CNDDB.

[2] Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; CT = Candidate Threated; FP = Fully Protected; SSC = State Species of Special Concern.

[3] Potential to Occur is assessed as follows. **None**: Species is so limited to a particular habitat that it cannot disperse across unsuitable habitat (*e.g.* aquatic organisms), and habitat suitable for its survival does not occur on the study area; **Not Expected**: Species moves freely and might disperse through or across the study area, but suitable habitat for residence or breeding does not occur on the study area (includes species recorded during surveys but only as transients); **Low**: Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **Moderate**: Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **High**: Suitable habitat of sufficient extent for residence or breeding is present on the study area and the species has been recorded recently on or near the study area, but was not observed during surveys for the current project. However, focused/protocol surveys are not required or have not been completed; **Presumed Present**: The species was observed during biological surveys for the current project and is assumed to occupy the study area; **Presumed Absent**: Suitable habitat is present on the study area but focused/protocol surveys for the species were negative.

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Appendix D:
Cultural Resources Report

HELIX Environmental Planning

Bouquet Canyon Road Project

Cultural Resources Survey and Assessment

May 2019 | IPQ-25

Stacie Wilson
Senior Archaeologist

Prepared for:

Integral Communities
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Bouquet Canyon Road Project

Cultural Resources Survey and Assessment

Prepared for:

Integral Communities
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

May 2019 | IPQ-25

National Archaeological Database Information

Authors:	Stacie Wilson, M.S., RPA and Catherine A. Wright
Firm:	HELIX Environmental Planning, Inc.
Client/Project:	Integral Communities / Bouquet Canyon Road Project
Report Date:	May 2019
Report Title:	Cultural Resources Survey and Assessment for the Bouquet Canyon Road Project, Santa Clarita, Los Angeles County, California
Type of Study:	Cultural Resources Survey and Assessment
New Sites:	P-19-004853; P-19-004854 (CA-LAN-4854); P-19-192514; P-19-004855
Updated Sites:	None
USGS Quad:	Mint Canyon 7.5-minute Quadrangle
Acreage:	Approximately 94 acres
Key Words:	Los Angeles County; Township 4 North, Range 15 West; Santa Clarita; Bouquet Canyon; Bouquet Canyon Road; New Era School; Fernandeño Tataviam Band of Mission Indians; P-19-004853, P-19-004854 (CA-LAN-4854), P-19-192514, and P-19-004855; Martin Ruiz Adobe.

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AMSL	above mean sea level
APN	Assessor's Parcel Number
BLM	Bureau of Land Management
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
CRM	Cultural Resources Management
GLO	General Land Office
HELIX	Helix Environmental Planning, Inc.
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
SCCIC	South Central Coastal Information Center
SLF	Sacred Lands File
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
USGS	U.S. Geological Survey

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EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) was contracted by Integral Communities to provide cultural resources services for the Bouquet Canyon Road Project (project) in the City of Santa Clarita, Los Angeles County, California. The project is a proposed private residential development. A cultural resources study including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a pedestrian survey was conducted for the project. This report details the methods and results of the cultural resources study and has been prepared to comply with City of Santa Clarita guidelines and the California Environmental Quality Act (CEQA). The cultural resources study area for the project has been defined as the area proposed for residential development and additional areas of off-site improvements, totaling approximately 94 acres.

The records search conducted at the South Central Coastal Information Center (SCCIC) indicated that 24 previous cultural resources studies have been conducted within a one-mile radius of the project, none of which occurred within the project site. The records search results also indicated that nine cultural resources have been previously recorded within a one-mile radius of project; however, no cultural resources have been recorded within the study area prior to this survey.

The field investigations included intensive pedestrian survey of the study area by a team of HELIX archaeologists and a Native American observer from the Fernandeño Tatavium Band of Mission Indians. The survey resulted in the identification of four newly recorded historic-period cultural resources: P-19-004853, P-19-004854 (CA-LAN-4854), P-19-192514, and P-19-004855. The resources include a concrete foundation that may represent the remnants the “New Era School” from the early twentieth century (P-19-004853), the remnants of a ranch dating to the early- to mid-twentieth century (CA-LAN-4854), a residential structure constructed between 1952 and 1959 (P-19-192514), and the remnants of a residence from the turn of the twentieth century (P-19-004855). None of the resources meet the criteria for inclusion in the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP).

Based on the results of the current study, no historical resources will be affected by the project and no impacts to cultural resources are anticipated. However, during the course of the cultural resources study, research indicated a family burial plot may be located within the project site. While no physical evidence of the burials was observed during the pedestrian survey other than a fenced-off area, it is recommended that additional studies be undertaken to locate the potential burial sites through the use of cadaver dogs or other non-invasive means.

Much of the original ground surface could not be observed due to thick vegetation and alluvial and flood plain fluvial soils covering most of the ground surface. Furthermore, the project is located in a culturally sensitive landscape with numerous important resources in the vicinity. Based on the potential for buried cultural resources in the flood plain area of the study area, it is recommended that an archaeological and Native American monitoring program be implemented for the initial ground disturbing activities in areas underlain by young alluvium and colluvium.

The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the grading contractor and the presence of archaeological and Native American monitors during initial ground disturbing activities. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the monitors will coordinate with the applicant and City of Santa Clarita staff to develop and implement appropriate mitigation measures.

1.0 INTRODUCTION

HELIX Environmental Planning, Inc. (HELIX) was contracted by Integral Communities to provide cultural resources services for the Bouquet Canyon Road Project (project) in the City of Santa Clarita, Los Angeles County, California. The project is a proposed private residential development. A cultural resources study including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a pedestrian survey was conducted for the project. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA), as well as City of Santa Clarita guidelines.

1.1 PROJECT LOCATION AND DESCRIPTION

The project is located in the Saugus Community of the City of Santa Clarita (City) in west-central Los Angeles County, within Section 6 of Township 4 North, Range 15 West, on the U.S. Geological Survey (USGS) 7.5-minute Mint Canyon topographic quadrangle (Figure 1 and 2, *Regional Location* and *USGS Topography*, respectively). The project site is generally located 6.9 miles to the east of Interstate (I-) 5 and 3.8 miles to the northwest of California State Route (SR) 14 and is bordered by Bouquet Canyon Road along the northern and western project boundaries (Figure 3, *Aerial Photograph*). The proposed development is located within Assessor's Parcel Numbers (APNs) 2812-008-003, 2812-008-013, 2812-008-022, and 2812-008-031.

The project site is presently vacant and includes a significant ridgeline along the western portion of the project boundary; the northern portion of the site is bisected by a seasonal wash. The proposed development will consist of a gated residential community comprising several neighborhoods and four distinct for-sale residential property types including: detached single-family lots, auto court detached bungalow units, attached row townhomes, and attached motor court condominiums (Figure 4, *Proposed Project*). The site plan anticipates grading on the ridgeline to provide the cut and fill required to establish the new Bouquet Canyon Road alignment, proposed along the east border of the project site. The new road alignment would be constructed approximately 1,500 feet north of Plum Canyon Road on the south end to a connection point at the existing Bouquet Canyon Road approximately 700 feet south of Shadow Valley Lane. Roadway improvements would include widened lane and shoulder areas, a full-width bridge over the seasonal creek, pedestrian walkways, and a multi-use trail accessible to both existing neighborhoods and the proposed development. The project would also require some slope stabilization and the implementation of fuel modification zones, and a flood control channel would be constructed to south of existing Bouquet Canyon Creek. Downstream flows within Bouquet Canyon Creek would feed into the flood control channel, which would ultimately tie into the existing concrete-lined portion of Bouquet Canyon Creek to the northwest of the proposed project.

1.2 STUDY AREA

The cultural resources study area for the project totals approximately 94 acres, consisting of the four project-owned parcels (APNs 2812-008-003, 2812-008-013, 2812-008-022, and 2812-008-031), and areas of proposed off-site improvements (see Figures 3 and 4). Additionally, APN 2812-008-002, which is a private in-holding with an occupied residence situated within the western portion of the project, is included in the cultural resources study area, as it will potentially be part of the project.

1.3 REGULATORY FRAMEWORK

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance (Office of Historic Preservation 1995). Significant resources are those resources which have been found eligible to the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP), as applicable.

CEQA, Public Resources Code (PCR) 21084.1, and California Code of Regulations (CCR) Title 14 Section 15064.5, address determining the significance of impacts to archaeological and historic resources and discuss significant cultural resources as "historical resources," which are defined as:

- resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the CRHR (14 CCR Section 15064.5[a][1])
- resource(s) either listed in the NRHP or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PCR, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2])
- resources determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR Section 15064.5[a][3])

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

A. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

B. It is associated with the lives of persons important to local, California, or national history;

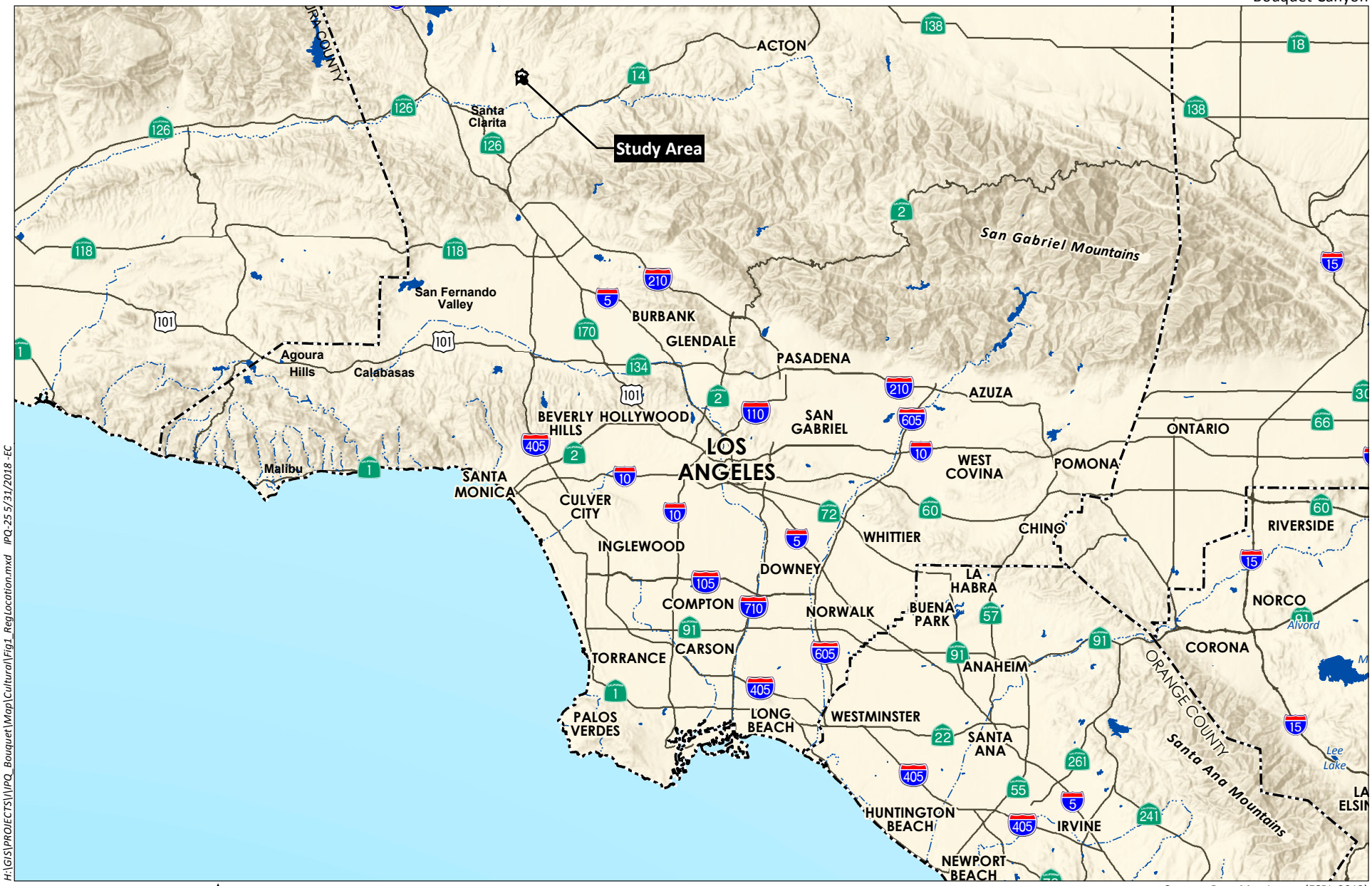
C. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values;

D. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the NRHP or CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the specific criteria under which it is proposed for nomination. Under Section 106 of the National Historic Preservation Act (NHPA),

Bouquet Canyon



H:\GIS\PROJECTS\VIPQ_Bouquet\Map\Cultural\Fig1_RegLocation.mxd IPQ-25 5/31/2018 -EC

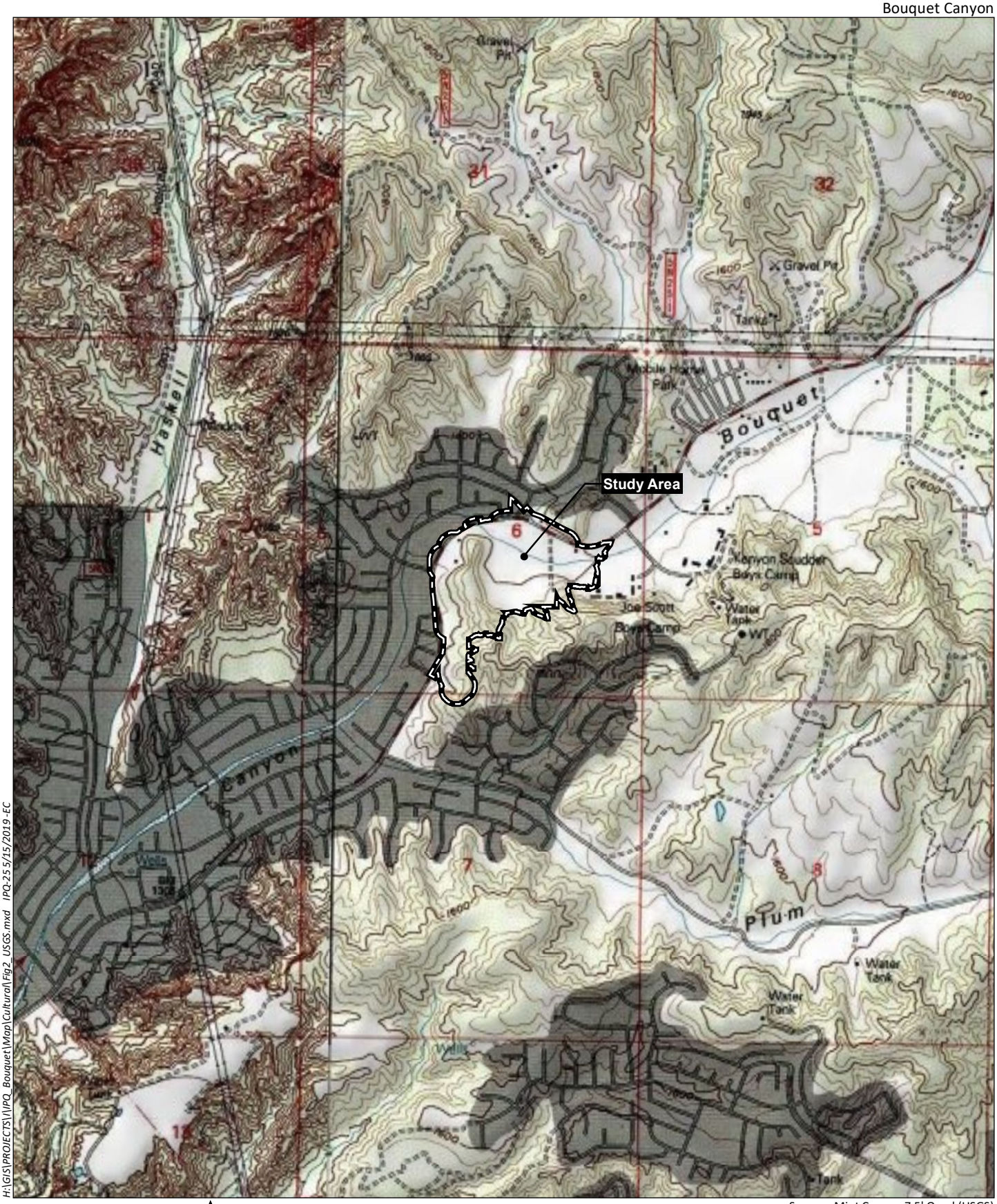
0 10 Miles

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



H:\GIS\PROJECTS\IVPQ_Bouquet\Map\Cultural\Fig2_USGS.mxd IPQ-25 5/15/2019 -EC

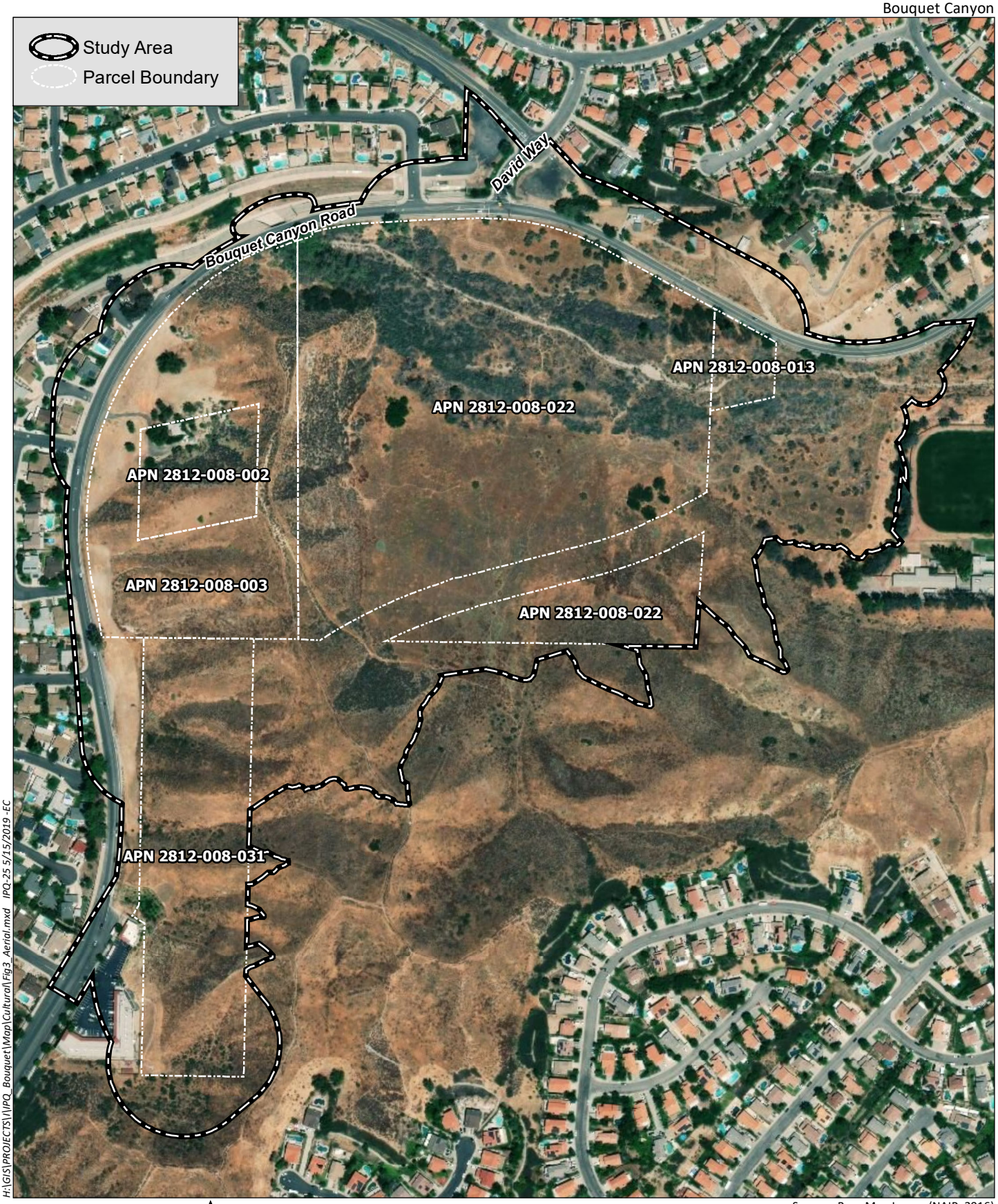
0 2,000 Feet

Source: Mint Canyon 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



H:\GIS\PROJECTS\V\VPQ_Bouquet\Map\Cultural\Fig3_Aerial.mxd IPQ-25 5/15/2019 -EC

0 400 Feet

Source: Base Map Layers (NAIP, 2016)

HELIX Environmental Planning

Aerial Photograph

Figure 3

BOUQUET CANYON

SANTA CLARITA | CALIFORNIA

DATE 01 | 29 | 19

INTEGRAL Communities
A DIVERSIFIED REAL ESTATE COMPANY

1"=100'- 0" SCALE
0 100 200
NORTH

CONCEPTUAL SITE PLAN

H:\GIS\PROJECTS\VPQ_Bouquet\Map\BTR\Fig4_PropProject.indd_ FEI-01 3/25/19 -EC

Source:Urban Arena, 2019

HELIX Environmental Planning

Proposed Project

Figure 4

actions that alter any of the characteristics that qualify a property for eligibility for listing in the NRHP "in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR 800.5[a]) constitute an adverse effect to the historic property.

1.3.1 City of Santa Clarita General Plan and Municipal Code

The Conservation and Open Space Element of the General Plan for the City of Santa Clarita (2011) includes the following goals, objectives, and policies related to cultural resources that would be applicable to the proposed project:

Goal CO 5: Protection of historical and culturally significant resources that contribute to community identity and a sense of history.

Objective CO 5.1: Protect sites identified as having local, state, or national significance as a cultural or historical resource.

Policy CO 5.1.1: For sites identified on the Cultural and Historical Resources Map (Exhibit CO-6), review appropriate documentation prior to issuance of any permits for grading, demolition, alteration, and/or new development, to avoid significant adverse impacts. Such documentation may include cultural resource reports, environmental impact reports, or other information as determined to be adequate by the reviewing authority.

Policy CO 5.1.2: Review any proposed alterations to cultural and historic sites identified in Table CO-1 or other sites which are so designated, based on the guidelines contained in the Secretary of the Interior's Standards for the Treatment of Properties (Title 36, Code of Federal Regulations, Chapter 1, Part 68, also known as 36 CFR 68), or other adopted City guidelines.

Policy CO 5.1.3: As new information about other potentially significant historic and cultural sites becomes available, update the Cultural and Historical Resources Inventory and apply appropriate measures to all identified sites to protect their historical and cultural integrity.

Objective CO 5.3: Encourage conservation and preservation of Native American cultural places, including prehistoric, archaeological, cultural, spiritual, and ceremonial sites on both public and private lands, throughout all stages of the planning and development process.

Policy CO 5.3.1: For any proposed general plan amendment, specific plan, or specific plan amendment, notify and consult with any California Native American tribes on the contact list maintained by the California Native American Heritage Commission that have traditional lands located within the City's jurisdiction, regarding any potential impacts to Native American resources from the proposed action, pursuant to State guidelines.

Policy CO 5.3.2: For any proposed development project that may have a potential impact on Native American cultural resources, provide notification to California Native American tribes on the contact list maintained by the Native American Heritage

Commission that have traditional lands within the City's jurisdiction, and consider the input received prior to a discretionary decision.

Policy CO 5.3.3: Review and consider a cultural resources study for any new grading or development in areas identified as having a high potential for Native American resources, and incorporate recommendations into the project approval as appropriate to mitigate impacts to cultural resources.

Chapter 17.64 of the City of Santa Clarita's Municipal Code, Historic Preservation, seeks preservation and protection of "public and private historic, cultural, and natural resources which are of special historic or aesthetic character or interest, or relocating such resources where necessary for their preservation and for their use, education, and view by the general public" (City of Santa Clarita 2018).

A building, structure, or object may be designated by the Planning Commission as a historic resource if it possesses sufficient character-defining features and integrity, and meets at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the historical, archaeological, cultural, social, economic, aesthetic, engineering, or architectural development of the City, State or Nation; or

2. is associated with persons significant in the history of the City, State or Nation; or

3. embodies distinctive characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or

4. has a unique location, singular physical characteristic(s), or is a landscape, view or vista representing an established and familiar visual feature of a neighborhood, community, or the City; or

5. has yielded, or has the potential to yield, information important to the history or prehistory of the City, State, or Nation.

1.3.2 Native American Heritage Values

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study site has been to evaluate the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Potentially relevant to prehistoric archaeological sites is the category termed Traditional Cultural Properties (TCP) in discussions of cultural resource management (CRM) performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Cultural resources can include TCPs, such as gathering areas, landmarks, and ethnographic locations, in addition to archaeological districts. Generally, a TCP

may consist of a single site, or group of associated archaeological sites (district or traditional cultural landscape), or an area of cultural/ethnographic importance.

In California, the Traditional Tribal Cultural Places Bill of 2004 requires local governments to consult with Native American Tribes during the project planning process, specifically before adopting or amending a General Plan or a Specific Plan, or when designating land as open space for protecting Native American cultural places. The intent of this legislation is to encourage consultation and assist in the preservation of Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance. State Assembly Bill (AB) 52, effective July 1, 2015, introduced the Tribal Cultural Resource (TCR) as a class of cultural resource and additional considerations relating to Native American consultation into CEQA. As a general concept, a TCR is similar to the federally defined TCP; however, it incorporates consideration of local and state significance and required mitigation under CEQA. A TCR may be considered significant if included in a local or state register of historical resources; or determined by the lead agency to be significant pursuant to criteria set forth in PCR §5024.1; or is a geographically defined cultural landscape that meets one or more of these criteria; or is a historical resource described in PCR §21084.1, a unique archaeological resource described in PCR §21083.2; or is a non-unique archaeological resource if it conforms with the above criteria.

1.4 PROJECT PERSONNEL

Stacie Wilson, M.S., RPA served as principal investigator and primary author of this report. Catherine A. Wright, B.A. is the coauthor of this technical report. Mary Robbins-Wade, M.A., RPA provided overall project management support and senior technical review. Julie Roy, B.A. archaeological field director, led the field survey and served as report contributor. Ms. Roy was assisted by Mary Villalobos, B.A. and Dominique Diaz de Leon, B.A. in completing the survey. Lorence Orosco (Native American monitor) from Fernandeño Tatavium Band of Mission Indians participated in the pedestrian survey. Resumes for key project personnel are presented in Appendix A.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The project site is located in the foothills of the Sierra Pelona Mountains. The topography in the southern and western portions of the study area is characterized by steep hillsides, while the northern portion of the study area is within the primarily flat valley floor of Bouquet Canyon (Figure 2). Elevations on the project site range from a low of approximately 1,365 feet above mean sea level (AMSL) near the northwest corner of the project site to a high of approximately 1,720 feet AMSL along the ridgeline on the southern edge of the site.

Bouquet Canyon wash is an ephemeral drainage that runs from east to west near the northern boundary of the project site (Figure 3). The headwaters of the Bouquet Canyon drainage originate approximately 10 miles northeast of the project site in the Sierra Pelona Mountains. The wash is a tributary to the Santa Clara River, which ultimately drains into the Pacific Ocean approximately 35 miles to the southwest of the project.

The hills within the central area of the project area are underlain by the Castaic Formation, which contains marine limestone and shale with interbedded pebbly sandstone dating to the late Miocene.

The hillsides in the southern area of the project site are underlain by the Saugus Formation, which is comprised of sandstone, pebble conglomerate, and sandy siltstone dating from the Pleistocene to the late Pliocene. The remainder of the study area within the valley floor of Bouquet Canyon contains young alluvium and colluvium from the Holocene and late Pleistocene (Campbell et al. 2014).

Seven soil types are mapped within the project site, including Hanford sandy loam, Metz loamy sand, Mocho loam, Ojai loam, Saugus loam, Sorrento loam, and Yolo loam. Ojai loam and Saugus loam are located within the hills situated in the western and southern areas of the project. Ojai loam is found on terraces and derives from alluvium from sedimentary rock. Saugus soils are on dissected terraces and foothills and derives from weakly consolidated alluvium. Yolo loam, Mocho loam, and Metz sandy loam are the predominate soils within the remainder of the project site. Yolo loam and Mocho loam are found on alluvial fans, and like Ojai loam, derive from sedimentary rock. Metz loamy sand, found within the Bouquet Canyon wash, is alluvium deriving from sedimentary material and is located in alluvial fans and in flood plains. Small areas of Hanford sandy loam are present along the western border of the project site, along Bouquet Canyon Road. This soil is alluvium derived from granite. Lastly, an area of Sorrento loam, which is alluvium derived from mixed parent materials, is found in the flat area in the northwestern portion of the project (Web Soil Survey 2018).

The steep hills throughout the southern and western portions of the project site are predominantly characterized by upland sage scrub, while the flatter portions of the site within the valley floor are dominated by non-native grassland. Characteristic species of the upland sage scrub in the study area include California buckwheat, California sagebrush, and black sage (*Salvia melifera*). In addition, biological surveys conducted by HELIX identified several other vegetation communities within the project site, including big sagebrush scrub, cottonwood riparian stand, mule fat scrub, southern willow scrub, and chamise chaparral (HELIX 2018). Many of the plant species naturally occurring in the study area and vicinity are known to have been used by native populations for food, medicine, tools, ceremonial. and other uses (Bean and Smith 1978). Many of the animal species living within these communities (such as antelope, rabbits, deer, and small mammals) would have been used by native inhabitants as well (King and Blackburn 1978).

2.2 CULTURAL SETTING

2.2.1 Prehistoric Period

The project is located within an area in which scant research for early human occupation has been conducted; however, it is possible to infer the prehistory of the area by consulting that of neighboring regions in Southern California. The most widely recognized timeline for the prehistory of Southern California was proposed by Wallace (1955) and divides the region's prehistory into four main periods, or "horizons": Early, Milling Stone (Archaic Period), Intermediate, and Late horizons. The best example of Early Prehistoric Period archaeological evidence for Native Americans in Southern California is in the San Dieguito complex of San Diego County, dating to over 9,000 years ago (Warren 1967; Warren et al. 2004). The San Dieguito Tradition is thought by most researchers to have an emphasis on big game hunting and coastal resources (Warren 1967). The material culture of the San Dieguito complex consists primarily of scrapers, scraper planes, choppers, large blades, and large projectile points. In some areas of California, the Early Prehistoric Period is often referred to as the Paleo-Indian period and is associated with the last Ice Age occurring during the Terminal Pleistocene (pre-10,000 years ago) and the Early Holocene, beginning circa 10,000 years ago (Erlandson 1994, 1997).

The Millingstone Horizon, or Archaic Period, dates from 7,000-8,600 to 1,300-3,000 years ago and is generally consistent with the Oak Grove complex of Santa Barbara, the Topanga complex of Los Angeles, and the La Jolla complex of San Diego (Van Horn 1980; Warren et al. 2004). The Millingstone Horizon is also referred to as the Encinitas Tradition (Warren 1968). The Encinitas tradition is generally "recognized by millingstone assemblages in shell middens, often near sloughs and lagoons" (Moratto 1984:147). Basin metates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials are also characteristic of the tradition. The Millingstone Horizon gains its name from the dominance of milling stones within site assemblages which were used for processing hard seeds.

Dates for the Intermediate Horizon vary by locale but can generally be dated to between 4,000 years ago and AD 500 (Elsasser 1978). The Intermediate Horizon is consistent with the Hunting Culture of Santa Barbara County and is characterized by the presence of Pinto style points, named after the Pinto Basin in Riverside County, an increased use of the mortar and pestle, and the consumption of fleshier foods such as acorns as opposed to small, hard seeds (Stickel 1978). This change resulted in the adoption of a more sedentary lifestyle as seen in the presence of seasonal campsites (Owen 1995). The Intermediate Horizon "is well represented in the Upper Santa Clara River Valley region, with major site complexes located along the Piru and Castaic drainage systems, Escondido Canyon and at Vasquez Rocks" (City of Santa Clarita 2003:4.12-1).

The Late Prehistoric period in southern California is characterized by the incursion of Uto-Aztecan - speaking people who occupied large portions of the Great Basin and an area stretching from southern Arizona and northwest and central Mexico into Nevada, Oregon, and Idaho (Miller 1986). The expansion of the Takic group into southern California is unrefined, but several scholars have hypothesized as to when and how the so-called "Uto-Aztecan wedge" occurred. Sutton (2009) argues that the Takic group expanded into southern California from the San Joaquin Valley about 3,500 years ago, while Golla (2007) suggests an expansion of Uto-Aztecan speakers into southern California at approximately 2,000 years ago. While the exact chronology of Takic-speaking groups' immigration to southern California remains uncertain, the beginning of the Late Prehistoric Period is marked by evidence of a number of new tool technologies and subsistence shifts in the archaeological record and is characterized by higher population densities and intensification of social, political, and technological systems. The changes include the production of pottery and the use of the bow and arrow for hunting instead of atlatl and dart, a reduction of shellfish gathering in some areas, and an increase in the storage of foodstuffs such as acorns, and new traits such as the cremation of the dead (Gallegos 2002; McDonald and Eighmey 2004). The Late Horizon inhabitants of the project vicinity are believed to be the same as those recorded ethnohistorically, namely the Tataviam, who occupied the Santa Clara River Valley beginning in approximately AD 450 (City of Santa Clarita 2011).

2.2.2 Ethnohistory

The Santa Clarita Basin is the core territory of the Tatavium people, a distinct linguistic and ethnic group first identified by the Spanish missionary Francisco Garces in 1776 (King and Blackburn 1978). Their territory spanned from the Piru Creek on the west to the Liebre Mountains and the southern edge of Antelope Valley on the north; the eastern extent of their territory has yet to be refined (King and Blackburn 1978; Johnson and Earle 1990; Szabolcsi 2000).

The Tatavium people were hunter-gatherers whose economy focused on small game as well as seeds, berries, and native plants such as yucca. Campsites and habitation areas were focused on permanent reliable water sources in the region, including streams, rivers and lakes (Fernandeño Tatavium Band of

Mission Indians 2018; King and Blackburn 1978). Several major Tatavium villages were located in areas surrounding present-day Newhall Ranch. One of which, *Chaguayanga (Tsawayng*), was situated within the Santa Clara River Valley at the confluence with Castaic Creek (Fernandeño Tatavium Band of Mission Indians 2018). Other village sites with known names are were located in the San Francisquito, Piru, Camulos, Castaic Reservoir, Piru Creek, and Elizabeth Lake areas (City of Santa Clarita 2011; Johnson and Earle 1990).

Prior to missionization, bands (or tribelets or villages) were formed into single patrilineal lineages. Each lineage included a headman or leader, assistants, and ceremonial leaders. These lineages held land, engaged in collective social and economic activities, and intermarried with other lineage groups, thereby forming a highly complex network of social, religious, and economic ties (Fernandeño Tatavium Band of Mission Indians 2018). Considerable evidence exists that widespread regional trade occurred between the Tatavium and surrounding cultural groups, including the Chumash, Serrano/Vanyume, Tongva, and western Mojave Desert cultural groups, including the Chemehuevi and Mohave. As a result of early Spanish contact, much of the specific culture history of the Tatavium people was lost, but their material culture was similar to surrounding groups and included elaborate basketry; ornamental items made from bone, shell, and stone; projectile points and tools made from lithic materials; and shell inlaid wooden vessels (ESA 2008). They resided in a Ki'j, made of bundles of grass tied to a framework of sycamore poles that formed a permanent family dwelling (Fernandeño Tatavium Band of Mission Indians 2018). Unlike some of their neighbors, the Tatavium people favored cremation of the dead rather than interment.

2.2.3 Historical Background

2.2.3.1 Spanish Period

The Spanish Period in southern California commenced in 1769, when Spain escalated its involvement in California from exploration to colonization. In this year, Gaspar de Portolá led an expedition traveling north through the San Fernando Valley, seeking suitable locations to establish military presidios and religious missions up the coast (Breschini 2000). The expedition camped near a watering place that later became the site of the Mission San Fernando Rey de España (which translates to Saint Ferdinand, King of Spain), named after King Ferdinand III of Castile. They named the river cutting through the area the little Santa Clara after Saint Clare.

Mission San Fernando Rey de España was founded in September 1797, the seventeenth of 21 missions located in California. Built between 1769 and 1821, the missions stood, literally and figuratively, as symbols of Spanish colonialism, importing new systems of labor, demographics, settlement, and economies to the area. Missions were typically established within or near permanent indigenous habitation sites in order to access the most potential converts to Christianity. Ten children were baptized on the property the same day that the Mission San Fernando Rey de España was founded (Johnson 1997). By October of 1797, 13 adults had been baptized, and one marriage had taken place (Englehardt 1897). By 1810, the majority of the Tataviam people had been baptized at the mission, with Native American converts at the Mission numbering more than 900 (Johnson 1997; King and Blackburn 1978).

Agriculture and animal husbandry were the main pursuits of the missions, and subsequently ranchos (estancias) and mission outposts called asistencias were established in the outlying areas of the missions, increasing the amount of Spanish contact in each region. In 1804, Mission San Fernando Rey

de España established a rancho, Estancia de San Francisco Xavier, within the Santa Clara River Valley, which had been increasingly used for cattle ranching. The Estancia was constructed at the location of the Tataviam village of *Chaguayanga (Tsawayng*), at the confluence of the Santa Clara River and Castaic Creek.

While the Tatavium people living at Mission San Fernando Rey de España appear to have adapted to mission life, accepted Christianity, and gained new work skills, they also retained their traditional language along with aspects of their traditional social, economic, religious, and political lives (Fernandeño Tatavium Band of Mission Indians 2018).

2.2.3.2 Mexican Period

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the distribution of land were also retained for a time. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos.

Mexican Lieutenant Antonio del Valle was assigned to inventory Mission San Fernando Rey de España's lands and was subsequently granted the Estancia de San Francisco Xavier ("Rancho San Francisco") in 1839 by Governor Juan Bautista Alvarado, who was a friend of del Valle's. The rancho, located approximately 1.5 miles south of the project, totaled 48,000 acres surrounding the Santa Clara River Valley. Antonio del Valle passed away a couple of years later, and the ownership of the rancho transferred to his son, Ygnacio del Valle, who was the mayor of Los Angeles (City of Santa Clarita 2011). In 1846, Governor Pío Pico took ownership of the Mission San Fernando Rey de España, making the mission his headquarters and naming the lands surrounding it Rancho Ex-Mission San Fernando. However, shortly after, Pico traveled to Baja California during the Mexican–American War (1846-1848) and did not return to California until after the Treaty of Guadalupe Hidalgo was signed, which ceded California to the United States. During this time, John C. Fremont and his Buckskin Battalion traveled through Santa Clara River Valley before crossing into the San Fernando Valley and accepting the surrender of California from General Andres Pico (City of Santa Clarita 2010).

2.2.3.3 American Period

The United States' acquisition of California substantially increased the growth of the population in the region. The California gold rush, the end of the Civil War, and the passage of the Homestead Act implementing the United States' manifest destiny to occupy and exploit the North American continent brought many people to California. In 1842, the initial discovery of gold in California was made in Placerita Canyon, approximately five miles south of the project (City of Santa Clarita 2011). The promise of gold brought prospectors to the area, but gold production had dwindled towards the later part of the decade. However, the discovery of gold spurred other mining endeavors throughout the Santa Clarita Valley, including copper, silver, and other minerals. In addition, oil seeps were discovered in 1865 in Pico Canyon, located approximately 7 miles southwest of the project. This led to the area becoming the first oil drilling location in southern California (City of Santa Clarita 2011).

While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who

had been granted ownership of ranchos by the Mexican government. The Land Act of 1851 established a board of commissioners to review land grant claims, and in 1852, Ygnacio del Valle and Jacopa Feliz, Antonio del Valle's widow, both petitioned for title of the Rancho San Francisco (Perkins 1957). Although Antonio del Valle had transferred ownership to his estranged son, Ygnacio, from his first marriage, Jacopa Feliz filed several cases with the Probate Court of Los Angeles County to settle del Valle's estate and divide the rancho up among his children with Feliz. The probate petition filed by Feliz was granted, and the rancho was divided between del Valle heirs. In 1875, a land patent was issued to Jacoba Feliz and six of del Valle's children, including Ygnacio. The accompanying Plat, surveyed in 1874 and approved in 1875, indicated Bouquet Canyon, located at the northeast edge of the rancho, as the "Dry Bed of Arroyo Cañada Los Muertos" (U.S. Surveyor General 1875). This same name for the canyon, Cañada de Los Muertos, is given on the survey plats undertaken for Township 4 North and Range 15 and 16 West in 1877.

The population growth of California during the initial years of the American period precipitated the need for mail and freight travel. Beginning in the 1850s several local stage coaches were established, such as the line begun in 1852 by Phineas Banning running between Los Angeles and San Diego (Stott 1968). In 1854, Banning cut a 30-foot swath through what is now known as Newhall Pass to allow the first stagecoach to pass through the area for travel to Fort Tejon (City of Santa Clarita 2010). In 1857, John Butterfield was awarded a $600,000 per year, six-year contract to transport mail twice a week between St. Louis, Missouri, and San Francisco (Helmich 2008). Butterfield used the same pass through the mountains between 1858 and 1861. Several stations cropped up along the stagecoach route, including Lyons Station, located on the north side of pass (City of Santa Clarita 2010). In the early 1860s, the Los Angeles County Board of Supervisors contracted with General Edward F. Beale, who cut a 90-foot-deep passageway through the pass and for over 20 years, collected a toll to use the pass (City of Santa Clarita 2010).

While stagecoaches were successful at transporting gold, people, and mail, the need for a railroad to California was imperative. In the 1850s, surveys were initiated by the federal government to determine a railroad route to the Pacific coast (Lech 2004). Although the first transcontinental railroad was completed in 1869 to northern California, in the 1870s the Southern Pacific Railroad Company, incorporated in 1865 and consolidated in 1870, began to construct a southern route that would traverse the state (Fickewirth 1992). In the late 1850s and early 1860s, Jacopa Feliz and her husband, José Salazár, had run into financial difficulties, and their portion of the Rancho San Francisco came under the ownership of William Wolfskill, who transferred it to Ygnacio del Valle in a payoff for the Salazár's debts (Santa Clarita Valley Historical Society 2018a). However, del Valle ran into his own financial troubles, and the land grant was again sold, passing through several owners until purchased by Henry Mayo Newhall in 1875. Soon after gaining ownership of the Rancho San Francisco, Newhall sold a portion of the land for one dollar to the Southern Pacific Railroad Company for their transcontinental railroad, which was constructed through the area in 1876 (Ballard n.d.; City of Santa Clarita 2017a). The Newhall Depot was established near Bouquet Junction, approximately 3.3 miles south of the project, at the confluence of Bouquet Canyon and the Santa Clara River Valley.

That same year, in 1876, an older oil well, Pico No. 4, within the Santa Susana Mountains was deepened, which produced a "gusher" and began pumping up to 30 barrels a day (City of Santa Clarita 2011; Perkins 1962). Pico No. 4 became the oldest oil well in the world before being taken out of service in 1990. The Newhall oil field and the Pioneer Oil Refinery (which was the predecessor of Chevron Oil) were established within Newhall's land holdings and were the center of an oil boom in the area

(City of Santa Clarita 2017a). The Pioneer Oil Refinery was the earliest productive refinery in the region and remained in operation until the late 1880s.

With the rail line connecting Santa Clarita to Los Angeles and San Francisco running across Newhall Ranch, the new town that the Southern Pacific Railroad Company named after him, Newhall, sprung up over the following years, and Santa Clarita became a travel hub. After Newhall's death in 1882, his heirs formed The Newhall Land and Farming Company (City of Santa Clarita 2017b).

The early twentieth century witnessed the rise of the movie industry in the region, with Santa Clarita serving as the backdrop for westerns starring Tom Mix, Harry Carey, William S. Hart, and John Wayne (Reynolds 1998). Unfortunately, Santa Clarita was also the site of one of the worst civil engineering disasters in California to date. In March of 1928, the William Mulholland-built St. Francis Dam collapsed, sending flood waters all the way to the Pacific Ocean and killing upwards of 600 people (City of Santa Clarita 2011; Pollack 2010). Later, in the early 1930s, an earthen dam was built in Bouquet Canyon by the Los Angeles Department of Water and Power (City of Santa Clarita 2011).

In the 1950s, Atholl McBean, Newhall's grandson-in-law shifted the focus of Newhall Ranch from open land to master-planned communities, following the trend in southern California in the post-World War II era (City of Santa Clarita 2017b).

2.2.3.4 Bouquet Canyon and the Project Site

While Bouquet Canyon was undoubtedly utilized by prehistoric populations and the Spanish, little information is available about the canyon until the Mexican period, when it became known as Cañada de Los Muertos (Deadman Canyon). During the time of Ygnacio del Valle's occupation of the Rancho San Francisco during the Mexican Period a band of horses was stolen, and the bandits were pursued into the canyon "from which at least one rustler had not emerged alive" (Parks 1929). On the 1875 survey plat for the Rancho San Francisco, the 1877 survey plats for Township 4 North and Range 15 and 16 West, and the 1900 Fernando 1:62,500-scale topographic map, the name Cañada de Los Muertos and Deadman Canyon are indicated. However, by the 1930 reprint of the San Fernando topographic map, the name is changed to Bouquet Canyon, reflecting the ranching efforts of Francisco Chari.

François "Francisco" Chari was a Frenchman who established a ranch in the canyon in the mid- or late-1800s. One account of Chari states that he purchased several hundred acres of the Rancho San Francisco from Jacopa Feliz and José Salazár in 1843 and established the El Rancho del Buque (Ship Ranch) to settle down "to raise cattle and children" (Reynolds 1998). Another account, as told to Marion Parks by José Jesus Lopez of Rancho El Tejon in the early 1900s, has Francisco Chari encouraged by Chico López to purchase land in the canyon in the 1870s (Parks 1929). López owned a ranch in the region and used the canyon to pasture his horses; after the passage of the Homestead Act in 1862 and the construction of the Southern Pacific Railroad through the area in the 1876, he told Chari to "take up some land before the settlers come in and claim everything" (Parks 1929: 196). Before settling in California, Chari had been a sailor, and told "endless yarns of adventure on the seas, and tales of his buque, or ship" around the campfire and eventually the canyon became known as El Rancho del Buque (Parks 1929:196). Later, buque was mis-interpreted, or mis-spelled, by mapmakers and changed to "Bouquet" on maps of the region.

Chico López's ranch was located on the north end of Bouquet Canyon, in Leona Valley; the southern end, near where the San Francisquito and Bouquet canyons empty into the Santa Clara River Valley, was

settled by Martin Ruiz. Ruiz and his sons established several adobe homes in the vicinity, possibly including the "Martin Ruiz Adobe" that was previously located on the project site to the east of what is now Bouquet Canyon Road (Park 1929). However, it is unclear when, and by whom, this adobe was originally built. Images of the adobe on file with the Los Angeles Public Library state in the description that the adobe was built in 1865, and a 1929 newspaper article indicates that in approximately 1870 the adobe was nearly new (The San Fernando [Calif.] Sun, 1929). However, A.B. Perkins and Jerry Reynolds, historians associated with the Santa Clarita Valley Historical Society, claim that the adobe was constructed by Chari in 1845 and was later sold to Ruiz (Santa Clarita Valley Historical Society 2018b). A newspaper article from 1990 written by Reynolds asserts that Chari contracted Ruiz to construct the adobe in 1845, with Ruiz acquiring the property a few years later (Reynolds 1990). This same article also claims that 'Deadman Canyon' was a briefly used name for the canyon and came from 1898, when a Dave Chormicle was hung from an oak tree for stealing cattle or horses; however, as indicated on the survey plats from 1875 and 1877, the reference to the canyon as Cañada de Los Muertos was much earlier than this.

In 1874, Ruiz sold the adobe and part of his ranch lands to Gianbubista ("Gianbatista" or "Juan Batista") Suraco, an Italian who had come to California in 1859 at the age of 20 (Parks 1929). For approximately 40 years, Suraco lived and raised a family in the adobe with his wife, Dominga Garla (Santa Clarita Valley Historical Society 2018b). In 1882, Suraco was granted a land patent under the Homestead Act for 160 acres that included the adobe. Suraco passed away in 1915 and, according to his death certificate, was buried in Bouquet Canyon (Santa Clarita Valley Historical Society 2018c).

One of Suraco's sons, Joseph Antonio "Tony" Suraco, married in 1917 and also lived and raised a family on the adobe property (Santa Clarita Valley Historical Society 2018b). However, the adobe had fallen into disrepair, with winter floods weakening its walls, and Tony Suraco and his family resided in a wood frame house located to the north of the adobe (Parks 1929; Santa Clarita Valley Historical Society 2018b). The house may have been constructed as early as the 1890s (Reynolds 1990).

The Suraco ranch was purchased by the Benz family in the early 1940s; Charles Benz, who was born in 1935, grew up on the alfalfa and hog farm and later married Barbara A. Suraco, Tony Suraco's granddaughter. According to Benz, what was left of the adobe ruins was graded in the 1940s, and the wood frame house to the north was demolished in approximately 1990 after that portion of the ranch had been sold (Santa Clarita Valley Historical Society 2018c).

3.0 ARCHIVAL RESEARCH AND CONTACT PROGRAM

3.1 RECORDS SEARCH

HELIX staff conducted a record search of the California Historical Resources Information System (CHRIS) at the South Central Coastal Information Center (SCCIC) at California State University Fullerton on June 12, 2018. The records search covered a one-mile radius around the project and included archaeological and historical resources, locations and citations for previous cultural resources studies, and a review of the state Office of Historic Preservation (OHP) historic properties directory. The records search summary and map are included as Appendix B (Confidential Appendices, bound separately).

3.1.1 Previous Surveys

The records search results identified 24 previous cultural resource studies completed within the records search limits, none of which occurred within the project site (Table 1, *Previous Studies within One Mile of the Project Area*). Twenty-one of the studies consisted of cultural resource inventories and/or assessments. The remaining three studies include a cultural resources evaluation for the City of Santa Clarita's Circulation Element Environmental Impact Report, a reconnaissance survey, and one report for which no information was available.

Table 1
PREVIOUS STUDIES WITHIN ONE MILE OF THE PROJECT AREA

Report No. (LA-00000)	Report Title	Author, Date
00016	Assessment of the Archaeological Impact by the Development of Tract 27973	Gates, 1973
00615	Cultural Resources Investigation Re: Tentative Minor Land Division Map Number 11518	Robinson, 1979
00904	Report title not available	Not available
00932	Cultural Resource Survey Tentative Parcel Map Number 00000, Saugus, Los Angeles County, California	Tartaglia, 1980
01114	Assessment of the Archaeological Impact by the Proposed Development of Tract No. 32615 in Valencia, California	Toren, 1976
01141	An Evaluation of the Potential Impacts to Cultural Resources Located on Portions of Tentative Parcel Map 14813 Bouquet Canyon, Los Angeles, California	Wlodarski, 1982
02170	Cultural Resource Survey for Tentative Tract Map No. 49688, 38 Acres in Santa Clarita, California	Norwood, 1990
02500	Cultural Resources Archaeological Survey Wildwood Hills II Project Tentative Tract 46183	Tartaglia, 1991
02590	An Archaeological Reconnaissance of Tract 31803, a 220 Acre Parcel in Plum Canyon, Los Angeles County	Rasson and Greenwood, 1992
02775	Cultural Resources Survey and Impact Assessment for Vesting Tentative Tract Map No. 47657, Haskell Canyon, Los Angeles County, California	Singer et al., 1992
03690	Cultural Resources Evaluation City of Santa Clarita Circulation Element EIR	Wlodarski, 1997
04057	Cultural Resources Re-assessment of the Bouquet Canyon Project, County of Los Angeles (VT 52192, 52193, and 52194)	Allen and Wakerfield, 1998
04104	Cultural Resource Evaluation of the LADWP Power Plant 1-Olive Line 1 Transmission Line Maintenance Project Los Angeles County, California	Macko, 1993
04843	Addendum to Cultural Resources Re-assessment of the Bouquet Canyon Project, County of Los Angeles (VTT 52192, 52193, and 52194)	Allen, 1999
05137	Archaeological and Paleontological Resources Assessment of the Camp Joseph Scott Project	Applied Earth Works, Inc., 1999
08993	SCE Tehachapi Renewable Transmission Project, Shoofly Corridor, Santa Clarita Area, Los Angeles County, California	Schmidt, 2007

Table 1 (cont.)
PREVIOUS STUDIES WITHIN ONE MILE OF THE PROJECT AREA

Report No. (LA-00000)	Report Title	Author, Date
09769	Supplemental Cultural Resources Assessment, Segment 1, Section 1, Tehachapi Renewable Transmission Project, Variance for Wire Stringing Location near Construction Tower 25, Los Angeles County, California	Gust and Glover, 2008
09770	Supplemental Archaeological and Paleontological Assessment, Segment 1, Section 1, Tehachapi Renewable Transmission Project, Variance for Increased Disturbance Space at WSS 13, Los Angeles County, California	Harper and Gust, 2009
09920	Results of the Class III Cultural Resources Investigation for the Southern California Edison Tehachapi Renewable Transmission Project (TRTP) Segment 1, Angeles National Forest and Adjacent Lands, Los Angeles County, California, ARR No. 05-01-01079	Schmidt, Schmidt, and Romani, 2008
10205	Archaeological Investigation for Meadow Peak Project, Vesting Tentative Tract Map 47760 with Final Report	Messick, 2003
10210	Cultural Resources Survey Report for Antelope-Pardee 500-KV Transmission Project	Ahmet and Mason, 2006
10559	Archaeological Impact Analysis: Vesting Tentative Tract Map 43589, 7.5 Acres in Bouquet Canyon Area, Los Angeles County	Schmidt, 2000
11002	Archaeological Survey Report for the Southern California Edison Company's Proposed Replacement of One Deteriorated Pole Structure on the Bouquet 16kV Distribution Circuit (TD517593), Santa Clarita, Los Angeles County, California	Switalski, 2011
12691	Class III Inventory / Phase I Archaeological Survey of the Fire Station 128 Alternate Site, Los Angeles County, California	W&S Consultants, 2010

3.1.2 Previously Recorded Resources

The SCCIC has a record of nine previously recorded cultural resources within a one-mile radius of the project, none of which have been recorded within the study area (Table 2, *Previously Recorded Resources within One Mile of the Project Area*). In general, the cultural resources recorded within the records search limits are historic; they include trash deposits and refuse scatters, structural features, a transmission line, a ranch site, and the remains of a historic hog farm. One small prehistoric rock shelter was also documented within the one-mile search radius.

Table 2
PREVIOUSLY RECORDED RESOURCES WITHIN ONE MILE OF THE PROJECT AREA

Resource Number (P-19-#)	Resource Number (CA-LAN-#)	Description	Recorder, Date
000295	295	Prehistoric site. Small rock shelter.	Riddell, 1963
002040	2040H	Historic site. Trash deposit.	Rasson and LeCount, 1992
002041	2041H	Historic site. Scatter of domestic refuse.	Rasson and LeCount, 1992
002042	2042H	Historic site. Cluster of historic features comprising a dwelling with associated activity and trash disposal areas.	Rasson and LeCount, 1992
002043	2043H	Historic site. Three concrete slabs, two concrete footings, and other features in a light density scatter of modern artifacts.	Rasson and LeCount, 1992
002044	2044H	Historic site. Scatter of domestic refuse.	Rasson and LeCount, 1992
002132	2132H	Historic structure. LADWP Transmission Line constructed in 1917 as an adjunct to the Los Angeles Aqueduct.	Dice, 2014; Simon, 2010; Tsunoda, 2007; Whitley, 2004; Macko, 1993; Cole et al., 1992
003534	3534H	Historic site. Ranch site that consists of two small earthen dams, two cattle watering tanks, and a barn foundation.	Ahmet, 2006
004720	4720H	Historic site. Two loci, both of which represent the last physical vestiges of the Agajanian Hog Farm.	Dice, 2014

3.2 OTHER ARCHIVAL RESEARCH

Various archival sources were also consulted, including historic topographic maps, aerial imagery (NETR Online 2018), and the Bureau of Land Management (BLM) General Land Office (GLO) Records. Historic aerials from 1947, 1952, 1959, 1969, 1974, and 1977 were reviewed (NETR Online 2018). Plat maps reviewed included the 1875 survey plat for the Rancho San Francisco and the 1877 survey plats for Township 4 North and Range 15 and 16 West. Topographic maps reviewed included the 1900 Fernando (1:62,500); the 1900 (1930 reprint), 1940, and 1945 San Fernando (1:62,500); the 1932 and 1946 edition of the Humphreys (1:24,000); and the 1960 and 1974 Mint Canyon (1:24,000) topographic maps. The purpose of this research was to identify historic structures and land use in the area.

On the 1900 Fernando and San Fernando maps, one structure appears within the northwestern portion of the study area on the east side of Bouquet Canyon Road, which is shown as a curving road around the northern bend of the project site. On the 1900 Fernando map, the canyon is labeled as Cañada de Los Muertos; by the 1930 reprint of the topographic map, the name has been changed to Bouquet Canyon.

On the 1932 Humphreys map, one structure is shown in the approximate location as the structure indicated on the 1900 and 1930 maps (Figure 5, *1932 Humphreys (1:24,000) Topographic Map*). In addition, a dirt road or driveway is shown extending south from Bouquet Canyon Road in the northern portion of the project site, leading to a structure situated against the hillside, south of Bouquet Canyon wash. The “New Era School” is also shown to the east of the driveway, along Bouquet Canyon Road. Bouquet Canyon Road itself travels in straight, zig-zagged lines along the bend of the canyon around the northern bend of the project. However, by the 1946 reprint of the same map, noted as revised in 1942, the road has been rerouted to curve around the bend in its current, smoother route. Additionally, two

structures are seen in the northwestern portion of the project site, and the school is no longer present. The 1940 and 1945 San Fernando maps, which are indicated as revised from aerial photographs taken between 1938 and 1940, show both the smoother, modern route of the road and "light-duty" remnants of the older, curvier route of the road in the northwestern portion of the study area. On this map, three structures are indicated in the northwestern area of the project site, as well as two structures against the hillside in the north-central area of the project, and a structure where the New Era School was indicated on the 1932 map. No changes are shown on the 1945 version of the San Fernando map.

On the 1960 Mint Canyon map, two structures are indicated in the northwestern portion of the project site, one structure at the end of driveway along the hillside, and one structure in the approximate location that the New Era School was indicated on the 1932 map. In addition, the Joe Scott and Kenyon Scudder boys' camps are present and named as such to the east of the project, south of Bouquet Canyon Road.

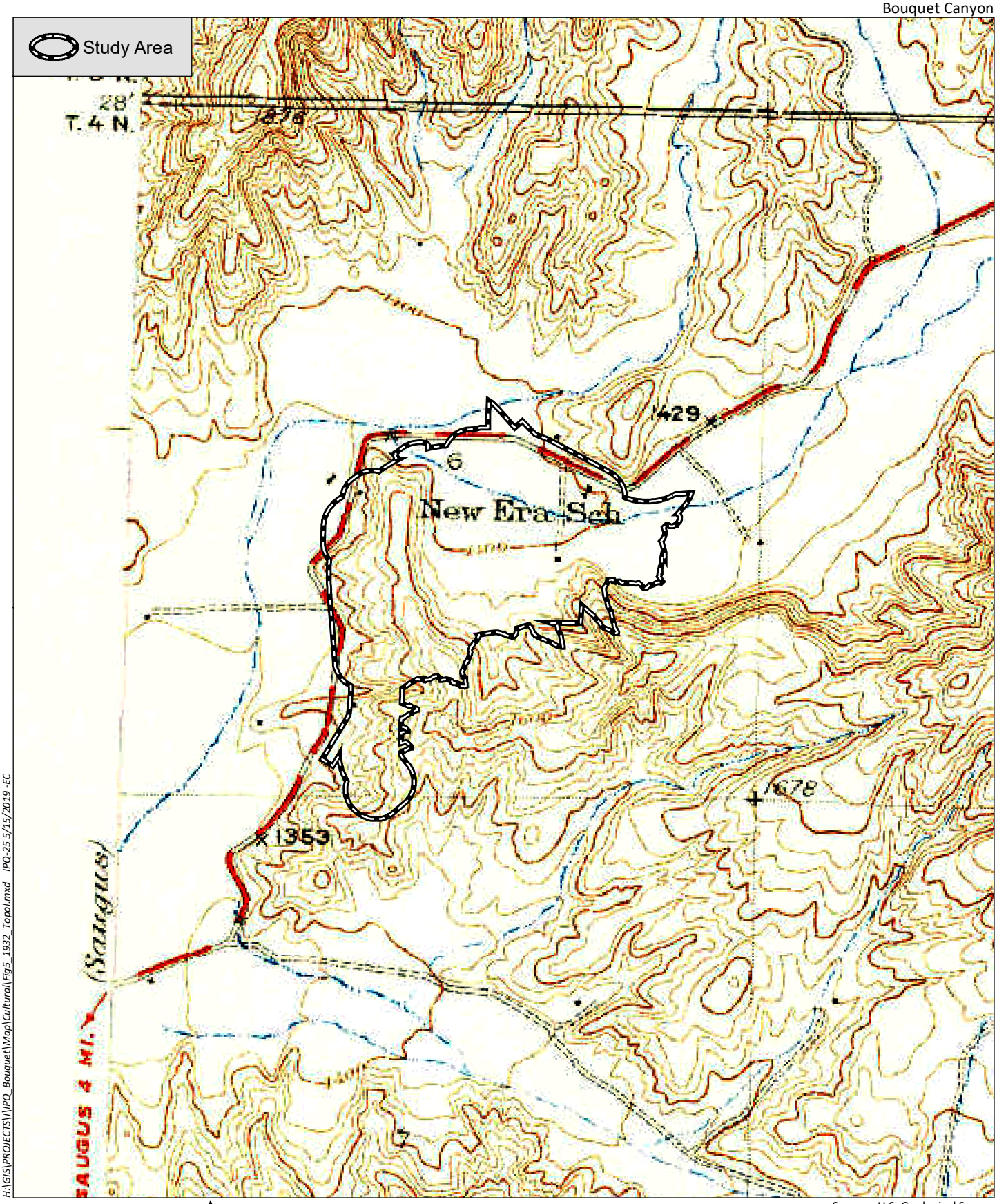
The 1947 aerial photo of the study area shows two structures in the northwestern portion of the project site, two structures and agricultural activities in the central area of the northern portion of the project site, and what appears to potentially be a structure in the approximate location of the New Era school (Figure 6, *1947 Aerial Photograph*). On the 1952 and 1959 aerials all of the structures are still observed. Sometime between the 1959 and 1969 aerials the Bouquet Canyon wash flood plain expanded south into the ranch property, and the school is no longer visible. Furthermore, the original ranch house is no longer standing, and another building has been built just north of where it stood. By the 1974 aerial, only one structure remains in the northwestern portion of the project site, while the ranch appears to have been abandoned.

A land patent search of the BLM's GLO Records was undertaken to identify the historic ownership of the study area. The land owner, the year of the patent, the authority the patent was granted under, and a legal description of the patent location are provided in Table 3, *Land Patents within or Adjacent to the project Area*, and shown on Figure 7, *Land Patents Granted Within or Adjacent to the Project Area*. The earliest patent issued for the study area was to Gianbatista "Juan Batista" Suraco, in 1882, which covered the northwestern portion of the project site. Of the 10 patents, nine were granted under the Homestead Act between 1882 and 1922. Interestingly, several of the legal descriptions for the patents overlap, indicating patents granted to different landowners for the same lands.

Table 3
LAND PATENTS WITHIN OR ADJACENT TO THE PROJECT AREA

Name(s) On Patent	Year Issued	Authority	Aliquots	Section (T4N/R15W)
Gianbatista Suraco	1882	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	N½SW¼ SE¼NW¼ SW¼NE¼	6
Jose Maria Orduno	1893	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	Lot/Trct 4 (of NWNW) Lot/Trct 5 (of SWNW)	6
William H. Delano	1895	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	NE¼SE¼ SE¼NE¼ Lot/Trct 1 (NE¼NE¼)	6
Lewis A. Gremminger	1897	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	S½SW¼ W½SE¼	6

Bouquet Canyon



H:\GIS\PROJECTS\IVPQ_Bouquet\Map\Cultural\Fig5_1932_Topo.mxd IPQ-25 5/15/2019 -EC

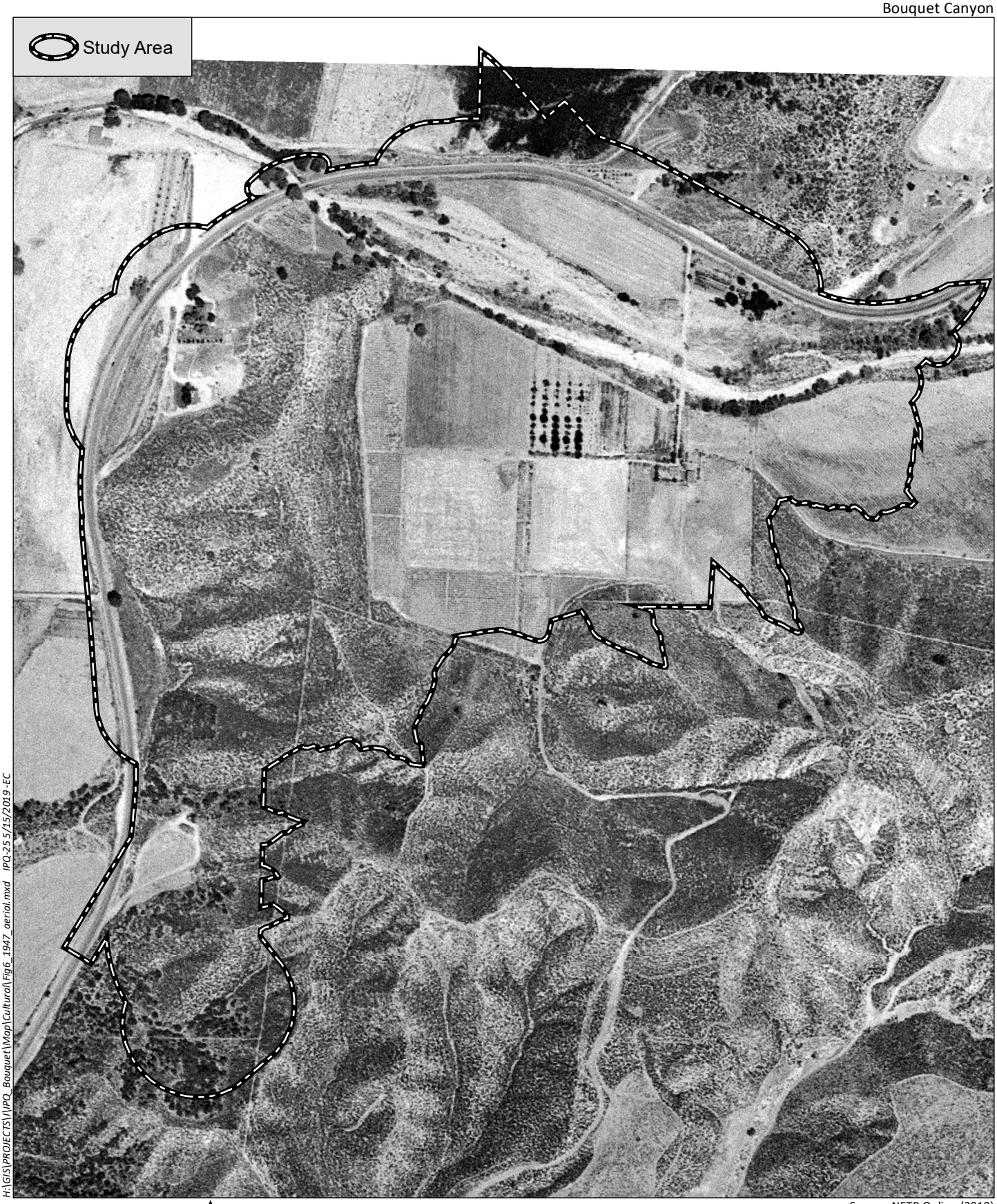
0 1,000 Feet

Source: U.S. Geological Survey

HELIX Environmental Planning

1932 Humphreys (1:24,000) Topographic Map

Figure 4

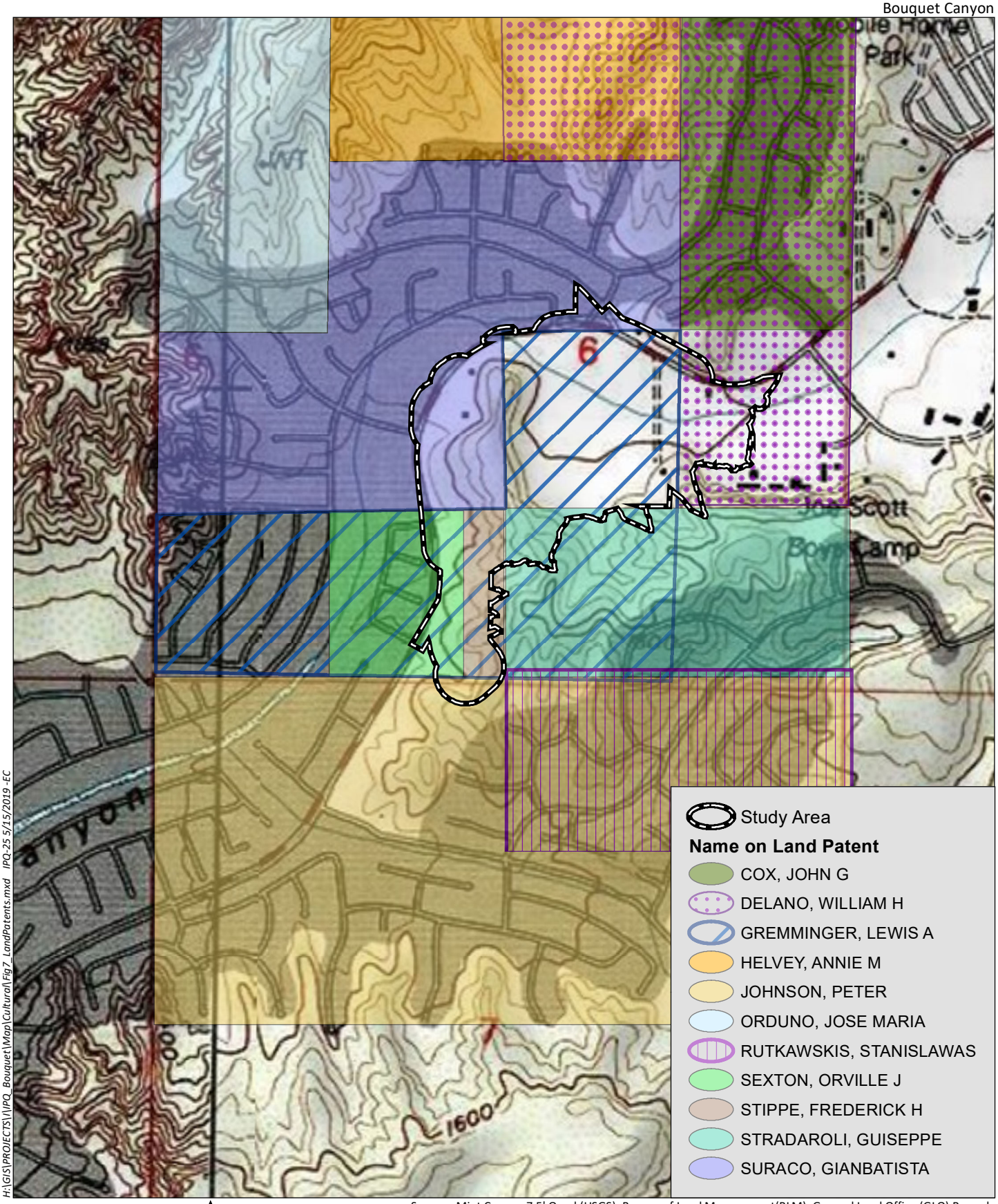


Source: NETR Online (2018)

HELIX Environmental Planning

1947 Aerial Photograph

Figure 6



H:\GIS\PROJECTS\IVPQ_Bouquet\Map\Cultural\Fig7_LandPatents.mxd IPQ-25 5/15/2019 -EC

0 1,000 Feet

Source: Mint Canyon 7.5' Quad (USGS); Bureau of Land Management(BLM), General Land Office (GLO) Records

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Land Patents Granted Within or Adjacent to Project Area

Figure 7

Table 3 (cont.)
LAND PATENTS WITHIN OR ADJACENT TO THE PROJECT AREA

Name(s) On Patent	Year Issued	Authority	Aliquots	Section (T4N/R15W)
Peter Johnson	1899	April 24, 1820: Sale-Cash Entry (3 Stat. 566)	N½ W½, SW¼	7
John G. Cox	1915	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	SE¼NE¼ Lot/Trct 1 (NE¼NE¼)	6
Orville J. Sexton	1916	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	W½SE¼SW¼ W½E½SE¼SW¼	6
Annie M. Helvey	1919	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	Lot/Trct 2 (NW¼NE¼) Lot/Trct 3 (NE¼NW¼)	6
Frederick H. Stippe	1919	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	E½E½SE¼SW¼	6
Guiseppe Stradaroli	1922	May 20, 1862: Homestead EntryOriginal (12 Stat. 392)	S½SE¼	6

3.3 NATIVE AMERICAN CONTACT PROGRAM

HELIX contacted the Native American Heritage Commission (NAHC) on May 31, 2018 for a Sacred Lands File (SLF) search and list of Native American contacts for the project area. The NAHC indicated in a response dated June 22, 2018 that the search of the SLF was completed for the project area with negative results. Letters were sent on June 29, 2018 to Native American representatives and interested parties identified by the NAHC. No responses have been received to date. If any responses are received, they will be forwarded to City of Santa Clarita staff.

A Native American monitor from the Fernandeño Tatavium Band of Mission Indians accompanied the survey crew during the fieldwork, and upon coordination for the survey, Jairo Avila responded in an email dated June 22, 2018 that their records show the presence of a Tataviam Village and Native burial site less than four miles west of the project.

Native American correspondence is included as Appendix C (Confidential Appendices, bound separately).

4.0 METHODS

4.1 SURVEY METHODOLOGY

A pedestrian survey of the study area was conducted on June 29, 2018 by HELIX Field Director Julie Roy, staff archaeologists Mary Villalobos and Dominique Diaz de Leon, and Native American monitor Lorence Orosco from the Fernandeño Tatavium Band of Mission Indians. A reconnaissance survey of additional off-site improvement areas by Senior Archaeologist Stacie Wilson and Dominique Diaz de Leon occurred on November 14, 2018. During the pedestrian survey, the study area was walked in transects spaced approximately 10 meters (m) apart where possible. Slopes greater than 25 degrees were visually assessed but were not surveyed. The top of the ridgeline on the west side of the project site was surveyed; however, the ridgeline was very narrow and systematic transects were not feasible.

Visibility was poor throughout the study area (Plates 1 and 2). Flood plain sands have been deposited over the entirety of the valley area within the project site, and the ridgelines and slopes are highly eroded (Plate 3). The vegetation within the study area includes mainly non-native plants, including foxtail, mustard grass, Arundo, eucalyptus, black locus, and juniper trees, with native vegetation consisting of sagebrush, buckwheat, elderberry plants, and sparse white and black sage on the slopes, with mule fat scrub along the creek. Visibility throughout the survey area was less than 10 percent in the low areas and down to zero percent along the creek banks. The slopes allowed for up to 30 to 40 percent visibility; however, most of the slopes were not surveyed due to the slope angles being more than 25 degrees.

Plate 1. Overview of the project site, view to the northwest.

Plate 2. Overview of the project site, view to the west.

Plate 3. Overview of the ridgeline within the project site, view to the west.

4.1.1 Documentation

Cultural resources identified during the survey were recorded on appropriate Department of Parks and Recreation (DPR) 523 forms. All completed DPR site forms were submitted to the SCCIC.

5.0 RESULTS

A total of four cultural resources were documented within the study area and include the remnants of an early twentieth century school house (P-19-004853), a ranch complex and associated features (P-19-004854 [CA-LAN-4854]), a residential structure from the 1950s (P-19-192514), and the remnants of a residence from the turn of the twentieth century (P-19-004855) (Table 4, *Cultural Resources Identified Within the Project Area*). Maps of the cultural resource locations are provided on Figure 8, *Cultural Resources Identified within Project Area*. Copies of the DPR forms for the cultural resources are included in Appendix D (Confidential Appendices, bound separately).

Table 4
CULTURAL RESOURCES IDENTIFIED WITHIN THE PROJECT AREA

Resource Number	Age	Description	Status
P-19-004853	Historic	Concrete foundation; possibly the remnants of the New Era School	Newly documented
P-19-004854 (CA-LAN-4854)	Historic	Ranch complex remnants	Newly documented
P-19-192514	Historic	Residential structure (circa 1950s)	Newly documented
P-19-004855	Historic	Remnants of a residential structure	Newly documented

5.1 SITE DESCRIPTIONS

5.1.1 P-19-004853

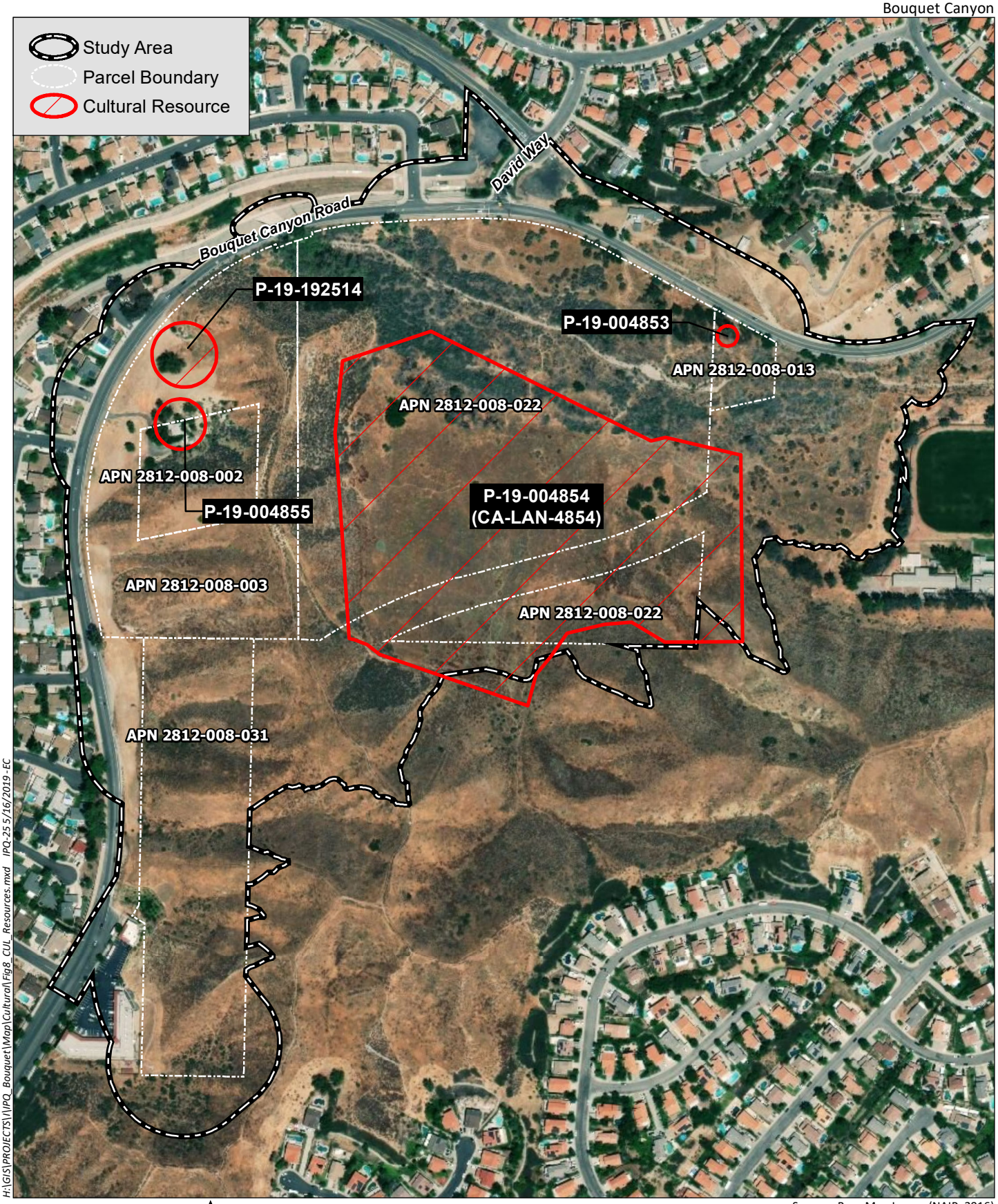
Resource P-19-004853 consists of a concrete foundation (Plate 4). The foundation is in the flood plain of the Bouquet Canyon wash, approximately 55 feet south of Bouquet Canyon Road, and has been highly disturbed. The foundation is a small rectangular raised pad with two steps on the west side. However, more steps may be buried under the fluvial soils. The foundation has been cracked and is uplifted in numerous places by tree roots. Two 4-by-4-inch post holes are located on each end of the pad on the side with the steps. The foundation is in the approximate location of the "New Era School," observed on the 1932 Humphreys (1:24,000) topographic map, and may represent the remnants of the school structure (see Figure 5).

Plate 4. Overview of P-19-004853, view to the east.

A local resident, Minnie Ann Helvey Murphy, who was born in 1918 in Bouquet Canyon, said in a televised interview in approximately 2004 that her father had built the school in 1924 (Santa Clarita Valley Historical Society 2018d). However, an Automobile Club of Southern California map from 1922 shows a school in this location, indicating an earlier date for the school's construction. The school may have been in use until at least the 1940s (Santa Clarita Valley Historical Society 2018d). Charles Benz, who was born in 1935 and whose family purchased the Suraco ranch in the early 1940s, noted in an interview that he attended "primary school at a schoolhouse around the bend to the north, up Bouquet Canyon Road" (Santa Clarita Valley Historical Society 2018b).

5.1.2 P-19-004854 (CA-LAN-4854)

Resource P-19-004854 (CA-LAN-4854) includes the remnants of a ranch complex from the early- to mid-twentieth century located in the central area of the study area, south of Bouquet Canyon wash. Five features were observed and include two small concrete foundations or pads, a corrugated piece of sheet metal that was possibly used as a burn bin, various segments of a cast iron water conveyance pipeline, and a rock wall situated along the base of the east facing hill with the remnants of a barbed wire fence below the rock wall (Plates 5 and 6).



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Source: Base Map Layers (NAIP, 2016)

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Cultural Resources Identified within Project Area

Figure 8

Plate 5. Overview of P-19-004854 (CA-LAN-4854) (concrete pad), view to the east.

Plate 6. Overview of P-19-004854 (CA-LAN-4854) (rock wall), view to the north.

No structures are shown in the location of ranch on the 1900 Fernando (1:62,500) and 1900 (and 1930 reprint) San Fernando topographic maps, the earliest maps available for the study area. On the 1932 Humphreys (1:24,000) map, a dirt road extending south from Bouquet Canyon Road is shown leading to a single structure at the approximate location of the concrete pads (Figure 5). On the 1940 and 1945 San Fernando (1:62,500) maps, two structures are shown. On the 1947 aerial, the entire area within the valley is cleared and cultivated, and two structures can be seen (Figure 6). The structures are still

present on the 1959 aerial photograph but appear to have been demolished by 1969 (NETR Online 2018).

The ranch complex is situated within the northeast ¼ of the southeast ¼ of section 6 of Township 4 North and Range 15 West; the land patent for this area was granted to Lewis A. Gremminger in 1897, under the authority of the Homestead Act of 1862. The initials "B.R." are etched into the concrete of one of the concrete pads, and the initials "RB", "BLB", and "JAB" are etched into the side wall of the other concrete pad (Plate 7). Unfortunately, none of these initials could be correlated to Gremminger, suggesting that the ranch was developed by a different owner later in the twentieth century.

Plate 7. Overview of initials etched into side wall of a concrete pad, view to the north.

5.1.3 P-19-192514

Resource P-19-192514 is an occupied residence located at 28402 Bouquet Canyon Road, within APN 2812-008-002 (Plate 8). According to a review of historic aerial photographs, the house appears to have been constructed between 1952 and 1959. The house has asphalt roofing shingles, exterior stucco walls, and louvered windows (Plate 9). There is a detached two-car garage that also has a stucco exterior.

Plate 8. Overview of P-19-192514 (28402 Bouquet Canyon Road), view to the west.

Plate 9. Front view of P-19-192514 (28402 Bouquet Canyon Road), view to the northeast.

5.1.4 P-19-004855

Site P-19-004855 is the remnants of a residence from the turn of the twentieth century. On the 1900 Fernando (1:62,500) and the 1900 (1930 reprint) San Fernando (1:62,500) topographic maps, a single structure is shown in this approximate location. On the 1932 Humphreys (1:24,000) map, one structure is shown in the same general location (Figure 5). However, by the 1946 reprint of the same map, noted

as revised in 1942, two structures are seen, the northern of which is in the location of P-19-004855. The structure continues to appear on all of the available years (1960, 1974, 1988, and 1995) of the Mint Canyon (1:24,000) topographic map.

On the 1947 aerial photograph, two residential areas can be observed (Figure 6). It appears that the northern residence is the structure observed on the historic topographic maps. According to Charles Benz, a wood frame house was constructed around the turn of the twentieth century by the Suraco family to the north of the Martin Ruiz Adobe, which by that time had fallen into disrepair (Santa Clarita Valley Historical Society 2018b). Benz also indicated that the house was demolished in approximately 1990; however, although difficult to ascertain for certain, a review of aerial imagery suggests the house may have been demolished as early as the 1970s. Between 1969 and 1974 the area appears to have become overgrown with vegetation with little evidence of a structure remaining (NETR Online 2018).

During the current survey, several glass and ceramic sherds were observed in the area surrounding an existing pepper tree, which appears to be the approximate location where the house once stood (Plate 10).

Plate 10. Overview of P-19-004855, view to the north.

5.2 OTHER LOCATIONS OF ACTIVITIES, OBJECTS, OR INFRASTRUCTURE

Numerous points of interest were noted during the survey, including two abandoned vehicles within Bouquet Canyon wash; an old truck bed or cart, also within the wash; and a telephone pole with a 1941 date nail located on top of the ridgeline. above P-19-192514. These features were not documented as cultural resources, nor recorded on DPR 523 forms.

Based on archival research conducted for the study, it appears that the location of the residential house situated within the private in-holding in the western portion of the study area (P-19-192514), was previously occupied by the "Martin Ruiz Adobe" (Plate 11). The adobe was built in the mid-nineteenth century and had fallen into disrepair by the turn of the twentieth century. At that time, the Suraco family, who had occupied the adobe, built a new wood frame house located to the north of the adobe (Site P-19-004855). According to a 1920s account documenting the 'Extant Historic Adobe Houses of Los Angeles County,' the road through Bouquet Canyon ran "between the two houses, scarcely ten feet from the back door of the adobe" (Parks 1929:198). As shown on the 1932 Humphreys (1:24,000) topographic map, the road at that time curved around the bend in the canyon closer to the hillside than its current alignment (Figure 5). As discussed in Section 3.2 above, by the 1946 reprint of the same map (noted as revised in 1942), the road has been rerouted to curve around the bend in its current, smoother route located further to the west. Both road alignments are shown on the 1940 and 1945 San Fernando maps, which is indicated as revised from aerial photographs taken between 1938 and 1940. On the 1947 aerial photograph, two residential areas can be observed, as well as both the modern and old road alignments (Figure 6). It is probable that the southern residence observed in this area on the 1947 aerial was the adobe, as it would have been located immediately adjacent to the old road alignment, the remnants of which can be observed on the aerial photograph (Figure 6). This location is the same location of the existing structure from the 1950s is currently situates (within the private in-holding). According to Charles Benz, what remained of the adobe was graded in the 1940s (Santa Clarita Valley Historical Society 2018c); however, on the 1952 aerial photograph, the area of the adobe appears to be in a similar condition as in 1947 (NETR Online 2018). But by 1959, as seen on the aerial photography, the area looks newly graded, and a newly constructed house (P-19-192514) is observed in the same location, as well as a newly graded dirt driveway extending west to Bouquet Canyon Road. As such, it appears that the current existing residential structure, located within the private in-holding, is in the same location as where the adobe once stood, and that what would have remained of the adobe was destroyed by the construction of the house in the 1950s.

Plate 11. Martin Ruiz Adobe (Parks 1929:199).

One other potential point of interest was identified during the course of the cultural resources study: the burial locations of "Juan Batista" Suraco, his wife, and several others, including, potentially, three members of the Chakanaka family. Suraco passed away in 1915, and according to his death certificate,

was buried in Bouquet Canyon (Santa Clarita Valley Historical Society 2018c). The City's 2009 Historic Preservation Survey & Planning Analysis states the following:

> A family graveyard was established on a low hill to the South where Juan, his wife Dominga Carla and others, including some Indians, were buried; five additional graves of Typhoid victims are located on a ridge to the east; the adobe home is gone, marked by a large palm tree; the Suraco cemetery is marked by 4 oleanders (once there were six) and the headstones are no longer extant; shallow depressions suggest perhaps six burials with two or three outside of the oleander line; no evidence of the ridgetop interments has been found (Historic Resources Group 2009).

No reference is given for the information provided in the Historic Preservation Survey & Planning Analysis; as such, it is unclear where this information was obtained. According to the Santa Clarita Valley Historical Society:

> In a 2010 interview conducted at the site, [Charles] Benz pointed out the location of a family graveyard on a low hill behind the former adobe where some six members of the Suraco and Chacanaca families (and perhaps other Californios) are buried. He remembered that the graves were marked with crude wooden stakes when he was a child, and he was not allowed to play there (Santa Clarita Valley Historical Society 2018b).

In the Fernandeño Tatavium Band of Mission Indians' 2009 Federal Recognition Petition, a footnote with the text of an interview with Ernest Ortega quotes him as saying "I remember my father taking us to Newhall and that's where a lot of Indians, the relatives came from—the (Chakanakas?) and the Cooks—they were from that area" (Fernandeño Tatavium Band of Mission Indians 2009).

Further documentation regarding the burials is provided in Appendix E (Confidential Appendices, bound separately). During the survey, an area enclosed by a wire fence with one live oleander bush and one dead bush on the south fence line was observed (Figure 9, *Potential Burial Site Location* [Confidential, bound separately]). This area, which is situated to the northeast of the existing structure within the private in-holding, may be the location of the purported graves.

6.0 SUMMARY AND MANAGEMENT RECOMMENDATIONS

A study was undertaken to identify cultural resources that are present in the Bouquet Canyon Road Project study area, and to determine the effects of the project on historical resources. The cultural resources survey documented a total of four newly identified cultural resources within the study area, all relating to twentieth century activities; no prehistoric cultural resources were identified.

6.1 ELIGIBILITY RECOMMENDATIONS

The cultural resources located within the study area include a foundation, possibly representing the remnants of the New Era School; the remains of a ranch complex and associated features; a mid-twentieth century residential structure, and the remnants of a structure seen on historic topographic maps. Potential project effects to the cultural resources and their eligibility recommendations are

discussed below and provided in Table 5, *NRHP*/CRHR *Eligibility Recommendations of Cultural Resources*. In summary, the four documented cultural resources within the study area do not meet the criteria for listing in the CRHR or the NRHP, and thus are not considered historical resources, per CEQA.

Table 5
NRHP/CRHR ELIGIBILITY RECOMMENDATIONS OF CULTURAL RESOURCES

Resource Number	Description	NRHP/CRHP Eligibility Recommendation	Potential Effects
P-19-004853	Concrete foundation; possibly the remnants of the New Era School	Not eligible	No effect
P-19-004854 (CA-LAN-4854)	Ranch complex and associated features	Not eligible	No effect
P-19-192514	Residential structure (circa 1950s)	Not eligible	No effect
P-19-004855	Remnants of a residential structure	Not eligible	No effect

6.1.1 P-19-004853

P-19-004853 consists of a concrete foundation that may represent the remnants of the New Era School, as observed on the 1932 Humphreys (1:24,000) topographic map. P-19-004853 does not appear to meet the criteria for inclusion in the NRHP or CRHR, as addressed below.

Criterion A: While the New Era School may have played a role in the development of the local Newhall and Bouquet Canyon communities, the foundation remnants cannot be positively associated to the school and do not represent a significant contribution to the broad patterns of the local, regional, or national history.

Criterion B: The school house has no known significant association with the lives of persons important to local, California, or national history.

Criterion C: The foundation is a concrete feature and does not embody the distinctive characteristics of a type, period, or method of construction, nor does it represent the work of a master, or possess artistic value.

Criterion D: The concrete pad does not contain further potential to contribute important information about human history.

In addition, the foundation is located in the flood plain of the Bouquet Canyon wash and has been highly disturbed and retains little integrity. Therefore, P-19-004853 is recommended as not eligible for the NRHP or the CRHR.

6.1.2 P-19-004854 (CA-LAN-4854)

P-19-004854 (CA-LAN-4854) consists of the remains of a ranch complex from the early- to mid-twentieth century; features include two small concrete foundations or pads, a corrugated piece of sheet metal that was possibly used as a burn bin, various segments of a cast iron water conveyance pipeline, and a rock wall. P-19-004854 (CA-LAN-4854) does not appear to meet the criteria for inclusion in the NRHP or CRHR, as addressed below.

Criterion A: The ranch has no known association with an event that has made a significant contribution to the broad patterns of history or cultural heritage of California.

Criterion B: The ranch has no known significant association with the lives of persons important to local, California, or national history. Initials etched into the concrete foundations could not be correlated to the original American Period owner of the land, Lewis A. Gremminger, who obtained a land patent in 1897 under the authority of the Homestead Act, nor are the initials associated with any known persons, places, or events of significance.

Criterion C: The remains of the ranch are common building features made of concrete, cast iron, and rock that was probably locally sourced; they do not embody the distinctive characteristics of a type, period, or method of construction, nor do they represent the work of a master, or possess artistic value.

Criterion D: The ranch remnants do not contain further potential to contribute important information about human history; the potential to yield information appears to have been exhausted by recordation.

As such, P-19-004854 (CA-LAN-4854) is recommended as not eligible for the NRHP or the CRHR.

6.1.3 P-19-192514

P-19-192514 consists of a residential structure constructed between 1952 and 1959. The structure does not appear to meet the criteria for inclusion in the NRHP or CRHR, as addressed below.

Criterion A: Given the mid-twentieth century date of construction, the house does not represent the pioneering phase of Santa Clarita's development in the nineteenth century and is not associated with events that have made a significant contribution to the broad patterns of local or national history.

Criterion B: The house and associated garage appear to have been built at the same location as the "Martin Ruiz Adobe" that was constructed in the mid-nineteenth century and occupied by the Suraco family. The Suraco ranch was purchased by the Benz family in the 1940s, who were local alfalfa and hog farmers. Charles Benz, born in 1935, later married Barbara A. Suraco (born in 1939), who was a descendant of Gianbubista ("Gianbatista" or "Juan Batista") Suraco (Santa Clarita Valley Historical Society 2018b). It is not clear who built the current structure located at 28402 Bouquet Canyon Road, but it is was likely a member of the Suraco or Benz family. However, while the Suraco and Benz families have a long history of occupation in the canyon, the house was constructed at a far later date than Juan Batista Suraco's initial ownership of the land in the nineteenth century and after the initial ownership of the ranch by the Benz family in the early 1940s. As such, the structure has no known significant association with the lives of persons important to local, California, or national history.

Criterion C: The one-story residential structure is a common example of a postwar-era Ranch house, popular in the mid-twentieth century, and does not embody distinctive architectural characteristics, represent the work of a master, or possess artistic value.

Criterion D: The structure does not appear to have the potential to yield important information about historic construction materials or technologies and would not be considered significant as a source of information important in history.

Additionally, the residential structure and detached garage are in a state of deterioration such that they lack integrity, and the original character of the buildings is no longer evident. Therefore, P-19-192514 is recommended as not eligible for listing in the NRHP or the CRHR.

6.1.4 P-19-004855

P-19-004855 represents the location of a late nineteenth or early twentieth century wood frame house observed on historic topographic maps and aerial photographs. All that currently remains of the residence is a pepper tree and the a few fragments of glass and ceramic artifacts. P-19-004855 does not appear to meet the criteria for inclusion in the NRHP or CRHR, as addressed below.

Criterion A: The resource is the remnants of a residential wood frame structure that did contribute to the broad patterns of the local, regional, or national history.

Criterion B: Research conducted during the course of this study indicates that the house was originally built by the Suraco family once the "Martin Ruiz Adobe" fell into disrepair. However, as with P-19-192514, while the Suraco family has a long history of occupation in Bouquet Canyon, the resource has no known significant association with the lives of persons important to local, California, or national history.

Criterion C: The residential structure is no longer extant and as such, does not embody the distinctive characteristics of a type, period, or method of construction, nor does it represent the work of a master, or possess artistic value.

Criterion D: Recordation has exhausted the research potential of the resource. The structure has been demolished, and all that remains is a pepper tree and fragments of non-diagnostic historic artifacts.

In addition, the resource contains little integrity, as the entire area appears to have been graded at some point in the past, and as described above, the wood-frame residential structure is no longer existing. As such, P-19-004855 is recommended as not eligible for the NRHP or the CRHR.

6.2 MANAGEMENT RECOMMENDATIONS

In summary, four historic-period cultural resources were documented within the study area. The four resources, a concrete foundation (P-19-004853), the remnants of a ranch (P-19-004854 (CA-LAN-4854)), a residential structure (P-19-192514), and the remnants of a residential structure (P-19-004855) are recommended as ineligible for listing on the NRHP or the CRHR.

Based on the results of the current study, no historical resources, per CEQA, will be affected by the Bouquet Canyon Project. However, as discussed in Section 5.2 above, research conducted for the study indicates that a historic family burial plot may be located within the project site. Although no physical indication of the potential burial locations was identified during the pedestrian survey other than an area fenced off with a wire fence, it is recommended that in coordination with the City and the Fernandeño Tatavium Band of Mission Indians non-invasive studies be undertaken to locate the plot, if it exists. This could be accomplished through the use of cadaver dogs or remote sensing. In the event that human remains are discovered, the County Coroner shall be contacted. If the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the NAHC, shall be contacted

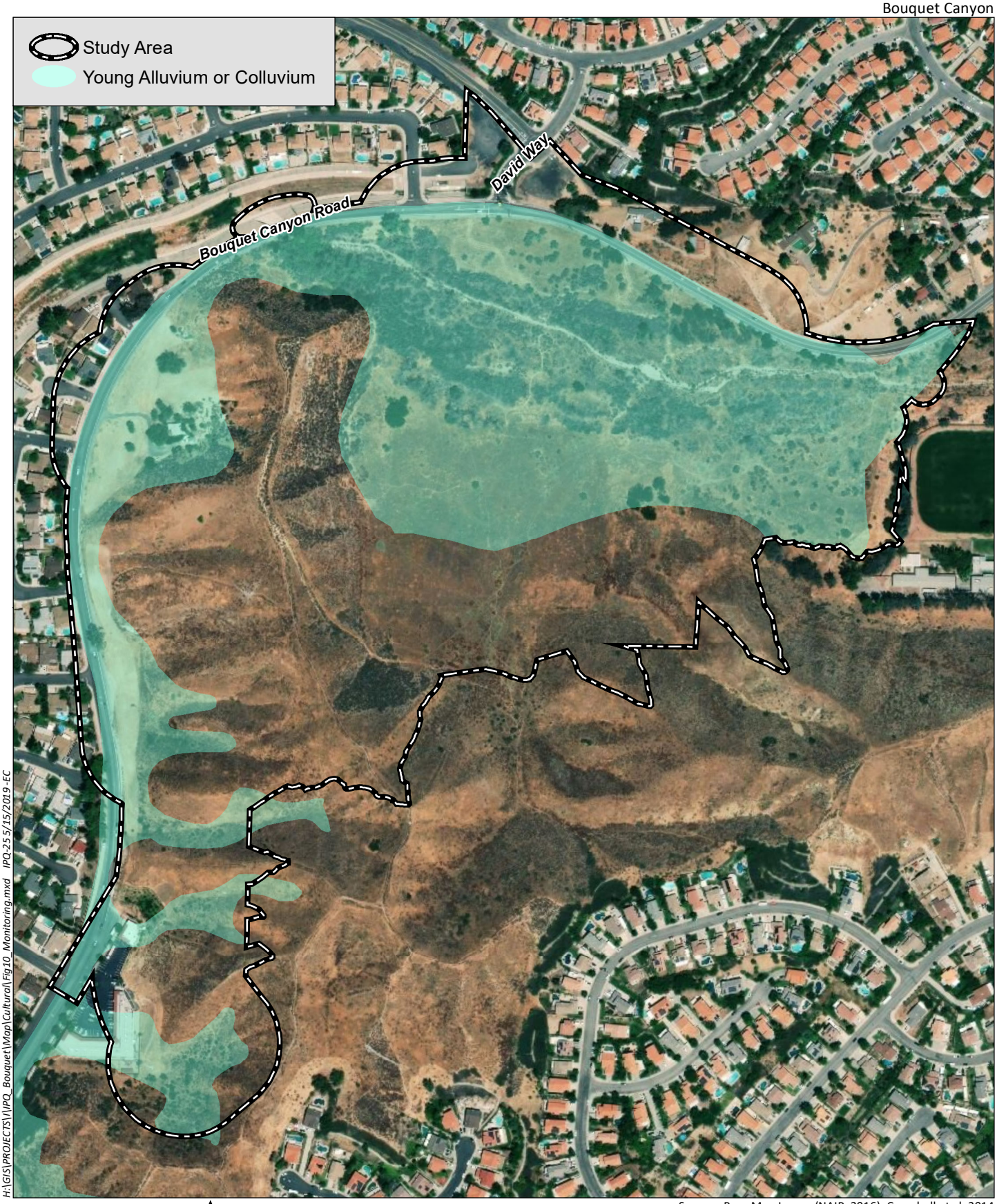
in order to determine proper treatment and disposition of the remains. All requirements of Health & Safety Code §7050.5 and PCR §5097.98 shall be followed.

The project site was covered by thick vegetation and the original ground surface could not be observed throughout the study area. In addition, the majority of the project site is located within young alluvial soils, where there is a potential for buried cultural resources. Also, while no Native American cultural resources have been identified within the study area, there are important cultural resources in the vicinity. The Native American monitor from the Fernandeño Tatavium Band of Mission Indians recommended archaeological monitoring, given the proximity of known cultural resources, and indicated that several cultural sites and Tatavium Place Names are located within proximity to the project.

Due to these concerns and the potential for buried cultural material to be present within the study area, it is recommended that an archaeological and Native American monitoring program be implemented for the project in areas of young alluvium and colluvium (Figure 10, *Areas of Young Alluvium or Colluvium Deposits*). Specific excavation depths have not yet been provided for the project. Although the areas of young alluvium are proposed to be raised up to approximately 60 feet with the use of fill, some grading, compaction, and/or scarification will occur prior to the placement of the fill.

The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the grading contractor and the presence of archaeological and Native American monitors during initial ground disturbing activities within the areas of young alluvium and colluvium. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the monitors will coordinate with the applicant and City of Santa Clarita staff to develop and implement appropriate mitigation measures.

Should the project limits change to incorporate new areas of proposed disturbance, archaeological survey of these areas will be required.



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Source: Base Map Layers (NAIP, 2016); Campbell et al. 2014

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Areas of Young Alluvium or Colluvium Deposits

Figure 10

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Appendix A

Resumes

Stacie Wilson, MS, RPA

Project Manager

HELIX Environmental Planning

Summary of Qualifications

Ms. Wilson has been professionally involved in CRM for 15 years and has more than 17 years of unique experience in both archaeology and GIS. She has served as principal investigator on numerous cultural resources management projects, and regularly coordinates with local, state, and federal agencies and Native American tribal representatives. She is skilled in project management, archaeological inventories and excavation, and report documentation and has broad experience on private, municipal, federal, utility, and renewable energy projects. Her years of experience also encompass an understanding of CEQA and NEPA compliance regulations. She is proficient at creating, organizing, and analyzing GIS data; her technical skills include ArcGIS 10.4, Spatial Analyst, Geostatistical Analyst, and working with datasets in Microsoft Word and Excel. Ms. Wilson is detail oriented and has strong organizational and coordination capabilities. She has managed large-scale surveys and site evaluations and designed and implemented site mitigation programs throughout southern California.

Selected Project Experience

Apple Valley Airport Detention Basin IS/MND (2017-2018). Project Manager for the preparation of an IS/MND for the acquisition of an approximately 18-acre property at the airport for construction of a detention basin to address stormwater runoff. Work performed for C&S Companies, with San Bernardino County as the lead agency.

Roripaugh Ranch - Phase 2 Project (2018-2018). Principal Investigator for a records search and background research, Native American coordination and contacting the NAHC, field survey, coordination with USACE, and preparation of a report addressing the NHPA Section 106 compliance

Cactus II Feeder Transmission Pipeline IS/MND (2017-2018). Senior Archaeologist overseeing cultural resources survey and report for this proposed pipeline project, including background research and Native American outreach. Assisted EMWD with Native American consultation under AB 52. The project will construct five miles of new transmission pipeline to serve planned development in Moreno Valley. Work performed for EMWD

Southern California Edison (SCE) As-Needed Environmental Compliance Support (2015-2016). Principal Investigator and Field Director for various as-needed projects located within SCE territory throughout several counties. Duties included coordination of cultural records searches, surveys, and reporting efforts for Capital Improvement and Transmission Line Rating Remediation (TLRR) program projects.

Valley South Subtransmission Project (2012- 015). Field Director and report author for a cultural resources inventory of the proposed Valley South Subtransmission Project located in

Education

Master of Science, Applied Geographical Information Science, Northern Arizona University, 2008

Bachelor of Arts, Anthropology, University of California, San Diego, 2001

Bachelor of Science, Biological Psychology, University of California, San Diego, 2001

Registrations/ Certifications

Register of Professional Archaeologists, The Register of Professional Archaeologists #16436, 2008,

Riverside County Approved Cultural Resources Consultant, 2017

Professional Affiliations

Society for California Archaeology

western Riverside County. Covering over 20 miles, the Phase I inventory and field survey project included compilation of record searches, a Native American contact program, field surveys, and completion of a Cultural Resources Survey Report and Proponent's Environmental Assessment section. Work performed for SCE, with the California Public Utilities Commission as the lead agency.

Path 42 Transmission Line Project (2012-2013). Field Director for a cultural resources survey of the proposed Path 42 Transmission Line Project in Riverside County. Covering 233 acres, the Class III study included compilation of record searches, a Native American contact program, field surveys, and completion of a cultural resources Class III report. Work performed for Imperial Irrigation District (IID), with BLM as the lead agency.

Antelope Valley Solar Project (2011-2012). Field Director, GIS Specialist, and report author for solar electric-generating facilities proposed on an approximately 5,000-acre site in Kern and Los Angeles counties. The project included the organization of a records search, Native American contact program, archaeological and built environment surveys, the recordation of cultural resources, and the preparation of cultural resources reports. Work performed for Renewable Resources Group, Inc., with the County of Kern as the lead agency.

Bureau of Land Management National Historic Trails Inventory, AZ, CA, CO, NM, NV, UT, WY (2010-2012). GIS Task Lead for a multi-state initiative that focused on identifying, field inventorying, and assessing the cultural and visual resources of six National Historic Trails located on land owned by BLM. The inventory included examining high potential route segments and high potential historic sites of the Old Spanish, El Camino Real de Tierra Adentro, California, Oregon, Mormon Pioneer, and Pony Express National Historic Trails. Task lead duties included technical guidance, development of methodology, establishment of protocols and standards for field work, and reviewing of technical work for the GIS-related tasks.

Mojave Solar Project and Lockhart Substation Connection & Communication Facilities (2010-2011). Project Manager, Field Director, and Class III report author for a cultural resources survey of the Lockhart Substation Connection & Communication Facilities for the proposed Mojave Solar Project. The project was located on private, BLM, and Edwards Air Force Base lands in San Bernardino County and included surveying 85 linear miles in the Mojave Desert region of California. Work performed for Mojave Solar, LLC, with BLM as the lead agency.

Blythe and Palen Solar Power Projects (2009-2014). GIS Analyst and Field Archaeologist for concentrated solar electric-generating facilities proposed on approximately 2,000-acre and 7,000-acre sites. Proposed facilities were to be located on land in eastern Riverside County owned by the BLM. The projects, under a Fast-Track The American Recovery and Reinvestment Act of 2009 funding schedule, will use well-established parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator. Work included extensive resource and project GIS data management. Work performed for Solar Millennium, LCC, with the BLM as the lead agency.

Catherine A. Wright

Assistant Project Manager

HELIX Environmental Planning

Summary of Qualifications

Ms. Wright has 22 years of experience performing cultural resource management in the West. She has performed the full range of archaeological and historic resource studies in California, Arizona, and Nevada. This includes background research, surveys, site evaluations, and mitigation through data recovery and monitoring. She has prepared numerous cultural resource survey reports, site overviews, background summaries, survey and testing plans, and Integrated Cultural Resource Management Plans (ICRMPs). She acted as Quality Assurance Manager for numerous large cultural resources contracts with the Department of Defense, including the Navy, Air Force, Army Corps of Engineers, and the Department of the Army.

Ms. Wright has considerable experience with the cultural resource requirements of CEQA and with CEQA Plus. Ms. Wright has worked with various private project proponents and land developers, including McMillin Companies, Pardee Homes, KB Home, Sunroad Development, Wakeland Housing, Hillcrest Homes, Toll Brothers, San Diego Military Family Housing, and others. She has also developed close working relationships with Native American representatives and Tribal consultants. She has also worked with the City and County of San Diego, City of Chula Vista, Bureau of Land Management, City and County of Riverside, California State Parks, Caltrans, Bureau of Indian Affairs (BIA), U.S. Forest Service, Bureau of Reclamation, Corps, Imperial Irrigation District (IID), Coachella Valley Water District, and Caltrans.

Education

Bachelor of Science, Anthropology, University of California, Riverside, 1998

Selected Project Experience

Braverman Drive Residential Development Site Mitigation and Salvage (2016). As Archaeologist, assisted with the salvage of late prehistoric cremations and associated burial goods after the completion of data recovery mitigation of a prehistoric site along the San Diego River in the City of Santee. Screened soil and collected diagnostic and unique artifacts and human remains for repatriation with the Kumeyaay Indians. Reviewed portions of the technical report. Work performed for KB Home.

Castlerock Archaeological Site Testing Project (2004). As Archaeologist, conducted archaeological site evaluation testing on three small lithic scatters for a proposed residential development project north of Mast Boulevard in the City of Santee. Coordinated with UXO specialist to perform surveys on the property prior to excavation to ensure no unexploded ordnance associated with the former Camp Elliot (now MCAS Miramar) would be disturbed. Prepared portions of the technical report. Work performed for Pardee Homes.

Castlerock Archaeological Survey (2004). As Associate Archaeologist, conducted pedestrian survey of 120 acres for a proposed development project along Mast Boulevard in the City of Santee. Identified two lithic scatters and relocated three

previously recorded archaeological sites. Prepared site records and portions of the technical report. Work performed for Pardee Homes.

Pankey Ranch Archaeological Site Evaluations (2003). As Archaeologist, conducted archaeological site testing to delineate the subsurface cultural deposits related to a known significant site, SDI-686, in support of a proposed residential development project and development of a new campus for Palomar College in San Diego County. Coordinated with Native American monitors to observe excavation. Work performed for Pardee Homes.

City of Santee Master Plan Update (2002). As Assistant Project Manager, conducted records search at the South Coastal Information Center and edited archaeological report incorporating records search and GIS information for updating Santee's master plan. Numerous significant sites are known to be located within the City. Work performed for the City of Santee.

MCAS Miramar ICRMP (2007 - 2009). As Technical Editor, reviewed this management planning document, which covers regulatory requirements and status of knowledge information for archaeological resources and historic built environment resources on the MCAS Miramar base in San Diego County. Work performed for NAVFAC SW.

Archaeological Testing at the SoCalGas Goleta Facility (2016 - 2017). As Project Manager, prepared a proposal to complete archaeological testing within the boundaries of a known prehistoric habitation site located within the Southern California Gas Company (SoCalGas) facility located along Goleta Slough, Santa Barbara County. Prepared mapping of STP locations for approval by the County prior to the commencement of testing. Coordinated the exact placement of excavation locations with the field director. Coordinated site access and project work with the SoCalGas archaeologists and environmental personnel. Reviewed technical report prior to submission. Work performed for SoCalGas.

Archaeological Studies at the Sanchez Adobe (2016 - 2017). As Project Manager, coordinated archaeological monitoring during the replacement of a waterline within a National Register of Historic Places (NRHP-) listed historic district in San Mateo County. The five-acre property includes archaeological remains attributable to every major habitation period in California, from the prehistoric through WWII. Coordinated with San Mateo County to provide Ground Penetrating Radar (GPR) studies to determine if intact subsurface cultural deposits are present within the site boundaries; edited resulting GPR report and utilized the results to prepare a proposal for performing an Extended Phase I testing program within the boundaries of an area slated for the construction of an interpretive center. Coordinated the preservation in place of human remains discovered during testing through placement of a cap with Park personnel, the construction contractor, and Native American representatives. Work performed for San Mateo County Parks Department.

Work Plan for the Orcutt Specific Plan Area Archaeological Testing Project (2016 - 2017). As Senior Archaeologist, drafted the testing plan for a small lithic scatter located at the confluence of three streams in San Luis Obispo County. Work plan included the methods for testing the site with shovel test pits (STPs) and test excavation units (TEUs) to determine the CRHR eligibility of the site. Work performed for Ambient Communities, LLC.

Archaeological Testing for the 6th Avenue Suites Project (2016). As Senior Archaeologist, monitored mechanical trenching to test a previously developed property for subsurface archaeological deposits. Monitored geotechnical testing and boring being performed by the project geologist. No sites were identified. Coordinated with City of San Diego personnel to provide paleontological monitors during deeper excavations on the property. Prepared technical report. Work performed for the Narven Partners.

Archaeological Survey and Testing of the Quarry Creek Development (2012). As Project Manager, worked with the developer to complete survey of the Quarry Creek property, located south of SR-78 in Oceanside, near Carlsbad. Directed archival review of the Marron Adobe, which is located on the property. Consulted with the San Luis Rey Band to determine the tribal significance of a natural waterfall on the property considered to be a sacred site to the Luiseño. Coordinated attendance at public meetings for the project with the assigned Principal Investigator and McMillin staff. 35 sites were identified during survey; significance evaluations were then completed. Work performed for McMillin Companies.

Preparation of Publications for the Journal of California and Great Basin Archaeology (2006). As Peer Reviewer, edited two technical reports prepared by CalFire for submission to the Journal of California and Great Basin Archaeology. One of the papers provides the basis for identifying and describing Cuyamaca Oval basin metates (Hector et al. 2006). Work performed for CalFire.

Archaeological Survey of the Canyon Trails Project (2006). As Associate Archaeologist, conducted survey of an 80-acre parcel located in the northeast portion of Hemet, Riverside County. Identified 20 previously undocumented archaeological sites, most of which are bedrock milling loci. Prepared site documentation and CRHR eligibility evaluations based upon surface components of the sites. Human remains were identified on the property during subsequent archaeological testing for the project. Work performed for T&B Planning.

Salt Creek Ranch Archaeological Monitoring (2004). As Project Coordinator, coordinated construction monitoring for a large development parcel located in Chula Vista, San Diego County. Coordinated between developers, construction crews and staff for archaeological testing to evaluate the significance of one prehistoric site discovered during monitoring. Prepared technical report. Work performed for McMillin Companies.

Amtrak O' Neil to Las Flores Archaeological Evaluation (2004). As Field Archaeologist, excavated archaeological deposits within the North County Transit District (NCTD) right-of-way along Interstate 5 on MCB Camp Pendleton, San Diego County to evaluate a potential significant site. Work performed for NCTD.

Native American Consultation for Balboa Avenue Geronimo Canyon and Miramar Trunk Sewers (2003). As Native American Coordinator, consulted with the NAHC and with Native American representatives on the impacts of implementation of proposed sewer installations located throughout San Diego County. Prepared consultation report for the City of San Diego Metropolitan Wastewater Department.

Archaeological Monitoring for the Otay River Pump Station Construction Project (2002 - 2003). As Archaeological Monitor, monitored mechanical excavation on a 1,500-foot-long section of sewer line replacement along the tidal flats of San Diego Bay in Imperial Beach, San Diego County. Intact cultural deposits were identified, and samples collected. Testing of the sites through coring determined they were not eligible for NRHP listing. Coordinated with construction contractor, engineering firm, and other environmental firms, including biologists and soils specialists. Prepared portions of technical report. Work performed for City of San Diego Metropolitan Wastewater Department.

Eastgate Mall Testing (2001). As Field Archaeologist, conducted archaeological testing of a small prehistoric lithic scatter near Nobel Drive in La Jolla. Work performed for the City of San Diego Metropolitan Wastewater Department.

Archaeological Evaluation of SDI-14258 and 14624 (2001). Conducted archaeological survey and evaluation of two previously recorded prehistoric sites near a firing range on MCB Camp Pendleton, San Diego County. Work performed for The U.S. Army Corps of Engineers, Los Angeles District and NAVFAC SW.

Base-wide Archaeological Evaluations on MCB Camp Pendleton (1999 - 2000). Participated in a base-wide site evaluation project on MCB Camp Pendleton, San Diego County. Testing occurred on more than 25 prehistoric sites distributed across the installation and led to the recovery of large collections of artifacts, which were then analyzed and curated. Work performed for NAVFAC SW.

SA Line Archaeological Site Evaluation (2001). As Associate Archaeologist, conducted evaluation of archaeological sites within the SA Line right-of-way in Imperial County. Work performed for Imperial Irrigation District.

Archaeological Assessment of the Anthony Robbins' Residence (2000 - 2001). As Associate Archaeologist, conducted archaeological testing to assess the significance of archaeological deposits identified at a private residence in the La Jolla Colony. Work performed for Robert Trown Associates.

Haul Road Data Recovery (2000). As Field Archaeologist, conducted excavation, soil profiling and collecting of special samples (flotation and micromorphology) on the northernmost portion of MCB Camp Pendleton, San Diego County. Work performed for U.S. Army Corps of Engineers, Sacramento District and NAVFAC SW.

Locus O Data Recovery (2000). As Associate Archaeologist, conducted excavation of large rock ring with associated human remains at CA-RIV-45 located in Palm Springs, Riverside County. Work performed for Agua Caliente Band of Cahuilla Indians.

Levee Bridge Archaeological Data Recovery (1999 - 2000). As Field Archaeologist, conducted data recovery of three archaeological sites along the Santa Margarita River (MCB Camp Pendleton, San Diego County) in support of the construction of a levee for the river and edited technical report. Work performed for Engineering Environmental Management (e2m).

Mary Robbins-Wade, RPA

Director of Cultural Resources

Summary of Qualifications

Ms. Robbins-Wade has over 35 years of experience in both archaeological research and general environmental studies. She oversees the management of all of HELIX's archaeological, historic, and interpretive projects; prepares and administers budgets and contracts; designs research programs; supervises personnel; and writes reports. Ms. Robbins-Wade has managed or participated in hundreds of projects under the California Environmental Quality Act (CEQA), as well as numerous archaeological studies under various federal jurisdictions, addressing Section 106 compliance and National Environmental Policy Act (NEPA) issues. She has an excellent relationship with the local Native American community and the Native American Heritage Commission (NAHC). Ms. Robbins-Wade has worked in Southern California archaeology for most of her robust career. Her clients regularly include numerous government agencies, including the counties of San Diego, Imperial, Riverside, Orange, and Los Angeles and the cities of San Diego, Vista, Oceanside, Chula Vista, Carlsbad, La Mesa, Poway, Santee, Escondido, and others. She has conducted studies for many water districts/water agencies, Caltrans, SANDAG, U.S. Navy, SDG&E, UC San Diego, San Diego Community College District, various non-profits, and a variety of other entities. Although Ms. Robbins-Wade has extensive experience with public sector projects, most of her work has been for private developers. She has managed projects from monitoring of single-family home remodels to survey and data recovery programs for Specific Plan areas, large residential developments, and a variety of commercial projects. Work for public projects has ranged from constraints studies for pipeline alternatives to survey, testing, and monitoring programs for public projects, such as parks, roadways, and various utilities. Ms. Robbins-Wade has also managed a range of monitoring projects in the public sector, including the installation of a manhole in Old Town State Historic Park, an emergency pipeline repair in a culturally sensitive area, monitoring improvements to Highway 76 along the San Luis Rey River, and lengthy monitoring programs for sewer/water/storm water projects.

Selected Project Experience

Moulton Niguel Water District Regional Lift Force Main Replacement (2017 - 2018).Cultural Resources Task Lead for the replacement of a regional lift station force main operated by Moulton Niguel Water District (MNWD). The project comprises an approximately 9,200 linear foot alignment within Laguna Niguel Regional Park in Orange County, in an area that is quite sensitive in terms of cultural resources. HELIX is supporting Tetra Tech throughout the preliminary design, environmental review (CEQA), and final design, including permitting with applicable state and federal regulatory agencies. The cultural resources survey will inform project design, in order to avoid or minimize potential impacts to cultural resources. Overseeing background research and constraints analysis, Native American

Education

Master of Arts, Anthropology, San Diego State University, California, 1990

Bachelor of Arts, Anthropology, University of California, Santa Barbara, 1981

Registrations/ Certifications

Register of Professional Archaeologists #10294, 1991

County of San Diego, Approved CEQA Consultant for Archaeological Resources

Orange County Approved Archaeologist, 2016

Riverside County Approved Cultural Resources Consultant, 2017

NCTD, Roadway Worker ID #C02943, 2015

Professional Affiliations

Society for American Archaeology

coordination, cultural resources survey, coordination with MNWD and Tetra Tech, and report preparation. Work performed for MNWD, as a subconsultant to Tetra Tech.

Moulton Niguel Water Dis Pipeline Align (2017 - 2018).Cultural Resources Task Lead for the replacement of existing potable water (PW) and recycled water (RW) pipelines by Moulton Niguel Water District (MNWD). The study area is situated within the Mission Viejo Country Club on the east side of the I-5 and MNWD's Wastewater Plant 3A in the western portions. The general area is sensitive for cultural resources. Overseeing background research and constraints analysis, Native American coordination, cultural resources survey, coordination with MNWD and Tetra Tech, and report preparation. Work pas a subconsultant to GHD, with MNWD as the lead agency.

Orange County Sanitation District Newhope-Placentia TSR, No. 2-72 B (2016). Cultural Resources Task Leader/Principal Investigator for the cultural resources study for this sewer replacement project in Anaheim. The cultural resources study included a records search/literature review, field visit, Native American outreach, and preparation of a report. Work performed as a subconsultant to Lee & Ro, Inc., with Orange County Sanitation District as the lead agency.

Santa Margarita Water District 3A Water Reclamation Plant Tertiary Treatment Expansion (2016). Cultural Resources Task Leader/Principal Investigator for the cultural resources study for proposed improvements to an existing water reclamation facility in Mission Viejo. The cultural resources study included a records search/literature review, Native American Heritage Commission correspondence, preparation of a report, and assisting the District with Native American outreach.

Euclid and Broadway Project (2016). Project Manager/Principal Investigator for the cultural resources study for the redevelopment of a commercial property into residential uses in the City of Anaheim. The cultural resources study included a records search and literature review, historic evaluation, Native American outreach, field visit, and preparation of a report. Work performed for KB Home.

Orange County Sanitation District Newhope-Placentia Trunk Sewer Replacement, No. 2-72A (2015 - 2016). Cultural Resources Task Leader/Principal Investigator for the cultural resources study for this sewer replacement project in Fullerton and Anaheim. The cultural resources study included a records search/literature review, field visit, Native American outreach, and preparation of a report. Work performed as a subconsultant to Lee & Ro, Inc., with Orange County Sanitation District as the lead agency.

28th Street between Island Avenue and Clay Avenue Archaeological Monitoring (2014 - 2018).Project Manager/Principal Investigator for a utilities undergrounding project in a historic neighborhood of East San Diego. Responsible for project management; coordination of archaeological and Native American monitors; coordination with forensic anthropologist, Native American representative/Most Likely Descendent, and City staff regarding treatment of possible

human remains; oversaw identification of artifacts and cultural features, report preparation, and resource documentation. Work performed for the City of San Diego.

30th St Pipeline Replacement (2014 - 2015).Project Manager/Principal Investigator for a 3.4-mile City of San Diego pipeline replacement project that traverses several historic neighborhoods in North Park, South Park, Golden Hill, and Southeastern San Diego. Oversaw background research and report preparation. Work performed for Rick Engineering.

Balboa Station Specific Plan Area First Screencheck PEIR (2016 - 2017).Cultural Resources Task Manager for a Specific Plan that would provide the policy framework to establish transit-oriented development and multi-modal improvements within the Specific Plan area. One of the main objectives of the Specific Plan is to improve access to existing and future transit facilities. Oversaw background research, Native American outreach, cultural resources survey, and technical report in support of the PEIR. Work performed for RRM Design Group, with City of San Diego as the lead agency.

Buena Sanitation District Green Oak Sewer Replacement Project (2016 - 2017).Project Manager/Principal Investigator for a cultural resources testing program in conjunction with a proposed sewer replacement project for the City of Vista. Oversaw background research, fieldwork, site record update, Native American coordination, and report preparation. Work performed for Harris & Associates, Inc.

El Camino Real Road Widening-Archaeological Monitoring (2015 - 2016).Project Manager/Principal Investigator for an archaeological monitoring project for the City of Carlsbad in a culturally sensitive area. Project requires close coordination with Native American representatives, City staff, construction crews, and another cultural resources firm to ensure that there are no impacts to significant cultural resources. Work performed for the City of Carlsbad.

Heritage Bluffs II (2014 - 2015).Project Manager/Principal Investigator for a cultural resources survey of approximately 170 acres and testing program at two archaeological sites, for a proposed residential development in the City of San Diego. Worked with project applicant and Red Tail on project design that would avoid impacts to a site area with cultural features and cremated human remains. Much of the work was completed prior to coming to HELIX, between 2007 and 2014. Work performed for Project Design Consultants.

Lake Wohlford Dam (2015 - 2015).Project Manager/Principal Investigator for a cultural resources survey for proposed dam replacement for the City of Escondido. Oversaw background research; field survey; recording eight previously undocumented sites and five isolates, as well as updating 14 previously recorded sites; report preparation; and Native American outreach. Provided input for location of

staging areas and access routes. Coordinating with City, engineering consultant, and environmental consultant. Work performed for AECOM.

Lilac Hills Ranch (2014 - 2017).Project Manager/Principal Investigator of a cultural resources survey and testing program for an approximately 608-acre mixed-use development in the Valley Center area. Oversaw background research, field survey, testing, recording of archaeological sites and historic structures, and report preparation. Responsible for development of the research design and data recovery program, preparation of the preservation plan, and Native American outreach and coordination. The proposed Specific Plan includes residential and commercial use, Town Center, park and private recreation areas, senior center, school site, waste recycling facility, wastewater reclamation facility, active orchards, and other supporting infrastructure. The project also included recording historic structures, development of a research design and data recovery program for a significant archaeological site, and coordination with the Native American community and the client to develop a preservation plan for a significant cultural resource. The project changed over time, so additional survey areas were included, and a variety of off-site improvement alternatives were addressed. Work performed for Accretive Investments, Inc. with County of San Diego as the lead agency.

Southwest Sewer Realignment Project - Monitoring Services (2016 - 2018).Project Manager/Principal Investigator for cultural resources monitoring during construction of a sewer realignment project in western Escondido, adjacent to an ethnohistoric village site. The project is located in an area that is sensitive to both the Kumeyaay and Luiseño people, requiring close coordination with Native American monitors from both groups. Oversaw monitoring program; responsible for Native American outreach/ coordination, site record updates to reflect the finding of additional bedrock milling features, and report preparation. Work performed for the City of Escondido

SR-76 East Mitigation Monitoring - Cultural Monitoring (2015 - 2018).Project Manager/Principal Investigator for a cultural resources monitoring project for roadway improvements at the SR-76/I-15 Interchange and on SR-76 along the San Luis Rey River in the Bonsall area of San Diego County. The area along the San Luis Rey River is quite sensitive in terms of cultural resources. Overseeing field monitoring, report preparation, and monitor coordination with Caltrans field staff. Responsible for Native American coordination and coordination with Caltrans cultural resources staff. Work is being conducted for Caltrans and SANDAG.

Julie Roy
Field Director

HELIX Environmental Planning

Summary of Qualifications
Ms. Roy has over 20 years of experience as an archaeologist, field lead, and supervisor on more than 130 projects throughout California, Nevada, Arizona, and Guam. She has conducted archaeological studies for a wide variety of development and resource management projects including work on military installations, energy and transmission projects, commercial and residential developments, historic archaeology projects, and water projects. Ms. Roy is competent in all areas of archaeology and efficient in report preparation for a range of cultural resource studies including monitoring projects and archaeological Phase I, II, and III studies. She is proficient in laboratory activities including artifact preparation, cataloging, identification, and illustration and accomplished in the initiation, coordination and completion of field assignments including survey, site testing, dry and wet screening, and data recovery projects. She is also knowledgeable in the preparation of proposals and report writing and research, client, contractor and subcontractor correspondence, laboratory, computer software including Microsoft, Adobe, GIS/ArcView, CADD, GPS and total-station operations, as well as in the illustration of archaeological features, artifacts, and burials.

Selected Project Experience

Lake Elsinore MEBO Resort Project (2018-2018). Field Director for survey of off-site parcels for a proposed resort development in Lake Elsinore. Coordinated testing of a significant site to determine its extent within the project and off-site parcels. Conducted background research and field survey. Work performed for LK Investment Group, with the City of Lake Elsinore as the lead agency

On-call Archaeological Services (Ongoing). Field Director for San Diego Gas & Electric Company (SDG&E) infrastructure operations and transmission line maintenance activities for over 12 years. Projects include survey, testing, excavations, and data recovery of both historic and prehistoric resources including Native American burial sites. Approved to monitor for projects throughout San Diego and Imperial counties. Other duties include records search, survey, site documentation and investigations, and preparation of reports under CEQA and NEPA guidelines. Work performed for SDG&E

On-Call Archaeological Services (Ongoing). Field Director for County Parks infrastructure and maintenance activities for San Diego County Department of Parks and Recreation. Responsible for communication with County supervisors and contractors, and the coordination of project activities with cultural and Native American monitors for projects throughout San Diego County. Other duties included records searches, field survey, archaeological documentation and investigations including testing, excavations and data recovery projects, and preparation of reports following CEQA and NEPA guidelines.

Education
Master of Arts, in Progress, University of Leicester, England, 2015
Bachelor of Arts, Anthropological Archaeology, University of California San Diego, 2002

Registrations/ Certifications
Technical Safety Institute, HAZWOPER 40-Hour, Issue No. F183291: Hazardous Waste Operations and Emergency Response, 2018

Professional Affiliations
Society for California Archaeology
Society for American Archaeology
Association of Environmental Professionals

Fire Resource Cultural Resources Mitigation (Ongoing). Monitoring Coordinator and Lead Archaeologist on this Fire Resource Mitigation Initiative (FiRM) project for SDG&E. Monitoring Coordinator duties consisted of close communication with SDG&E supervisors and staff, liaisons, and contractors in conjunction with the coordination of FiRM project activities associated with cultural and Native American archaeological and monitoring efforts. Archaeological Supervisor duties consists of record searches, survey, archaeological site documentation, testing, excavations, and data recovery projects, and preparing reports following CEQA and NEPA guidelines.

Blythe to Eagle Mountain TLRR Survey (2017). Field Director for this SCE survey project, which included supervising two field crews over a two-week period. Conducted survey, mapping, recording new cultural resources and updating previously recorded sites along the transmission line corridor. Other responsibilities included report writing and completion of site records for distribution to SCE and the South Coastal Information Center (SCIC).

Monitoring, Genesis Solar Power Project (2011-2012). Supervisor-in-Charge of over 20 cultural monitors on this solar power project located in Blythe, California. Conducted safety meetings and coordinating cultural monitors to all areas of the project site and led test excavations of discovered resources during construction. Represented firm during onsite meetings with Nextera officials, Bureau of Veritas, BLM, and safety liaisons for the project. Communicated directly with Native American supervisors and monitors. Recorded and collected artifacts located during construction activities with the use of GPS. Completed daily field notes and collection logs for collected artifacts, and reviewed staff monitoring logs prior to daily submission to the California Energy Commission (CEC). Work performed for Nextera.

Survey and Monitoring for the Palen Solar Power Project (2009-2010). Archaeologist for survey and cultural monitoring in Desert Center, California. Monitored contract and personnel activities, including trenching and testing within project areas. Work performed for Solar Millennium.

Ridgecrest Solar Power Project (2009-2010). Archaeologist for surveys of the project area undertaken to determine if cultural resources are present and if there would be any project effects on these resources. Monitored contractor activities during the testing phase of the project to ensure that sites were not impacted during work activities. Work performed for Solar Millennium.

Archaeological Monitoring, Water Pipeline Project (2008). Archaeological Monitor for construction of a 3.3-mile-long pipeline for compliance with project guidelines and to ensure the preservation of cultural sites in the area. This project was conducted in compliance with CEQA and Imperial County guidelines. Work performed for Western Mesquite Mine.

Chicken Bones Race Survey (2006). Archaeologist for a survey to redirect the proposed race route when cultural areas were determined to be within the planned route, located in El Centro, California. This project was performed for the BLM and conducted in compliance with CEQA and Imperial County guidelines.

Race Survey, Phase 2A and 2B (2006). Archaeologist to establish a route for the race that would avoid cultural resources located in El Centro, California. This project was performed for the BLM and conducted in compliance with CEQA and Imperial County guidelines.

Appendix E:
Geotechnical Report and Paleontological Resources Record Check

Part 1: Geotechnical Report

October 18, 2019
J.N. 18-322
(Revision 1)

THE BOUQUET CANYON PROJECT OWNER, LLC
888 San Clemente Dr., Suite 110
Newport Beach, California 92660

Attention: Mr. Scott Covington, Vice President

Subject: **Updated Geotechnical EIR-Level Assessment, *Bouquet Canyon Project*, Tentative Tract Map 82126, Southerly Adjacent to Bouquet Canyon Road at Copper Hill Drive, City of Santa Clarita, Los Angeles County, California**

References: See Appendix

Dear Mr. Covington:

Petra Geosciences, Inc. (Petra) is presenting herein our Updated Geotechnical EIR-level assessment for development of the proposed residential dwellings at the Bouquet Canyon project located in Santa Clarita, California. The purposes of our study are to evaluate the proposed project from a geotechnical engineering standpoint and to determine what geotechnical constraints are inherent to the site that may influence the proposed development as depicted on the current site plan. This updated report supersedes the EIR-Level Assessment report dated January 22, 2019 (___, 2019a) and includes additional analyses and recommendations as outlined in Peer Review Comments from R.T. Frankian and Associates (___, 2019a,b) and subsequent Response Reports by Petra (___, 2019b,c)

Should you have any questions regarding the contents of this report, or should you require additional information, please do not hesitate to contact us.

Respectfully submitted,

PETRA GEOSCIENCES, INC.

Theodore M. Wolfe
Senior Associate Geologist
CEG 1626

EXECUTIVE SUMMARY

Site Description

The study area is located on the east/south side of Bouquet Canyon Road at the easterly terminus of Copper Hill Drive. The frontage along Bouquet Canyon Road is approximately 0.7 miles. The accompanying Site Location Map (Figure 1) depicts the areal limits of the site. The site comprises approximately 90 acres and is characterized by a prominent north/south trending ridgeline on the western portion of the site and the broad, flat plain of Bouquet Canyon in the central and northeastern portions. The active stream channel of Bouquet Canyon crosses the northern portion of the site. Topographically, the central and northern portions of the site are relatively flat with a slight gradient toward the active stream channel. The slopes that descend from the main ridgeline vary in gradient from approximately 3:1 horizontal to vertical (h:v) to 1½:1. The highest natural slope is approximately 150± feet and overall site topographic relief is on the order of 200± feet.

An existing homestead consisting of a one-story dwelling and several secondary structures/sheds is located in the northwest portion of the site. Access to the homestead, which is not a legal part of the subject tract, is via a dirt/asphalt road off of Bouquet Canyon Road.

CEQA Guidelines

According to Appendix G of the California Environmental Quality Act Statutes and Guidelines (CEQA, 2018), geological/geotechnical impacts are deemed significant if the project results in any of the following:

1. Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

    a. Surface rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42).

    b. Strong seismic ground shaking.

    c. Seismic-related ground failure including liquefaction or landslides.

2. Substantial soil erosion or the loss of topsoil.

3. Location of structures on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

4. Location of structures on expansive soils, as defined in Table 18-1-B of the 1994 Uniform Building Code (CBC), creating substantial risks to life or property.

5. Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

In addition, if the project substantially alters a topographic feature, or a unique natural physical feature (i.e., significant ridgelines or rock outcroppings) were to be damaged or destroyed by project related activities, project impacts could also be considered significant.

Potentially Significant Geological/Geotechnical Impacts

On the basis of our study, the project activities and geologic hazards that have been identified which may potentially affect the proposed development of the site include the following:

- The potential for strong ground motions associated with major earthquakes on one of several nearby active earthquake faults.
- Secondary effects associated with seismic activity, including liquefaction, lateral spread, landslide and related ground deformation.
- Pre- and post-construction soil erosion.
- The presence of potentially compressible native soils within the foundation influence zone of the proposed structures.
- Potential hazards related to the inherent engineering characteristics of onsite soils (i.e. expansion potential).
- Unfavorable bedding plane orientation that adversely affects slope stability.

The possible impacts of each of these conditions on the proposed development are summarized in the following paragraphs. A more detailed discussion of each of these issues and their potential impact on site development is provided in the "Site-Specific Geologic Impacts and Mitigation Measures" section of this report.

Seismically-Related Ground Shaking and Secondary Seismic Effects

As is the case for most locations in southern California, the subject property is susceptible to strong ground shaking as a result of future earthquakes along any of the numerous faults that traverse the region. For this reason, the State and local building codes that govern construction in the area require that the maximum anticipated level of earthquake shaking be taken into consideration in the design of human occupancy structures. Through proper application of the current California Building Code (CBC) regulations for

seismic design, it is expected that the potential for life-threatening damage to the proposed structures as a result of seismically-related ground shaking can be mitigated to a less than significant level. Potential secondary effects of strong seismic shaking at the site include liquefaction and associated settlement, lateral spreading, surface manifestation of liquefaction (including localized bearing failure, ground fissuring and sand boils), as well as landslide movement. According to data reviewed of the published Seismic Hazard Zone Report for the Mint Canyon 7.5-minute quadrangle (CDMG, 1999), the flatter areas in the north/central portions of the site lie within a designated Liquefaction Hazard Zone and much of the remaining portions of ridgeling and slope areas of the site are within a designated Earthquake-induced Landslide Hazard Zone.

Soil Erosion

Based on the current topography of the site, rainfall runoff is presently controlled by sheet flow from the dominant high points along the southern and western property limits to the active drainage channel of Bouquet Canyon. This drainage debauches offsite through a culvert/bridge which crosses Bouquet Canyon Road. Secondary runoff from the western flank of the main site ridgeline is directed to storm drain systems along Bouquet Canyon Road. The lack of permanent surface drainage and erosion controls across the site is likely to impact the adjacent areas and possibly the municipal storm drain system prior to and during the construction phase of the project until such time as the permanent Water Quality Management Plan is implemented.

Concentrated surface water flow can, over time, cause rilling and possible washouts of graded slope areas. The project design is expected to incorporate protective landscaping, positive drainage away from slopes on building pad areas, and an extensive network of area drains as means to prevent erosion and loss of topsoil. Such measures will ultimately be shown on the civil engineer's project plans.

Settlement Due to Consolidation of Native Soils

The results of our field investigation indicate that undocumented artificial fill and native soils existing within the foundation influence zone of proposed structures may be subject to compression under the loads imposed by newly-placed compacted fills and proposed building foundations. For this reason, the design-phase geotechnical report should include recommendations for excavation and recompaction of existing fill and native soils that are intended to reduce the amount of expected post-construction settlement to within typical construction tolerances for well-designed foundations.

Expansive Soils

Expansive soils are soils that experience volumetric changes in response increases or decreases in moisture content. Relatively thin, rigid structural elements such as building floor slabs and exterior concrete flatwork may experience uplift, shifting, or cracking as a result of swelling or contraction of expansive soils. In recognition of these issues, Section 1808 of the CBC contains provisions for design of building foundations and floor slabs to reduce the potential detrimental effects of expansive soils.

The site soils are anticipated to have Expansion Indices (EIs) ranging from less or equal to 20 for sandy soils derived from active alluvial deposits to possibly on the order of 100 or so for soils derived from fine-grained portion of the Castaic Formation. Soils with Expansion Indices greater than 20 are considered expansive in accordance with the 2016 CBC. Recommendations intended to reduce the potential detrimental effects of expansive soils should be provided during the design phase. Additional testing should be performed during and after grading to evaluate the expansion potential soils present at/near finish grade so that additional recommendations can be provided by the geotechnical consultant, if necessary.

Slope Instability and Landslides

Portions of the site slope areas are located within a State of California designated seismically-induced landslide hazard zone. Also, subsurface exploration revealed adversely oriented bedding conditions for westerly facing slopes and some relatively shallow existing landslides within the site. These occurrences could create potentially unstable slopes if mitigative measures are not performed. Such measures would typically involve grading to remove potentially unstable geologic features and replacement with engineered fill. Recommendations intended to mitigate the potential effects of the adverse bedding conditions and landslides should be presented in the design phase geotechnical report.

Geotechnical Feasibility

This firm concludes the development of the subject project site is feasible from a geotechnical engineering and engineering geology standpoint and that the potential for substantial risk to life or property can be mitigated to an acceptable level for this project. These conclusions are based on our understanding of the project scope, our review of the referenced literature, the results of our subsurface investigation and is contingent upon the project geotechnical consultant's recommendations being implemented into the design and construction of the project and compliance with applicable grading and building codes.

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UPDATED GEOTECHNICAL EIR-LEVEL ASSESSMENT
BOUQUET CANYON PROJECT, TENTATIVE TRACT MAP 82126
SOUTHERLY ADJACENT TO BOUQUET CANYON ROAD AT COPPER HILL DRIVE
CITY OF SANTA CLARITA, LOS ANGELES COUNTY, CALIFORNIA

INTRODUCTION

The following EIR-level geotechnical assessment report presents our findings and opinions with respect to the geotechnical feasibility of the proposed project and geotechnical constraints that may have an impact on the development of the subject property. This evaluation is based on our review of published geotechnical maps and literature pertinent to the area of the subject site, subsurface investigation, and our previous experience with similar projects in the area. The proposed project included under the purview of this report is based on the 120-scale Preliminary Grading Exhibit, Tentative Tract 82126 prepared Sikand Engineering Associates, Inc. (Sikand) and dated April 5, 2019

PURPOSE AND SCOPE OF SERVICES

The purpose of this study is to collect the required regional and site-specific geotechnical data in order to provide an assessment of potential geologic and seismic-related constraints that may affect the development as currently proposed. The results of our assessment, as well as preliminary mitigation measures intended to reduce the impact of the identified geologic constraints, are provided in this report.

This study has been performed in general accordance with relevant provisions of the California Environmental Quality Act (CEQA) of 1970, and the statute and guidelines for implementation of CEQA (AEP, 2018) as amended. In preparing this report, our scope of services has included the following:

1. Review of readily available published and unpublished literature and maps pertaining to regional faulting, seismic hazards and soil and geologic conditions within and adjacent to the site that could have an impact on the proposed development.

2. Reconnaissance of the subject site and surrounding areas.

3. Excavating and logging 16 backhoe test pits (TP-1 through TP-16) to depths ranging from roughly 3 to 16 feet at the base of natural slopes that are superjacent to proposed pads. These pits were used to evaluate the thickness of soil and weathered bedrock.

4. Drilling, sampling and logging of 15 hollow stem borings (HS-1 through HS-15) to depths ranging from roughly 20½ to 66½ feet below existing grades. These borings generated subsurface information so that project unsuitable material removal recommendations could be evaluated.

5. Drilling 15 flight auger borings (FA-1 through FA-15) to depths of roughly 16 to 80 feet below existing grade. The borings were sampled and downhole logged by an engineering geologist. Information from the flight auger borings has been utilized to aid in modeling site geologic structure.

6. Advancement of 7 CPT soundings (CPT-1 through CPT-7) to depths of approximately 21 to 46 feet below existing grades. The CPT soundings have been utilized to evaluate liquefaction potential and provide soils engineering data to help formulate removal recommendations.
7. Performing laboratory analysis on soil samples, typically including determination of in-situ dry density and optimum moisture content; shear strength, consolidation characteristics, expansion potential; soluble sulfate and chloride content, and general soil corrosivity (pH and minimum resistivity).
8. Engineering and geologic analyses of the collated data as they pertain to the proposed construction.
9. Evaluation of faulting and seismicity of the region and the possible impact of regional seismicity on the site and the proposed construction.
10. Analysis of settlement/consolidation characteristics of near surface materials and the potential impact on the site and proposed construction.
11. Evaluation of the global and surficial stability of both natural and proposed slopes and the potential impact on the site and proposed construction.
12. Preparation of this report presenting our findings, conclusions and recommendations.

LOCATION AND SITE DESCRIPTION

The study area is located on the east/south side of Bouquet Canyon Road at the easterly terminus of Copper Hill Drive. The frontage along Bouquet Canyon Road is approximately 0.7 miles. The accompanying Site Location Map (Figure 1) depicts the areal limits of the site. The Joseph Scott Detention School is located on the northeast property limits and open space/undeveloped land abuts the eastern and southern property limits. The southernmost portion of the site is superjacent to a commercial center/parking lot. The site comprises approximately 90± acres and is characterized by a prominent north/south trending ridgeline on the western portion of the site and the broad, flat plain of Bouquet Canyon in the central and northeastern portions. The active stream channel of Bouquet Canyon crosses the northern portion of the site. Spur ridges and intervening tributary drainages are located along the southern boundary. The majority of the site is covered with low height grass and shrubs. Numerous large trees and shrubs are located in the northern portion of the site along the existing stream channel. Topographically, the central and northern portions of the site are relatively flat with a slight gradient toward the active stream channel. The slopes that descend from the main ridgeline vary in gradient from approximately 3:1 horizontal to vertical (h:v) to 1½:1. The highest natural slope is approximately 150± feet and overall site topographic relief is on the order of 200± feet.

An existing residence consisting of a one-story dwelling and several secondary structures/sheds is located in the northwest portion of the site. Access to this residence, which is not a legal part of the subject tract, is via a dirt/asphalt road from Bouquet Canyon Road.

REGULATORY ENVIRONMENT

The proposed project considered in this report is regulated by the local permitting agency, the Department of Building and Safety of the City of Santa Clarita. Prior to issuing grading and building permits, the City is tasked with ensuring that that grading and structural design is in compliance with applicable provisions of the state and local regulatory standards listed below.

California Building Code (CBC)

The California Building Code (Title 24 of the California Code of Regulations) provides the regulatory framework for building code enforcement within the City of Santa Clarita. The various requirements contained within the CBC are based on the International Building Code and are intended to provide minimum standards to protect public property and welfare by regulating the design and construction of excavations, structural foundations and building framing systems to mitigate the effects of strong ground shaking and adverse soil conditions. By order of the California legislature, the CBC is published by the California Building Standards Commission every three years. The regulations contained in each revision take effect 180 days after the publication date. As of the date of this report, the current revision of the CBC (2016) that is being enforced by the City of Santa Clarita was adopted on January 1, 2017.

California Alquist-Priolo Earthquake Fault Zoning Act

In December 1972, the State legislature enacted the Alquist-Priolo Earthquake Fault Zoning Act which directed the State Geologist to begin compiling maps of known surface traces of active faults within the urbanized areas of California. The intent of this law was to improve earthquake safety by prohibiting the construction of buildings intended for human occupancy across the traces of known active earthquake faults. The term "Earthquake Fault Zones" refers to areas established by the California Geologic Survey (CGS) wherein comprehensive geologic investigations are required in order to demonstrate that locations designated for new construction are not traversed by active fault traces. The Alquist-Priolo Earthquake Fault Zoning Act also requires property owners or their representatives to disclose whether or not their property is situated within an established Earthquake Fault Zone prior to selling the property. Local regulatory agencies (such as city- or county-level building departments) are responsible for local implementation of the Act and must regulate development projects within the zones.

California Seismic Hazards Mapping Act

As a further means to protect public safety and property from seismic hazards, the California legislature adopted the Seismic Hazards Mapping Act in 1990. In contrast to the Alquist Priolo Act, the Seismic

Hazards Mapping Act specifically addresses potential hazards posed by secondary effects of seismic activity including strong ground shaking, soil liquefaction and associated ground failure, and seismically-induced landslides. Maps showing zones of required investigation for one or more of these hazards are prepared and published by the California Geologic Survey and, like the Alquist-Priolo maps, are available to the public via an online resource. Inclusion within a designated seismic hazard zone does not necessarily indicate that such hazards have been confirmed within the zone, but only that the prevalent soil and groundwater conditions within the zone render the area susceptible to the hazard. The local jurisdictional (i.e., the city or county permitting agency) is responsible for ensuring that the required site-specific geotechnical investigations have been performed for construction projects proposed within these seismic hazard zones.

PROPOSED CONSTRUCTION AND GRADING

Project Design

Based on the grading exhibit provided by Sikand it is our understanding that the proposed development will consist of 375 residential dwellings with 200 being single-family, detached units and the remainder 175 being attached residential dwellings. The project will include two recreation centers, a tot lot and three water quality detention basins. Associated exterior improvements are expected to include asphalt-paved access streets, concrete driveways and pedestrian sidewalks, surface drainage controls, perimeter fencing, common landscaped areas, extensive underground infrastructure, and required storm water quality devices.

Proposed Grading

Standard cut and fill grading techniques will be used to accommodate the proposed development. Both cut and fill slopes are designed to slope ratios of 2:1(horizontal:vertical) or flatter. The highest proposed 2:1 cut and fill slopes are approximately 170± feet and 50± feet, respectively. The maximum depth of planned cut is roughly 120± feet, while the maximum depth of planned fill is on the order of 50± feet.

Structural details for the proposed structures have not, as yet, been provided to this firm. It is anticipated that the detached and attached single-family residences will be one-, two-, and possibly three-story wood frame structures with slabs constructed on grade. For this type of construction, it is anticipated that relatively light foundation loads will be imposed on the subgrade soils.

INVESTIGATION PROGRAM

Petra's scope of geotechnical services included performing a subsurface exploration program intended to characterize subsurface conditions within the project site. Details pertaining to our field methodology are presented in the following sections.

Subsurface Exploration

In October and November of 2018, 15 flight auger borings (FA-1 through FA-15), 16 backhoe test pits (TP-1 through TP-16), 15 hollow-stem borings (HS-1 through HS-15), and 7 Cone Penetrometer Test (CPT) soundings (CPT-1 through CPT-7) were excavated/advanced across the site. In addition, two borings (P-1 and P-2) were advanced for use in percolation testing that was performed to evaluate the permeability of the underlying soils for two of the water quality basins. Boring, test pit and CPT locations are shown on the accompanying Geotechnical Map (Plate 1). The excavations were visually logged by an engineering geologist with this firm and material samples were taken of representative site soils and bedrock. Earth materials were classified and logged in accordance with Unified Soil Classification System procedures. Descriptive boring and test pit logs are presented in the appendix of this report.

FINDINGS

Regional and Local Geologic Setting

Regional Physiographic Setting

The site is located in the Soledad basin which is a northeast trending alluvium filled valley in the Transverse Range Geomorphic Province. The basin is bound on the north, east and west by mountainous ridgelines that are composed of sedimentary rocks underlain by a crystalline core. The sedimentary rocks are thousands of feet in thickness and have been uplifted and folded into a synform whose axis is subparallel to the basins northeasterly trend. The San Gabriel fault zone forms the southwest boundary of the Soledad basin and at its closest is about 3.5 miles southwest of the site.

Local Geology and Subsurface Conditions

The distribution, thicknesses and characteristics of near-surface soils in the Santa Clarita area have been previously mapped by other investigators at a scale of 1:48,000 for purposes of seismic zonation. Based on our review of published maps, the local area is underlain by sedimentary bedrock consisting sandstone, siltstone and to a lesser extent claystone. These rocks are exposed in several locations in the general site locale. The bedrock is mantled by varying thicknesses of soil and alluvial deposits and to a lesser extent landslide debris.

Based on the log of test pits and borings, bedrock underlies the site and is mantled by soil/alluvial materials in the valley/tributary areas. Soils are generally less than 2 to 3 feet in thickness while alluvium varies in thickness from a few feet to greater than the depths explored (66½± feet). These materials are generally described as silty, fine- to medium-grained sands that are gray to brown, dry to moist, and loose to dense. Varying amounts of clay and gravel were also noted within the sandy portions of the alluvium. Landslide debris/deposits have been mapped on lower portions of natural slopes. These features are relatively minor and localized. Depths ranged from 5 to 10 feet to as much as 21± feet. Landslide material is derived from the bedrock materials and consists of loose/broken sandstone and siltstone layers. Bedrock on site consists of the Castaic and Saugus Formations. The Castaic underlies the majority of the site and is exposed on the northern and central portions of the main ridgeline. This unit typically consists of silty to fine-grained sandstone, calcareous sandstone, siltstone, shale and mudstone. Bedding ranges from well-developed to massive. These rocks are poorly to very well cemented. These materials were deposited in a relatively shallow marine environment as turbidities and inter-channel sediments, and often exhibit fold strata, rip-up clasts and scour/fill features. The Saugus Formation underlies the southern portion of the site and is exposed on the steeper natural slopes of the main ridgeline. This unit typically consists of fine- to coarse-grained sandstone, pebble to cobble conglomerate and conglomeratic sandstone. Occasional beds of well-indurated to well-consolidated reddish brown to greenish gray siltstones and claystones (mudstones) are present. Bedding is moderately to poorly developed to discontinuous or indistinct with some cross-bedding and scour/fill features. These rocks are generally poorly to moderately cemented, with some beds near the lower contact with the underlying Castaic Formation being very well cemented. The Saugus Formation is considered to be a portion of a large ancient alluvial fan complex.

Local Groundwater Conditions

The site is located on the periphery of the East Sub Basin of the Upper Santa Clara River Groundwater Basin. Information pertaining to the occurrence of groundwater within the local area has primarily been obtained from borehole logs prepared during installation of the water wells throughout the area. In general, ground water occurs in at least two distinct bodies; in downward succession. These are: 1) a body of semi-perched water that occurs within the lowermost portion of the recent alluvium; and 2) in nearly all deposits of Pleistocene age and some Pliocene rocks. Of interest with respect to development of the site is the body of semi-perched groundwater occurring within the upper portions of Holocene-age alluvial sediments.

The extent of shallow semi-perched groundwater in the area of the subject site is described in general terms in the referenced Seismic Hazard Zone report for the Mint Canyon quadrangle published by the California Division of Mines and Geology (CDMG, 1998). Based on information provided in that report, the subject

property is located where shallow groundwater (i.e., groundwater existing at a depth of 40 feet or less below the ground surface) would typically be expected to occur. The figures included in the Seismic Hazard Zone report indicate that the historical high groundwater depth for the site varies from approximately 40 to 10 feet below the surface. The shallow depths are indicated in isolated areas of the active drainage channel of Bouquet Canyon. The recent field investigation, which included 15 borings within the alluvial sediments, indicates that groundwater levels are significantly lower than reported in the literature. Shallow, near surface groundwater was not encountered in/near the active drainage channel. Two water levels were measured at depths of 45 and 50 feet below ground surface. These levels indicate that groundwater, when extant, is located at or near the bedrock contact (i.e. at the base of the alluvial section). Given these conditions, groundwater is not anticipated to affect the proposed development. It should be noted that the depth of groundwater is representative of the date and time that our investigation was performed, and that this level is likely to fluctuate in response to seasonal changes.

Tectonic Setting

Regional Surface Fault Systems

The geologic structure of Southern California is dominated by northwest-trending faults associated with the San Andreas system. Faults such as the Newport-Inglewood, the Whittier-Elsinore, the San Jacinto, and various segments of the San Andreas Fault itself are all major faults associated with this system. They are all known to be seismically active, and most are known to have ruptured the ground surface in historic time. Also within the southern California region are a number of west-trending, low-angle reverse (thrust) faults that are similarly active. The majority of these faults occur as north-dipping planes which trend along the south-facing flanks of the Transverse Ranges. Among the known active thrust faults in the region include the Cucamonga, Sierra Madre, Santa Monica, and Hollywood faults.

Concealed Faults

Another category of fault known as the "blind thrust" became recognized as a significant seismic hazard as a result of the 1987 moment magnitude (Mw) 6.0 Whittier Narrows earthquake. Blind thrusts are concealed beneath the earth's surface and are defined as dip-slip faults that tend to fold and/or uplift the near surface sediments during moderate to large magnitude earthquakes (Shaw and Suppe, 1996). In 1994 the Mw 6.7 Northridge earthquake occurred along what researchers have interpreted as a south-dipping thrust ramp beneath the San Fernando Valley. Together, these events caused more than $25 billion in property damage and clearly demonstrate the risks that blind thrusts pose to the greater Los Angeles metropolitan area.

Recent structural models of the Los Angeles basin suggest that deep-seated, blind thrust sheets underlie portions of Orange and Los Angeles Counties. These structures are apparently accommodating north-south compression with slip rates of several millimeters per year (Hauksson, 1992; Petersen and Wesnouski, 1994). The Puente Hills and Upper Elysian Park blind thrust systems represent two such blind thrusts that are reported in the general vicinity of the site (Dolan et al, 2003, Shaw et al, 2002, and Oskin et al 2000). Structural models and seismicity values for these three blind thrust systems and the Northridge blind thrust have been incorporated into the California Geological Survey seismic model, which was updated in April 2003 (Cao, et al., 2003).

Nearby Seismic Sources

Published geologic maps and literature indicate that the site lies within 50 kilometers of a number of significant active and potentially active faults that are considered capable of generating strong ground motion at the subject site. The names and locations of these faults relative to the subject property are provided in Table 1. The locations of these faults are graphically depicted on Figure 5.

TABLE 1

Significant Nearby Seismic Sources

Fault Name	Approximate Distance/ Direction From Site	Source Type[1]	Slip Rate (mm/yr)[2]	Maximum Magnitude[3,4]
San Gabriel	5.75 kilometers southwest	B	1.0	7.4
Holser, alt 1	7.02 kilometers southwest	B	0.4	6.8
Holser, alt 2	8.40 kilometers southwest	B	-	7.6
Santa Susan, alt 2	11.70 kilometers southwest	B	5.0	7.1
Northridge Hills	11.79 kilometers southwest	B	-	7.7
Northridge	12.38 kilometers southwest	B	1.5	6.9
Santa Susana, alt 1	14.93 kilometers southwest	B	5.0	6.9
Sierra Madre Connected	17.36 kilometers southwest	B	2.0	7.3
Sierra Madre (San Fernando)	17.36 kilometers south	B	2.0	6.7
Oak Ridge Connected	22.38 kilometers west	B	3.6	7.4
Oak Ridge (Onshore)	22.38 kilometers west	B	4.0	7.2
Verdugo	22.85 kilometers southwest	B	0.5	6.9
San Andreas – Mojave	23.65 kilometers northeast	A	>5.0	8.0
S. San Andreas; SM	23.58 kilometers northeast	A	29.0	7.3
San Cayetano	25.07 kilometers south	B	6.0	7.2

Fault Name	Approximate Distance/ Direction From Site	Source Type[1]	Slip Rate (mm/yr)[2]	Maximum Magnitude[3,4]
Simi – Santa Rosa	25.54 kilometers southwest	B	1.0	6.9
S. San Andreas; NM	36.63 kilometers northeast	A	27.0	7.0

Notes: 1) As classified according to 2001 California Bu ilding Code Table 16-U.
2) Per CGS 2002 fault data file (Cao et al, 2003).
3) Moment Magnitude (Mw).
4) 2008 USGS fault file (EZ-FRISK 2010)

Based on a review of published geotechnical maps and literature pertaining to regional faulting, the closest known fault considered capable of causing strong ground motion at the subject site is the San Gabriel fault. Located approximately 3½ miles southwest of the subject site, the San Gabriel fault is a right-lateral strike slip fault which trends to the northwest from the San Gabriel Mountains to the Ridge Basin near the Sierra Pelona - San Emigdio Mountains. Published investigations reveal that this fault offsets Holocene stratigraphy. For this reason, this fault is considered active and is included within the boundaries of an Alquist-Priolo Earthquake Fault zone.

Historical Seismicity

As is the case with most locations in Southern California, the subject site is located in a region that is characterized by moderate to high seismic activity. The project site and vicinity have experienced strong ground shaking due to earthquakes on a number of occasions in historic time. Some of the more significant historic seismic events for which ground motion data are available are listed in Table 2, along with the corresponding approximate epicentral distances to the subject site.This data is obtained from the USGS Earthquake Hazards website page, https://earthquake.usgs.gov/hazards/interactive/. The locations of selected earthquake epicenters with respect to the subject site are shown graphically on Figure 5.

TABLE 2

Notable Historical Earthquakes (M>5.5) within 100 kilometers of Project

Date	Location	Magnitude
1994	7km NNE of Simi Valley	5.6
1994	1km ENE of Granada Hills	5.9
1994	1km NNW of Reseda	6.7
1992	12km NW of California City	5.7
1991	13km NNE of Sierra Madre	5.8
1990	6km NNE of Claremont	5.5
1987	2km SSW of Rosemead	5.9
1971	10km SSW of Agua Dulce	5.8
1971	10km SSW of Agua Dulce	5.8
1971	10km SSW of Agua Dulce	6.6
1952	14km NNW of Tehachapi	5.6
1952	19km N of Tehachapi	5.6
1952	22km N of Tehachapi	5.6
1952	6km SSE of Arvin	5.5
1952	13km ENE of Grapevine	5.6
1952	13km WNW of Grapevine	5.8
1952	6km WNW of Grapevine	7.5
1926	Southern California	5.5
1916	Southern California	5.5
1916	Central California	6.0
1899	Southern California	6.4
1894	Southern California	5.9
1893	Santa Barbara Channel	5.5
1855	Greater Los Angeles area	6.0

Notes: [1] Maximum free-field site accelerations based on published accelerogram data for USGS CSMIP Station No. 707, located approximately 2.8 kilometers southwest of the subject site.

[2] Maximum site acceleration based on the published accelerogram data for CGS CSMIP Station No. 13079, located approximately 5.6 kilometers north of the subject site.

[3] Maximum site acceleration based on the published accelerogram data for CGS CSMIP Station No. 13326, located approximately 2 kilometers southwest of the subject site.

[4] Site acceleration was estimated based on the results of a computerized database search using a software application developed by T.F. Blake (Eqsearch V3.0, 2000). For purposes of the computerized site acceleration estimates, the attenuation relationship developed by Bozorgnia, Campbell and Niazi (1999) for hard rock sites was considered appropriate.

[5] Based on Wald et. al, 1999.

Active Fault Zonation

No portion of the area of proposed construction is located within the boundaries of an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act (Hart and Bryant, 1997). The nearest "active" fault is the San Gabriel Fault which is located approximately 3½ miles to the southwest of the site. On the basis of our review of the current revision of the Local Hazard Mitigation Plan of the City of Santa Clarita, no active faults have been identified onsite.

Secondary Seismic Hazard Zonation

Based on our review of the published Seismic Hazard Zone Report for the USGS Mint Canyon 7.5-minute quadrangle (CDMG, 1998), portions of the site lie within a designated Liquefaction Hazard Zone and also within an Earthquake Induced Landslide Hazard Zone.

Seismically-Induced Flooding

The types of seismically induced flooding which may be considered as potential hazards to a particular site normally include flooding due to a tsunami (seismic sea wave), a seiche, or failure of a major reservoir or other water retention structure upstream of the site. Since the site is more than 50 kilometers inland from the Pacific Ocean the probability of flooding from a tsunami is considered nil.

Bouquet Reservoir is located approximately 15 kilometers north of the site. As per the City of Santa Clarita Local Hazard Mitigation Plan, the site is located in a Dam Inundation Zone. A seismically-induced failure when the dam basin is filled to capacity could impact the project. In recognition of this possibility, the City has adopted measures which govern development in Flood Inundation Zones which are addressed in the Local Hazard Mitigation Plan.

Flooding Not Related to Seismicity

As part of this investigation, we conducted an independent review of the applicable FEMA flood insurance rate map for the area of the subject site (FEMA, 2008). This map indicates that portions of the project site are located within an area that is designated as having one or more of the following conditions:

- Located within an area having a 1 percent annual chance of flooding. (FEMA Zone A).
- Located within an area having a 1 percent annual chance of flooding with an average floodwater depth between 1 and 3 feet. (FEMA Zone AO).
- Located within an area of undetermined, but possible flood hazard. (FEMA Zone D).

DEFINITION AND USE OF SIGNIFICANCE CRITERIA

This section provides an evaluation of the potential impacts of the proposed project with regard to geologic and geotechnical features and processes. The guidelines provided in the following three publications served as a basis for identifying potential impacts.

1. California Environmental Quality Act Appendix G (Environmental Checklist Form), Section VI (Geology and Soils).
2. City of Santa Clarita Local Hazard Mitigation Plan.
3. California Division of Mines and Geology Note 46, "Guidelines for Geologic/Seismic Considerations in Environmental Impact Reports" (currently in revision).
4. Criteria established by the National Environmental Protection Act and the California Environmental Quality Act were also used to evaluate potential geologic impacts.

Generally speaking, geological and seismological impacts occur as two basic categories: natural events which may occur whether or not the project advances to the construction phase, and impacts that occur as a direct result of construction of the project. Examples of the former include fault displacement, earthquake shaking, liquefaction, and landslides. These can often be reduced to a level of insignificance through avoidance or by proper engineering design. Examples of potential geological impacts that can occur as a result of project construction are typically related to disturbance of surficial geologic formations and include induced hydroconsolidation of collapsible soils, induced slope instability, and increased soil erosion. Regardless of whether the impact is due to a natural event or a direct result of the proposed development, Appendix G of the CEQA Guidelines states that implementation of the project would result in a significant impact if one or more of the following conditions is anticipated:

1. The project will expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence from a known fault;
    b. Strong seismic ground shaking;
    c. Seismically-induced ground failure, including liquefaction; and
    d. Landslides.
2. The project results in substantial soil erosion or the loss of topsoil.

3. The project is located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

4. The project is located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life and property.

5. The project is underlain by soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

SITE-SPECIFIC GEOLOGIC IMPACTS AND MITIGATION MEASURES

The following paragraphs provide our assessment of the potential geologic impacts of the proposed project in consideration of the significance thresholds described above. This assessment is based on our review of available geologic literature and maps, as well as our subsurface investigation, laboratory testing and engineering analysis completed to date. Specific impacts are ranked as less than significant and potentially significant. Proposed mitigation measures are provided where appropriate that, in the opinion of this firm, would reduce the effect of potentially significant impacts to a less than significant level.

Impact No. 1(a) - Surface Fault Rupture

Level of Significance: Less than Significant

Discussion:

No portion of the area of proposed construction is located within the boundaries of an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act (Hart and Bryant, 1997). The site is, however, located approximately 3½ miles to the northeast of the earthquake fault zone that has been established around the active traces of the San Gabriel fault.

A fault feature has been described in Boring FA-10. Given the existing database, it is not possible to definitively characterize the activity level of this feature. The likelihood that structure setbacks would be required is considered low and therefore the project design from an EIR perspective will not be impacted. For planning purposes, the general locale surrounding Boring FA-10 has been designated as a Restricted Use Area (See Plate 1). This RUA should be further evaluated at the Tentative Map stage.

Impact No. 1(b) - Strong Ground Motion

Level of Significance: Potentially Significant

Discussion:

The subject site is located in seismically active southern California. The type and magnitude of seismic hazards that may affect the site are dependent on both the distance to causative faults and the intensity and duration of the seismic event. Although the probability of primary surface rupture is considered very low, ground shaking hazards posed by earthquakes occurring along regional active faults do exist and should be considered in the design and construction of the proposed structures within the subject site.
Given its proximity to the site, the San Gabriel Fault (approximately 3½ miles to the southwest) would be considered the causative fault and is expected to generate the most significant ground motions at the site.

Proposed Mitigation:

The proposed structures within the site should be designed and constructed to resist the effects of seismic ground motions as provided in the applicable portions of the 2016 CBC. Earthquake loads on earth and super-structures are a function of the ground acceleration, which may be determined from the site-specific acceleration response spectrum. Seismic parameters to construct acceleration response spectrum for analysis and design of structures may be determined in accordance with the provisions of Section 1613 of the 2016 CBC, which incorporates the 2010 version of the American Society of Civil Engineers (ASCE) document, "Minimum Design Loads for Buildings and Other Structures", (ASCE/SEI 7-10).

Provided that the structures proposed within the site are designed and constructed in accordance with the current edition of the CBC and the Building Code of the City of Santa Clarita, it is expected that the impacts posed by seismically-induced strong ground shaking at the site will be reduced to a less than significant level.

Impact No. 1(c) – Seismically-Induced Ground Failure

Level of Significance: Potentially Significant

Discussion:

Secondary effects of seismic activity that are typically considered as possible hazards to a particular site include several types of ground failure as well as induced flooding. The general types of ground failure that can occur as a consequence of severe ground shaking include landsliding, ground subsidence, ground lurching, shallow ground rupture, lateral spreading, liquefaction, and soil strength loss. The probability of occurrence of each type of ground failure depends on the severity of the earthquake, distance from the causative fault, topography, soil and groundwater conditions, in addition to other factors.

Of the seismically induced ground failure modes listed above, liquefaction and landsliding are considered to be the primary concerns with respect to the subject site. Proposed mitigation measures for liquefaction, as well as induced flooding resulting from failure or overtopping of Bouquet Reservoir are discussed below. Proposed mitigation for landsliding is discussed later in this report in conjunction with slope stability.

Proposed Mitigation (Liquefaction):

The potential detrimental effects of liquefaction can be reduced to a less than significant level by grading/earthwork that removes and replaces potentially liquefiable soils with non-liquefiable fill soils, utilizing in-situ ground improvement methods that reduce liquefaction potential, designing structural foundations in recognition of potential liquefaction-induced settlement or by performing a combination of the preceding strategies.

The resultant dynamic settlements from our preliminary liquefaction analyses are summarized in the table below. The results indicate that given the proposed grading design, removal of the upper 10 to 25 feet of alluvial soils is sufficient to reduce the potential impacts less than significant. The analyses were performed using the computer program CLiq (v. 3.0.2.1) and assumed a groundwater level at 10 feet below existing ground, except for CPT-3 which is located in the bottom of the new channel and where groundwater was assumed to be at the new ground surface. The liquefaction analyses utilized a magnitude (Mw) 6.85 earthquake and a peak ground acceleration of 0.63g. These magnitude acceleration values correspond to a seismic event with a probability of exceedance of 10 percent in 50 years and were obtained from the USGS Uniform Hazards website page, https://earthquake.usgs.gov/hazards/interactive/. A 10 percent probability of exceedance in 50 years is acceptable for liquefaction analyses per Appendix GS 045.0 of the *Manual for Preparation of Geotechnical* Reports published by the County of Los Angeles, Department of Public Works, Geotechnical and Materials Engineering Division (dated July 1, 2013). A summary report of the liquefaction analyses is included in Appendix B. It should be noted that the dynamic settlement results in Appendix B do not account for the recommended depths of removals as presented on the accompanying Geotechnical Map (Plate 1).

Summary of Liquefaction-Induced Potential Settlement

CPT ID	Design Fill Depth (ft)	Design Cut Depth (ft)	Approximate Unsuitable Soil Removal Depth (ft)	Estimated Liquefaction Induced Settlement Considering Removals (in)
CPT-1	43	--	10	0.2

CPT-2	54	--	20	0
CPT-3	--	5	0	0.7*
CPT-4	33	--	10	<0.1
CPT-5	30	--	10	0.3
CPT-5A	37	--	10	<0.1
CPT-6	34	--	15	0.2
CPT-7	30	--	15	0.5
CPT-P1	4	--	25	1.2
CPT-P2	9	--	15	0.3
CPT-P3	6	--	15	<0.1
CPT-P3B	6	--	15	0.4
CPT-P4	10	--	25	<0.1
* - In new channel bottom, no removals assumed for liquefaction analyses.				

Proposed Mitigation (Induced Flooding from Dam Failure):

The potential detrimental effects of flooding as a result of the failure of Bouquet Reservoir or overtopping from a seismic event can be reduced to a less than significant level by incorporating elements of the City of Santa Clarita Local Hazard Mitigation Plan and FEMA policies and guidelines for areas at risk of flooding into the project design.

Impact No. 1(d) – Slope Instability and Landslides

Level of Significance: Potentially Significant

Discussion:

Portions of the site slope areas are located within a State of California designated seismically-induced landslide hazard zone. Also, subsurface exploration revealed adversely oriented bedding conditions for westerly facing slopes and some relatively shallow existing landslides within the site.

Proposed Mitigation:

Remedial grading should be performed in slope areas where adversely oriented bedding planes exist. The remedial grading would remove the adversely oriented bedrock and replace it with engineered fill materials. Proposed cut grading will likely remove some, if not all, of the existing landslide materials. If the landslide materials are not removed by cut grading, then they should be overexcavated and replaced with engineered fill materials. Provided that remedial and design grading within the site are performed in accordance with local grading ordinances, current standards of practice in the area, and the site-specific recommendations

to be provided by the project geotechnical professional, the potential for gross or surficial slope instability will be reduced to a less than significant level.

Slope stability calculations for the highest proposed cut slope (Section 2-2') and stabilization fill slope (Section 1-1') are presented in Appendix C. The results indicate factors-of-safety in excess of 1.5 and 1.1 for static and pseudo-static conditions, respectively. The following table indicates the shear strengths utilized in the analyses. The values are based on the results of Petra's field investigation and laboratory testing program for the project. Peak values were used for some of the materials in the pseudo-static analyses as indicated in the table below.

Shear Strength Summary

Unit	Ultimate		Peak	
	Friction Angle (deg.)	Cohesion (psf)	Friction Angle (deg.)	Cohesion (psf)
Engineered Fill	27	275	28	325
Saugus Formation – Across Bedding	31	200	--	--
Castaic Formation – Across Bedding	31	200	--	--
-- indicates value not used in analysis.				

Estimated dimensions and geometries for stabilization fills for the westerly facing slopes are depicted on the Geotechnical Map. Additional borings, and laboratory testing will be conducted during the Tentative Map study to further evaluate and refine slope stability recommendations

Impact No. 2 – Soil Erosion

Level of Significance: Potentially Significant

Discussion:

There are proposed slopes of moderate to significant height within the project site; therefore, the potential for erosion and downslope transport of soil material is considered significant. Additionally, under conditions where runoff from precipitation or uncontrolled irrigation is concentrated over an extended period of time, some localized erosion of graded areas could occur that would result in offsite transport of the non-cohesive (sandy) near-surface soils within the site. This would be particularly problematic during the rough grading phase of the project when permanent storm water controls have not yet been constructed.

Proposed Mitigation:

It is expected that the potential impact of localized minor soil erosion will be mitigated to a less than significant level through the implementation of proper storm water Best Management Practices (BMP's) prior to commencement of earthwork operations within the site, as well as diligent maintenance of erosion control devices throughout the early phases of construction until such time as the permanent storm water conveyance system has been constructed and activated. During the post-construction and occupancy period, the less than significant impact of soil erosion would be maintained through permanent storm water conveyance devices and proper maintenance of engineered grades and irrigation systems.

Impact No. 3 – Compressible Near-Surface Soil Units

Level of Significance: Potentially Significant

Discussion:

Our exploratory excavations revealed that the site is mantled by a relatively thin soil/fill layer which is underlain by alluvial soils to approximate maximum depths of roughly 66½± feet or bedrock materials. The upper few feet of the bedrock is weathered/loose. The fill, soil, upper portions of alluvium and weathered bedrock are considered unsuitable for support of the proposed buildings and appurtenant site improvements. These unsuitable materials will require excavation and recompaction in areas where new engineered fills or structures are proposed.

Proposed Mitigation:

In order to support the proposed new engineered fills, structural foundations and exterior site improvements the unsuitable material should be overexcavated and the resultant void should be replaced with engineered fill.

Petra performed consolidation and hydroconsolidation testing as part of the field investigation and laboratory testing program for the proposed development. Based on these test results and considering the proposed fill depths along with the recommended unsuitable material removals, Petra has estimated that the remaining alluvial soils could settle/consolidate up to approximately 4.2 inches under a fill depth of 34 feet in the area of boring HS-12, while settlement of up to roughly 3.6 inches could occur in the area of boring HS-10. Considering the granular nature of the majority of the soil, Petra estimates that approximately 80 percent of this settlement could occur during grading as the fill is placed. This yields a post-grading static consolidation settlement of roughly 0.7 to 0.8 inches for the areas of borings HS-10 and HS-12, respectively.

The hydro-consolidation potential of the soils has also been evaluated. The laboratory test results indicated hydro-consolidation potentials ranging from roughly 0.2 to 1.0 percent with an average of approximately 0.5 percent. The 0.2 and the 1.0 percent hydro-consolidation occurred in samples from HS-10 at depths of 20 and 30 feet, respectively. These values yielded a potential hydroconsolidation settlement on the order of 1.3 inches when the recommended remedial grading was considered. Similar evaluation of the hydro-consolidation test data for the site along with the anticipated remaining alluvial soil in the area of HS-12 indicated a potential hydro-consolidation settlement of 0.7 inches.

The following table summarizes the potential total estimated consolidation, hydro-consolidation, and liquefaction-induced settlements in the area of borings HS-10 and H-12 which are anticipated to have the largest settlements from the combined effects of the aforementioned three phenomena. Estimated differential settlement is also presented.

Summary of Total and Differential Settlements

Location	Design Fill Depth (ft)	Unsuitable Soil Removal Depth (ft)	Post-Grading Consolidation Settlement (in)	Hydro-Consolidation Potential (in)	Liquefaction Induced Settlement (in)	Total Settlement (in)	Differential Settlement Over 30' (in)
HS-10	50	20	0.7	1.3	0.0	2.0	1.0
HS-12	34	15	0.8	0.7	0.2	1.7	0.9

Provided that remedial and design grading within the site are performed in accordance with local grading ordinances, current standards of practice in the area, and the site-specific recommendations to be provided by the project geotechnical professional, it is expected that excessive settlement resulting from compression of unsuitable fill, soil, alluvium and weathered bedrock will be reduced to a less than significant level.

Impact No. 4 – Expansive Soils

Level of Significance: Potentially Significant

Discussion:

The site soils are anticipated to have Expansion Indices (EIs) ranging from less or equal to 20 for sandy soils derived from active alluvial deposits to possibly on the order of 100 or so for soils derived from fine-grained portion of the Castaic Formation. Soils with Expansion Indices greater than 20 are considered expansive in accordance with the 2016 CBC.

Proposed Mitigation:

Recommendations intended to reduce the potential detrimental effects of expansive soils should be provided during the design phase. Testing should be performed during and after grading to evaluate the expansion potential soils present at/near finish grade so that appropriate recommendations can be provided by the geotechnical consultant. Design of building foundations, floor slabs and exterior improvements in consideration of the potential uplift forces that can develop due to expansive soils and incorporation of practices intended to reduce the soil moisture content variations should mitigate the potential detrimental impacts to a less than significant level.

The potential for rock heaving as the result of the chemical reaction and transformation of sulfites to sulfates may be mitigated by overexcavating "at grade" bedrock materials and replacing the void with compacted fill materials. Preliminarily, it is recommended that building pad areas and street rights-of-way, which

expose bedrock materials, be overexcavated a minimum of 5 feet and replaced with compacted fill. Recommendations for structural improvements may also need to be designed for high sulfate conditions. Post grading testing of all structural building pads should be conducted to assess this condition.

Impact No. 5 – Suitability of Site to Support Waste Water Disposal Systems

Level of Significance: Less than Significant

Discussion:

Current development plans for the subject site indicate that the proposed residential dwellings will be served by the local municipal sewer system. Therefore, the use of private on-site septic systems or alternative wastewater disposal systems is not anticipated.

FINAL ANALYSIS AND CONCLUSIONS

Geotechnical Feasibility

This firm concludes the development of the subject project site is feasible from a geotechnical engineering and engineering geology standpoint. This conclusion is based on our understanding of the project scope, our review of the referenced literature, the results of our subsurface investigation and is contingent upon the project geotechnical consultant's recommendations being implemented into the design and construction of the project and compliance with applicable grading and building codes.

Level of Significance of Impacts Following Mitigation

Assuming that the mitigation measures described in this report and the design-phase geotechnical recommendation are fully implemented during the project planning and construction phases, it is the opinion of this firm that the potentially significant geologic and seismic impacts described herein can be reduced to a less than significant level.

REPORT LIMITATIONS

This report is based on the proposed project and geotechnical data as described herein. The materials encountered on the project site and described in other literature are believed representative of the project area, and the conclusions and recommendations contained in this report are presented on that basis. However, soil materials can vary in characteristics between points of exploration, both laterally and vertically, and those variations could affect the conclusions and recommendations contained herein. As

such, observation and testing by a geotechnical consultant during the grading and construction phases of the project are essential to confirming the basis of this report.

This report has been prepared consistent with that level of care being provided by other professionals providing similar services at the same locale and time period. The contents of this report are professional opinions and as such, are not to be considered a guarantee or warranty. This report should be reviewed and updated after a period of one year or if the project concept changes from that described herein.

It should be noted that this geotechnical evaluation does not address possible soil contamination or other environmental issues that may affect the property. Such issues should be addressed by the project environmental consultant.

The information contained herein has not been prepared for use by parties or projects other than those named or described herein. This report may not contain sufficient information for other parties or other purposes.

Should you have any questions, please do not hesitate to call.

Respectfully submitted,
PETRA GEOSCIENCES, INC.

CERTIFIED ENGINEERING GEOLOGIST
THEODORE M. WOLFE
No. CEG 1626
STATE OF CALIFORNIA

Theodore M. Wolfe
Senior Associate Geologist
CEG 1626

Ronald A. Reed
Senior Associate Engineer
GE 2524

REGISTERED PROFESSIONAL ENGINEER
RONALD A. REED
No. 2524
GEOTECHNICAL
STATE OF CALIFORNIA

TMW

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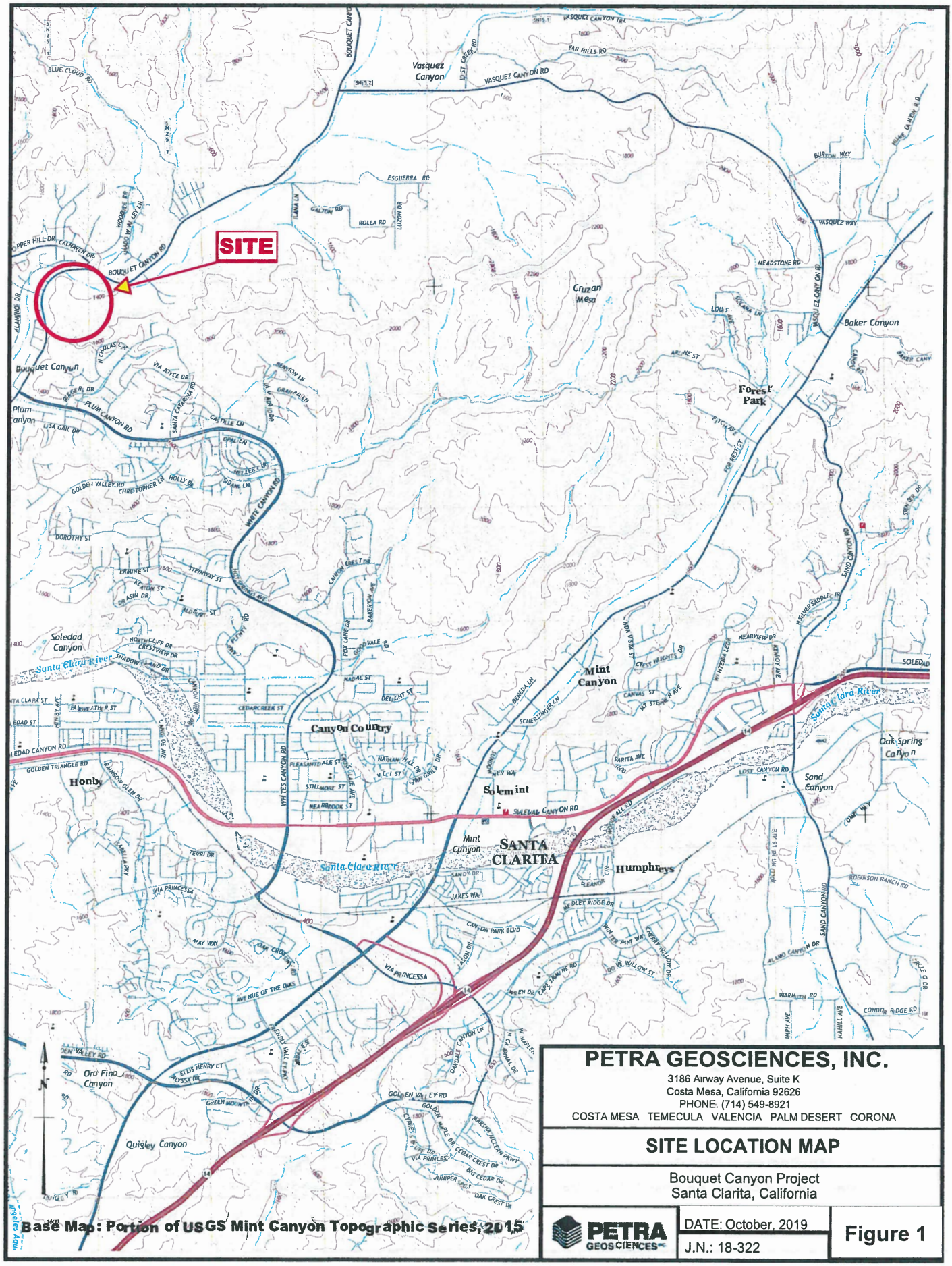

Base Map: Portion of USGS Mint Canyon Topographic Series, 2015

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SITE LOCATION MAP

Bouquet Canyon Project
Santa Clarita, California

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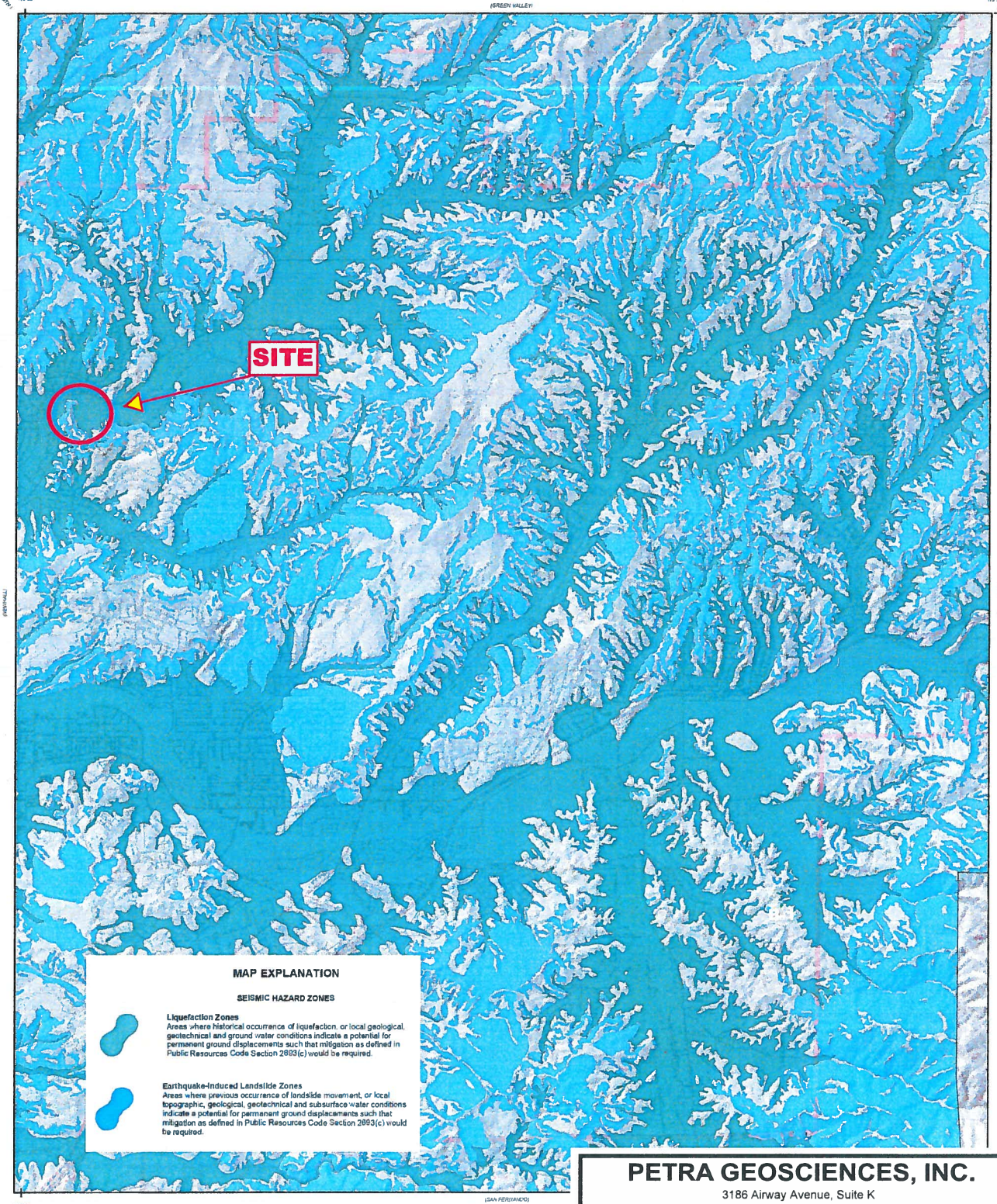
DATE: October, 2019

J.N.: 18-322

Figure 1



Base Map: Portion of Mint Canyon 7.5 Minute Quadrangle
Seismic Hazard Zones, Released March 25, 1999

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SEISMIC HAZARDS MAP

Bouquet Canyon Project
Santa Clarita, California

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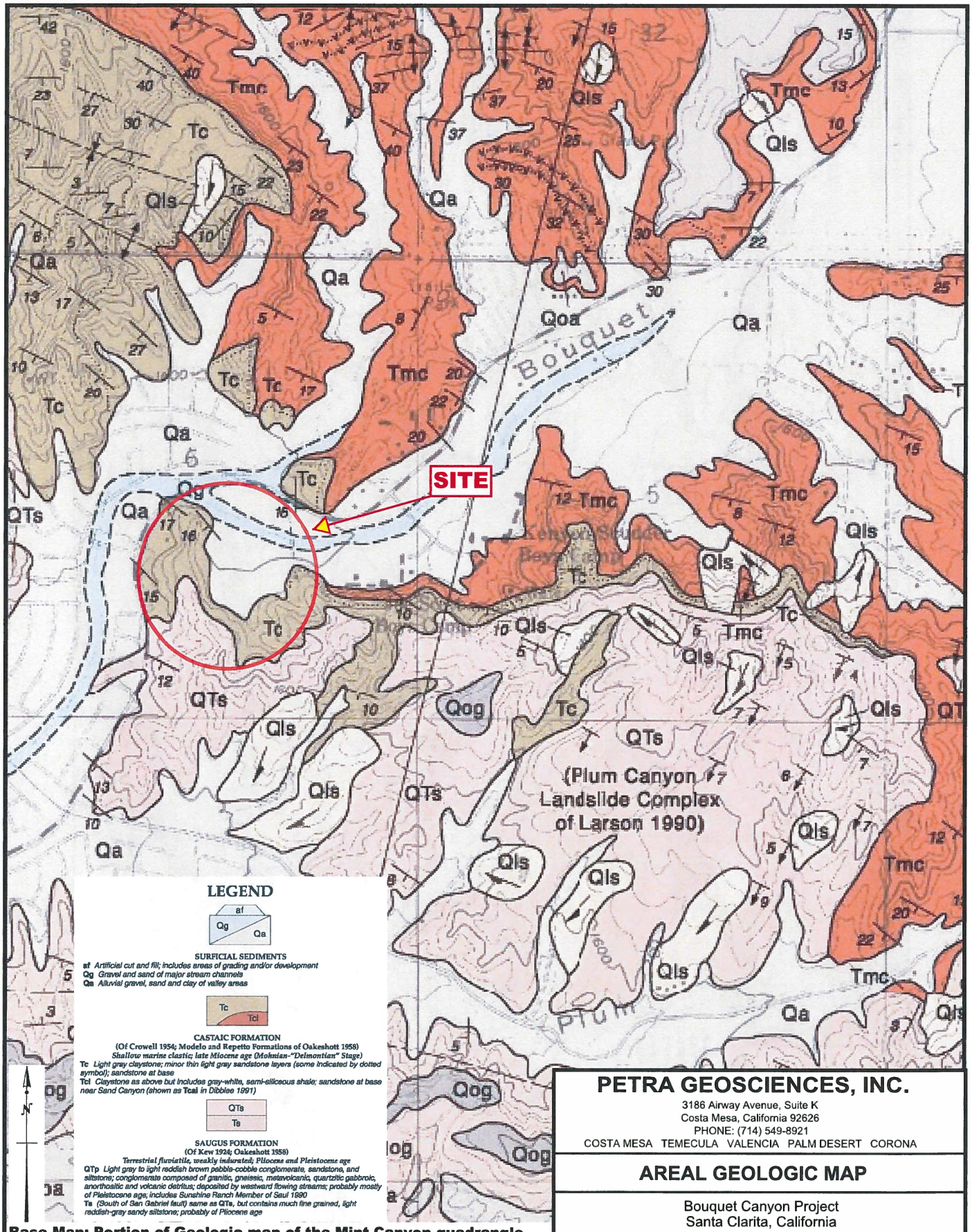
DATE: January, 2019
J.N.: 18-322

Figure 2



Base Map: Portion of Geologic map of the Mint Canyon quadrangle
Dibblee, T.W., and Ehrenspeck, H.E., 1996
From National Geologic Map Database

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AREAL GEOLOGIC MAP

Bouquet Canyon Project
Santa Clarita, California

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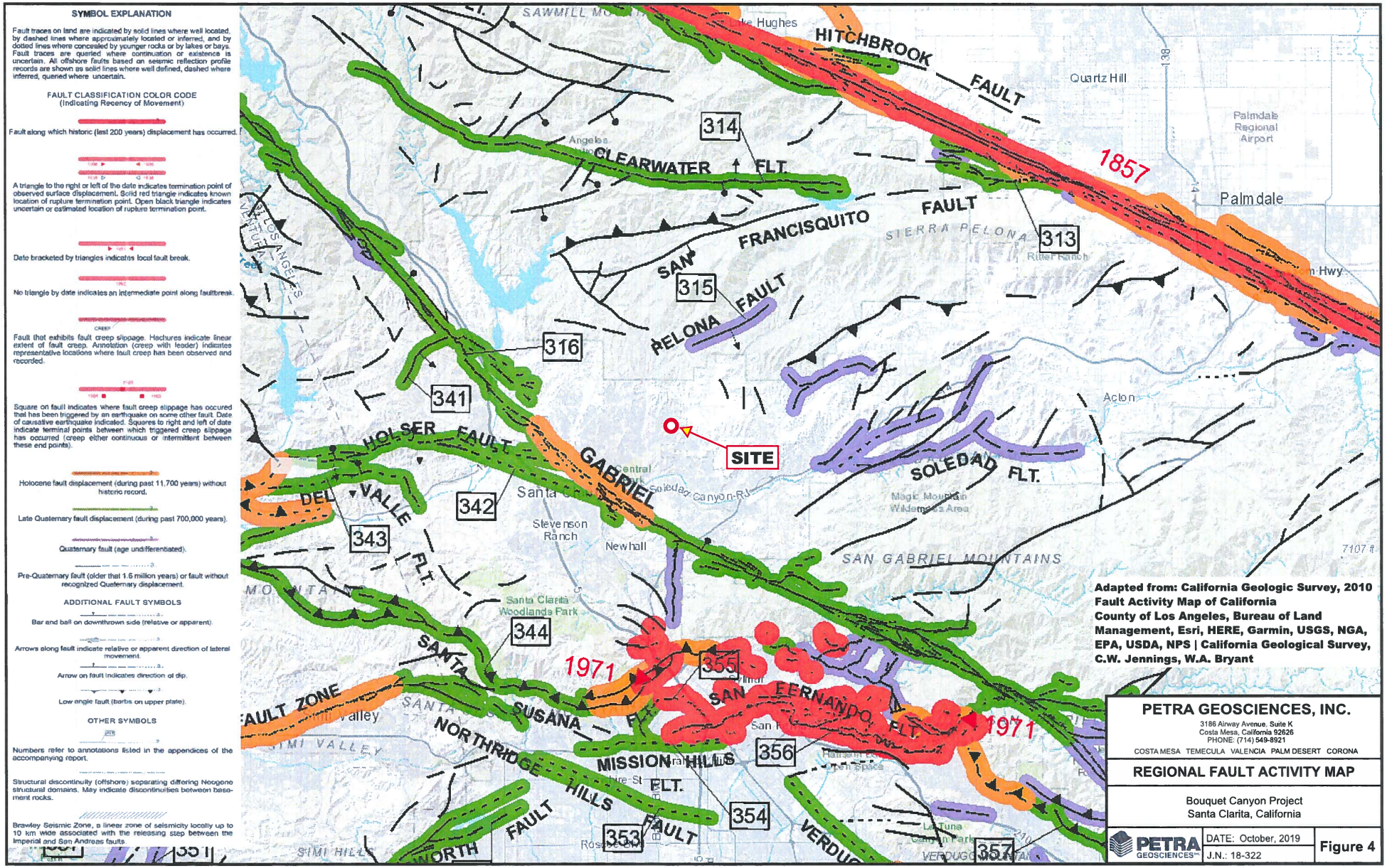
DATE: October, 2019
J.N.: 18-322

Figure 3


SYMBOL EXPLANATION
Fault traces on land are indicated by solid lines where well located, by dashed lines where approximately located or inferred, and by dotted lines where concealed by younger rocks or by lakes or bays. Fault traces are queried where continuation or existence is uncertain. All offshore faults based on seismic reflection profile records are shown as solid lines where well defined, dashed where inferred, queried where uncertain.
FAULT CLASSIFICATION COLOR CODE
(Indicating Recency of Movement)
Fault along which historic (last 200 years) displacement has occurred.
A triangle to the right or left of the date indicates termination point of observed surface displacement. Solid red triangle indicates known location of rupture termination point. Open black triangle indicates uncertain or estimated location of rupture termination point.
Date bracketed by triangles indicates local fault break.
No triangle by date indicates an intermediate point along faultbreak.
Fault that exhibits fault creep slippage. Hachures indicate linear extent of fault creep. Annotation (creep with leader) indicates representative locations where fault creep has been observed and recorded.
Square on fault indicates where fault creep slippage has occured that has been triggered by an earthquake on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate terminal points between which triggered creep slippage has occurred (creep either continuous or intermittent between these end points).
Holocene fault displacement (during past 11,700 years) without historic record.
Late Quaternary fault displacement (during past 700,000 years).
Quaternary fault (age undifferentiated).
Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement.
ADDITIONAL FAULT SYMBOLS
Bar and ball on downthrown side (relative or apparent).
Arrows along fault indicate relative or apparent direction of lateral movement.
Arrow on fault indicates direction of dip.
Low angle fault (barbs on upper plate).
OTHER SYMBOLS
Numbers refer to annotations listed in the appendices of the accompanying report.
Structural discontinuity (offshore) separating differing Neogene structural domains. May indicate discontinuities between basement rocks.
Brawley Seismic Zone, a linear zone of seismicity locally up to 10 km wide associated with the releasing step between the Imperial and San Andreas faults.
HITCHBROOK FAULT
CLEARWATER FLT.
SAN FRANCISQUITO FAULT
PELONA FAULT
HOLSER FAULT
GABRIEL
DEL VALLE FLT.
SOLEDAD FLT.
SAN GABRIEL MOUNTAINS
SANTA SUSANA FLT.
SAN FERNANDO FLT.
NORTHRIDGE HILLS FAULT
MISSION HILLS FLT.
VERDUGO
SITE
1857
1971
1971
314
315
316
313
341
342
343
344
355
356
354
353
357
Quartz Hill
Palmdale
Palmdale Regional Airport
Acton
Santa Clarita
Stevenson Ranch
Newhall
Santa Clarita Woodlands Park
Magic Mountain Wilderness Area
7107 ft
Adapted from: California Geologic Survey, 2010 Fault Activity Map of California
County of Los Angeles, Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS | California Geological Survey, C.W. Jennings, W.A. Bryant
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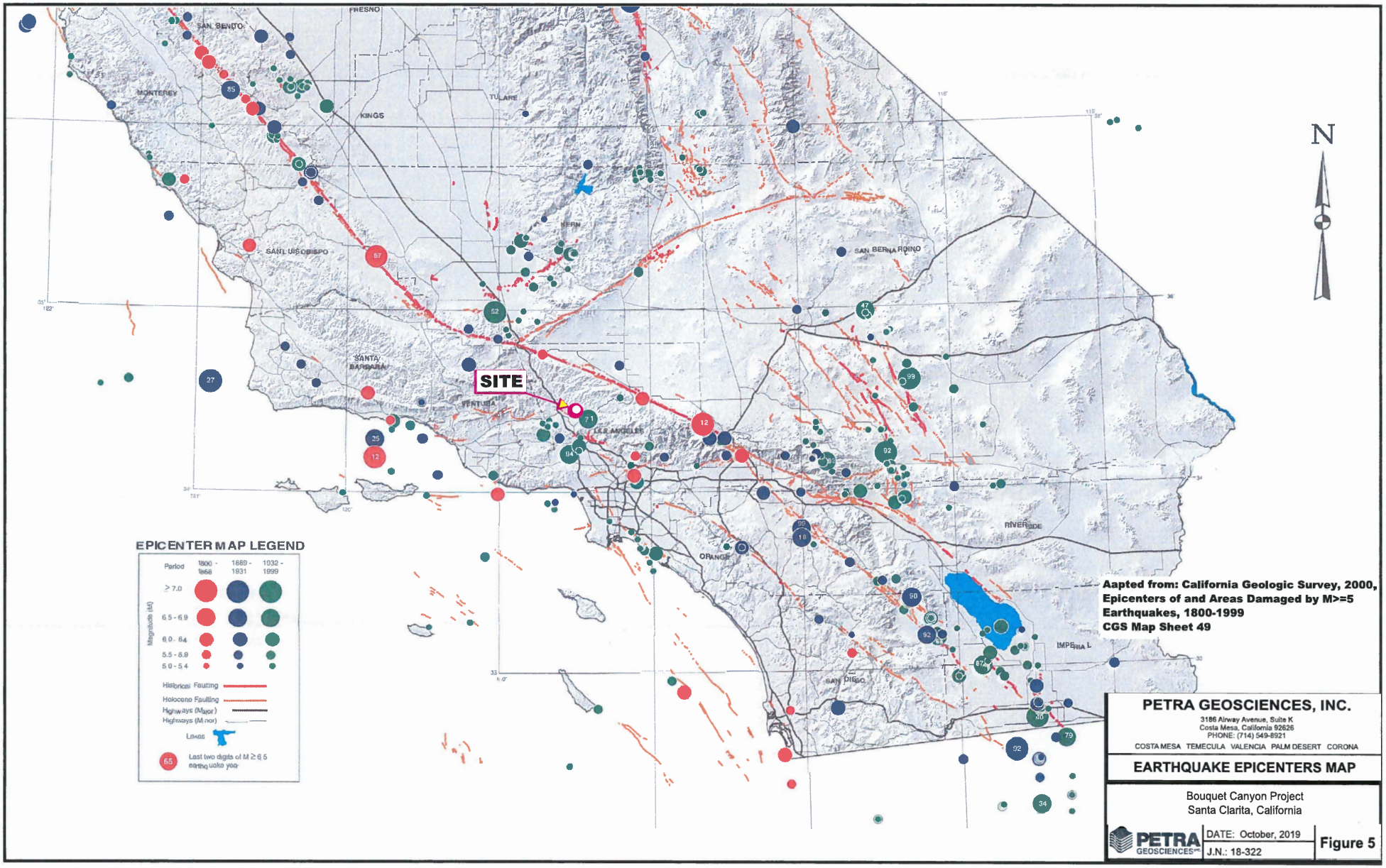
REGIONAL FAULT ACTIVITY MAP
Bouquet Canyon Project
Santa Clarita, California
DATE: October, 2019
J.N.: 18-322
Figure 4



Aapted from: California Geologic Survey, 2000, Epicenters of and Areas Damaged by M>=5 Earthquakes, 1800-1999
CGS Map Sheet 49

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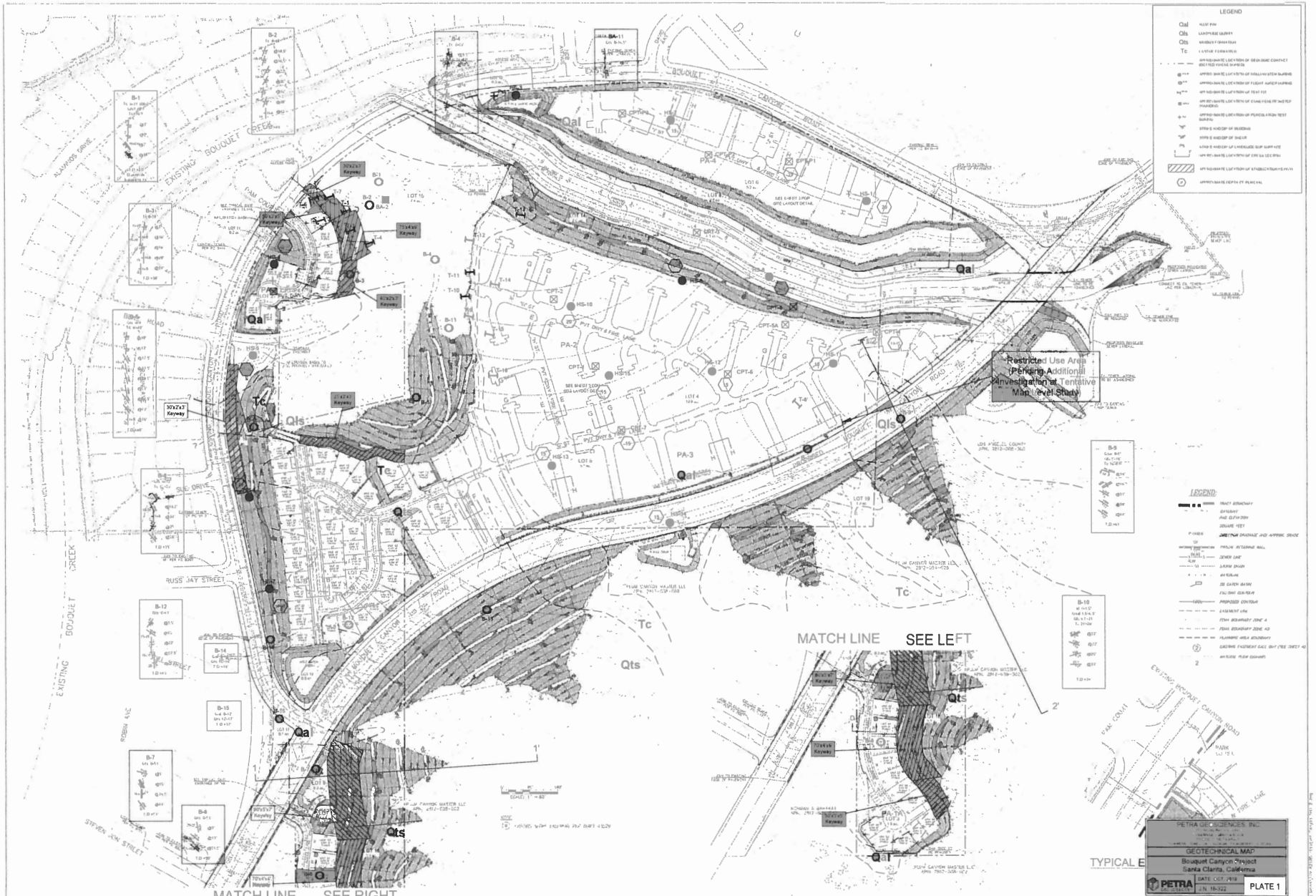
EARTHQUAKE EPICENTERS MAP

Bouquet Canyon Project
Santa Clarita, California

PETRA GEOSCIENCES INC. | DATE: October, 2019 | J.N.: 18-322 | **Figure 5**



PREPARED FOR

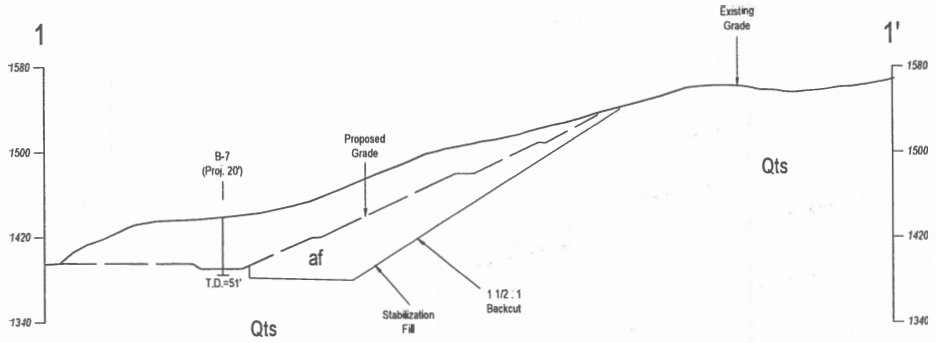
INTEGRAL PARTNERS FUNDING, LLC
888 SAN CLEMENTE DRIVE, SUITE 100
NEWPORT BEACH, CA 92660

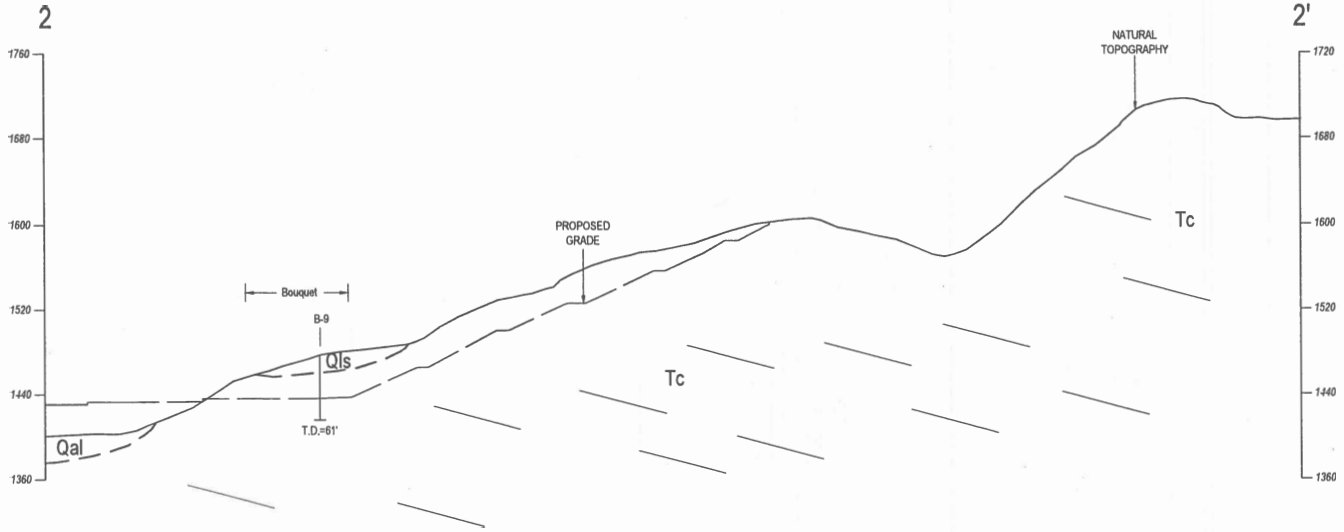
LEGAL DESCRIPTION:

A PORTION OF SECTION 6, TOWNSHIP 4 NORTH RANGE 15 WEST, SAN BERNARDINO MERIDIAN

SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd.
Van Nuys, CA 91411
Tel: (818) 787-8550
Fax: (818) 901-7451
info@sikand.com

VESTING TENTATIVE TRACT MAP NO. 82126





SCALE: 1"=80'

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CROSS SECTIONS 1-1' and 2-2'

Bouquet Canyon Project
Santa Clarita, California

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DATE Oct. 2019

J.N: 18-322

PLATE 2

APPENDIX A

EXPLORATION LOGS
HS-1 through HS-15
FA-1 through FA-15

TEST PIT LOGS
TP-1 through TP-16

CONE PENETROMETER SOUNDINGS
CPT-1 through CPT-7

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-1**
Location: **Santa Clarita**		Elevation:	**±1400**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/12/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Silty Sand (SM): Grayish-brown, dry, loose to medium dense, very fine- to fine-grained sand.							
5		becomes brown, slightly moist, medium dense, fine-grained sand, trace fine-grained gravel, few pores, with roots.		13 16 18	■				
10		becomes gray, dense, few fine-grained gravel (to 0.5").		15 17 20	■	■			
15		Sandy Silt to Silty Sand (SM-ML): Brown, moist, medium dense, fine-grained sand, abundant of pores, rootlets, weakly cemented.		6 7 10	■				
20		with mottled black, less pores.		12 12 15	■				
25		Silty Sand (SM): Light brown, to brown, moist, very dense, fine- to coarse-grained sand, poorly graded, with some fine- to coarse-grained gravell (0.3" to 2"), rock fragments.		20 32 45	■				
30		Sand with Silt and Gravel (SP): Brown, moist, very dense, fine- to coarse-grained sand, poorly graded, with some fine- to coarse-grained gravell (to 1.2"), with few cemented olive brown layer.		28 50/6"	■				
35		Silty Clayey Sand (SM): Gray, to olive gray, moist, very dense, fine- to		40	■				

PLATE

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EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-1**
Location: **Santa Clarita**		Elevation:	**±1400**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/12/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		medium-grained sand, with numerous cemented olive brown layers.		50/6"	■				
40		**BEDROCK - Castaic Formation (Tcs)** Sandstone: Gray, moist, moderately hard, massive, fractured.		50/6"	■				
45		becomes hard, with slight iron oxide staining on fractures.		50/5"	■				
50				50/5"	■				
		Total Depth 50.5 feet No groundwater Boring Backfilled with cuttings.							
55									
60									
65									
70									

PLATE

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EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-2**
Location: **Santa Clarita**		Elevation:	**±1394**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/12/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** silty sand (SM): Grayish-brown, dry, loose to medium dense, very fine- to fine-grained sand.							
5		Sand with Silt (SP-SM): Gray, dry, very dense, fine- to coarse-grained sand, poorly graded, with few fine- to coarse-grained gravel (to 0.6").		20 30 36	■				
10		becomes yellowish brown, slightly moist, medium dense.		12 15 20	■	■			
15		Silty Sand (SM): Brown, moist, very dense, fine- to medium-grained sand, with few coarse-grained gravel (0.5" to 1.2"). Abundant of coarse-grained gravel.		25 50/6"	■	■			
20		No Recovery (Too Sandy).		39 50/6"	■				
25		Sand with Silt (SP-SM): Gray, to yellowish-brown, moist, dense, fine- to coarse-grained sand, poorly graded, with fine- to coarse-grained gravel (to 1.5"), subangular.		16 23 32	■				
30		becomes very dense.		32 50/6"	■				
35				35	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-2**
Location: **Santa Clarita**		Elevation:	**±1394**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/12/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				50/6"	■				
40		Silty Sand (SM): Yellowish-brown, moist, very dense, fine- to medium-grained sand, with few fine- to coarse-grained gravel (0.3" to 1.5").		40 50/5"	■				
45		becomes very moist.		42 50/3"	■				
50		Sand with Silt (SP-SM): Yellowish-brown, wet, very dense, fine- to coarse-grained sand, poorly graded.	▽	50/6"	■				
55		Gravel with Silt and Sand (GP): Brown, wet, very dense, coarse-grained sand, poorly graded.		50/5"	■				
60		Sandy Silt (SM): Dark brown, wet, very dense, fine-grained sand.		38 50/3"	■				
65				18 25 38	■				
		Total Depth 66.5 feet Groundwater @ 50 feet Boring Backfilled with cuttings.							
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-3**
Location: **Santa Clarita**		Elevation:	**±1386**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/12/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Silty Sand (SM): Brown, to brownish-gray, dry, loose to medium dense, very fine- to fine-grained sand.							
5		Sand with Silt (SP-SM): Gray, dry to slightly moist, dense, fine- to coarse-grained sand, poorly graded, trace of gravel.		15 18 30	■				
10		becomes moist, with rock fragments (to 2"), some gravel.		19 28 40	■				
15		Silty Sand (SM): Brown, moist, very dense, fine- to medium-grained sand.		28 50/6"	■				
20		Sand with Silt (SP-SM): Yellowish-brown, moist, very dense, fine- to coarse-grained sand, poorly graded, with some fine- to coarse-grained gravel.		20 35 42	■				
		Total Depth 21.5 feet No groundwaterBoring Backfilled with cuttings.							
25									
30									
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-4**
Location: **Santa Clarita**		Elevation:	**±1370**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/13/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Grayish-brown, dry, loose, very fine- to fine-grained sand, with few fine-grained gravel.							
5		becomes brown, dry to slightly moist, loose, with roots.		3 3 3	■				
10		becomes moist, with trace fine-grained gravel, subangular, with few clay, slightly plastic and with iron oxide stainingsome gravel.		3 6 10	■				
15		with trace pores (1mm).		5 6 9	■				
20		becomes weakly cemented, few roots, more plastic.		6 8 11	■				
25				5 10 13	■				
		Total Depth 26.5 feet No groundwater Boring Backfilled with cuttings.							
30									
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-5**
Location: **Santa Clarita**		Elevation:	**±1366**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/13/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Grayish-brown, dry, soft, very fine- to fine-grained sand, with few fine-grained gravel.							
5		becomes brown, moist, medium dense, with trace of tiny roots, without gravel.		8 9 12	■				
10		with 1-2 mm pores, iron & manganese oxide staining stainingsome gravel.		8 9 10	■				
15		more pores and less staining.		5 6 8	■				
20		becomes dense, weakly cemented, without pores, trace of fine-grained gravel.		13 18 25	■				
25				15 18 26	■				
30		**BEDROCK - Castaic Formation (Tcs)** Silty Sandstone: Grayish-brown, moist, moderately hard, thickly bedded to massive, slightly fractured, highly weathered, slightly cemented.		13 16 28	■				
35		with few iron oxide staining.		12	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-5**
Location: **Santa Clarita**		Elevation:	**±1366**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/13/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				18 26	■				
40		Cla e Sandstone: Dark brown, moist, soft, massive, highly weathered, slightly cemented.		13 19 23	■				
45		with trace of rock fragments.		21 24 31	■				
50				19 21 32	■				
55		Silty Sandstone: Olive gray, moist, moderately hard, massive, moderately fractured, with slight iron oxide staining on fractures, slightly cemented.		22 28 39	■				
60		becomes moderately to intensely fractured, with numerous iron oxide staining on fractures.		39 47 50/5"	■				
		Total Depth 61.5 feet No groundwater Boring Backfilled with cuttings.							
65									
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-6**
Location: **Santa Clarita**		Elevation:	**±1370**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/13/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Brown, dry, medium dense, fine-grained sand.							
5		becomes moist, rootlet.		3 5 8	■				
		BEDROCK - Castaic Formation (Tcs) Sandstone: Gray, moist, soft to moderately hard, massive, slightly fractured, moderately weathered.							
10		with trace pores (1mm).		36 50/2"	■				
15		Becomes olive gray, hard.		50/3"	■				
20		Becomes yellowish-brown.		50/2"	■				
		Total Depth 20.5 feet No groundwater Boring Backfilled with cuttings.							
25									
30									
35									

PLATE

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EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-7**
Location: **Santa Clarita**		Elevation:	**±1375**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/12/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Silty Sand (SM): Grayish-brown, to brown, dry, loose, fine-grained sand, poorly graded.							
5		Sandy Silt to Silty Sand (SM-ML): Brown, slightly moist, loose, very fine- to fine-grained sand, with trace of fine-grained gravel.		4 4 6	■				
10		Becomes moist, weakly cemented, rootlet.		8 10 15	■	■			
15		with trace of coarse-grained gravel and rock fragments.		8 12 40	■				
20		Becomes yellowish-brown.		8 9 11	■				
25		with iron oxide staining.		9 12 16	■				
30		without gravel.		7 9 12	■				
		BEDROCK - Castaic Formation (Tcs) Sandstone: Gray, moist, soft to moderately hard, massive, slightly fractured, moderately weathered.							
35		with iron oxide staining on fractures.		27	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-7**
Location: **Santa Clarita**		Elevation:	**±1375**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/12/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40		increase in iron oxide staining, black mottled.		40 50/6"	■				
				50/6"	■				
45				50/6"	■				
		Total Depth 45.5 feet No groundwater Boring Backfilled with cuttings.							
50									
55									
60									
65									
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-8**
Location: **Santa Clarita**		Elevation:	**±1397**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/18/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Silty Sand (SM): Light brown, dry, loose to medium dense, fine-grained sand, with few gravel.							
5		Sand with Silt (SP-SM): Grayish-brown, slightly moist, very dense, fine- to medium-grained sand, poorly graded, with fine-grained gravel.		20 25 37	■				
10		Becomes moist.		22 28 36	■				
15		Sand with Silt and Gravel (SP): Grayish-brown, moist, dense to very dense, fine- to coarse-grained sand, with some fine- to coarse-grained gravel.		18 26 34	■				
20				20 28 37	■				
25		becomes medium- to coarse-grained sand.		23 40 45	■				
30		Sandy Gravel to Gravelly Sand (SP/GP): Grayish-brown, to yellowish-brown, moist, very dense, fine- to coarse-grained sand, poorly graded, with fine- to coarse-grained gravel, few silt.		20 28 35	■				
35		Sand with Silt and Gravel (SP): Grayish-brown, moist, very dense, fine- to		37	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-8**
Location: **Santa Clarita**		Elevation:	**±1397**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/18/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		coarse-grained sand, poorly graded, with fine-grained gravel.		50/6"	■				
40		Becomes very moist, with fine- to coarse-grained gravel and trace of clay.		38 50/5"	■				
45		Becomes wet.	▽	50/6"	■				
50		Sand (SP/SW): Yellowish-brown, wet, very dense, fine- to coarse-grained sand, moderately graded, with fine- to coarse-grained gravel and silt.		40 50/5"	■				
55				39 50/5"	■				
60		**BEDROCK - Castaic Formation (Tcs)** Sandstone: Brown, to grayish-brown, wet, soft to moderately hard, massive, slightly fractured, highly weathered, with iron oxide staining on fractures.		7 12 12	■				
65		Becomes dark brown.		8 10 15	■				
		Total Depth 66.5 feet Groundwater @ 45 feet Boring Backfilled with cuttings.							
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-9**
Location: **Santa Clarita**		Elevation:	**±1395**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/18/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Silty Sand (SM): Light brown, dry, loose, fine-grained sand, with some fine-grained gravel (0.4" to 0.7"), subrounded.							
		Sand with Silt (SP-SM): Yellowish-brown, slightly moist, medium dense, fine- to coarse-grained sand, poorly graded, with fine-grained gravel.		12 11 11	■	■			
5		Becomes moist, with fine- to coarse-grained gravel.		10 16	■				
10		Sand with Silt and Gravel (SP): Yellowish-brown, moist, dense, fine- to coarse-grained sand, few silt.		19 32 14	■				
15		Gravelly Sand to Sandy Gravel (SP/GP): Grayish-brown, to yellowish-brown, moist, very dense, fine- to coarse-grained sand, poorly graded, with fine- to coarse-grained gravel.		15 26 36	■				
20				30 50/6"	■				
25		Sand with Silt (SP-SM): Grayish-brown, moist, very dense, very fine- to medium-grained sand, poorly graded, with some fine- to coarse-grained gravel (to 1.1"), few rock fragments, subangular.		37 50/6"	■				
30		Sand with Silt and Gravel (SP): Yellowish-brown, moist, very dense, fine- to coarse-grained sand, poorly graded, with few coarse-grained gravel.		40 50/5"	■				
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-9**
Location: **Santa Clarita**		Elevation:	**±1395**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/18/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40		**BEDROCK - Castaic Formation (Tcs)** Silty Sandstone: Grayish-brown, moist, moderately hard, massive, slightly to moderately fractured, highly weathered, with iron oxide staining on fractures.		50/6"	■				
		Becomes gray, to olive gray, moderately hard to hard.		50/6"	■				
45		Total Depth 43.5 feet No groundwater Boring Backfilled with cuttings.							
50									
55									
60									
65									
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-10**
Location: **Santa Clarita**		Elevation:	**±1396**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/18/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Silty Sand (SM): Light brown, dry, loose, fine-grained sand, with few fine-grained gravel.							
5		Sandy Silt to Silty Sand (SM-ML): Brown, slightly moist, medium dense, very fine- to fine-grained sand.		5 7 12	■	■			
10		Becomes dark brown, moist, medium dense, fine- to medium-grained sand, poorly graded, trace of fine-grained gravel, slightly plastic.		5 8 12	■				
15		Becomes rootlet, with trace of clay.		6 8 11	■				
20		Silty Sand (SM): Light brown, moist, medium dense, fine- to coarse-grained sand, trace of fine- to coarse-grained Gravel (up to 1.1"), with few pores (1mm).		8 11 13	■				
25		with trace of fine-grained gravel, without pores.		10 15 18	■				
30		without gravel.		8 12 16	■				
35		**BEDROCK - Castaic Formation (Tcs)**		6	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-10**
Location: **Santa Clarita**		Elevation:	**±1396**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/18/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sandstone: Brown, moist, soft, massive, slightly fractured, highly weathered, Slightly cemented.		10 15	■				
40		Becomes moderately hard.		50/6"	■				
45		Becomes brown, to olive brown, with iron oxide staining.		50/5"	■				
50		Becomes moderately weathered.		50/5"	■				
55		Clayey Sandstone: Becomes dark brown, to black.		50/5"	■				
		Total Depth 55.5 feet No groundwater Boring Backfilled with cuttings.							
60									
65									
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-11**
Location: **Santa Clarita**		Elevation:	**±1405**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/18/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Brown, dry, loose, very fine- to fine-grained sand.							
5		becomes slightly moist, medium dense.		5 6 12	■				
10		Becomes grayish-brown, moist, with iron oxide staining.		7 8 12	■				
15		Sandy Silt (ML): Dark brown, moist, medium dense, very fine- to fine-grained sand, With trace of clay.		12 15 18	■				
20		Becomes brown, dense.		16 23 13	■				
25		**BEDROCK - Castaic Formation (Tcs)** Silty Sandstone: Gray, moist, moderately hard to hard, thickly bedded to massive, slightly to moderately fractured, moderately weathered, with iron oxide staining on fractures.		29 50/6"	■				
30		Total Depth 26 feet No groundwater Boring Backfilled with cuttings.							
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-12**
Location: **Santa Clarita**		Elevation:	**±1404**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/19/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		Sandy Silt to Silty Sand (SM-ML): Brown, dry, loose, very fine- to fine-grained sand, with few fine-grained gravel, subrounded.							
		Becomes moist, medium dense, weakly cemented, rootlet, with few rock fragments.		13 10 8					
5									
		Silty Sand (SM): Brown, slightly moist, medium dense to dense, fine- to medium-grained sand, with few rock fragments.		10 16 20					
10									
		Sand with Silt (SP-SM): Yellowish-brown, to brown, moist, dense, fine- to coarse-grained sand, poorly graded, with fine-grained gravel (to 0.4").		13 17 19					
15									
		Silty Sand (SM): Brown, moist, dense, fine-grained sand, weakly cemented, trace of coarse-grained sand.		15 18 20					
20									
		Clayey Silty Sand (CL-ML): Dark brown, moist, dense, fine-grained sand, moderately plastic.		9 15 26					
25									
		Becomes medium dense.		6 7 8					
30									
		with iron oxide staining (probable weathered bedrock).		13 18 21					
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **HS-12**
Location: **Santa Clarita**			Elevation: **±1404**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/19/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**		Logged By: **AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				9 12 13					
45		**BEDROCK - Castaic Formation (Tcs)** Clayey Sandstone: Brown, to grayish-brown, moist, moderately hard to hard, massive, slightly fractured, highly weathered, with iron oxide staining on fractures.		50/6"					
50		No recovery, (Per driller, hit a rock layer and then a soft one), 2 rock fragments (2") are attached to sampler shoe..		52/5"					
55		Becomes dark brown, slightly weathered, with gray mottled.		50/4"					
		Total Depth 55.5 feet No groundwater Boring Backfilled with cuttings.							
60									
65									
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-13**
Location: **Santa Clarita**		Elevation:	**±1417**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/19/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Light brown, dry, loose, very fine- to fine-grained sand, with few fine-grained gravel.							
5		Becomes dark brown, moist, medium dense, more silty, weakly cemented.		6 9 13	■				
10		With trace of fine-grained gravel, rootlet.		8 12 16	■				
15		**BEDROCK - Castaic Formation (Tcs)** Silty Sandstone: Yellowish-brown, moist, soft to moderately hard, massive, highly weathered.		12 15 18	■				
20		Becomes brown.		8 10 14	■				
25		Becomes light brown, moderately hard to hard, slightly fractured, with iron oxide staining on fractures.		7 9 13	■				
30		Becomes olive brown, to brown, hard.		12 20 27	■				
35		Total Depth 31.5 feet No groundwater Boring Backfilled with cuttings.							

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-14**
Location: **Santa Clarita**		Elevation:	**±1425**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/19/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Brown, dry, loose, very fine- to fine-grained sand.							
		Silty Sand: Becomes grayish-brown, slightly moist, medium dense, fine-grained sand, with numerous rock fragments.		11 14 16	■				
5		Becomes brwon.		9 12 18	■				
10		Becomes grayish-brown, moist, massive, few coarse-grained sand, with iron oxide staining, probable weathered bedrock.		10 13 16	■				
15		**BEDROCK - Castaic Formation (Tcs)** Silty Sandstone: Yellowish-brown, moist, moderately hard to hard, massive, slightly fractured, highly weathered, with iron oxide staining on fractures, gray mottled.		18 26 40	■				
20				16 16 25	■				
		Total Depth 21.5 feet No groundwater Boring Backfilled with cuttings.							
25									
30									
35									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-15**
Location: **Santa Clarita**		Elevation:	**±1402**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/19/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Brown, dry, loose, very fine- to fine-grained sand, trace of fine-grained gravel.							
5		Becomes slightly moist, medium dense, few pores (1mm), rootlet.		10 13 15	■				
10		Silty Sand (SM): Brown, moist, dense, fine- to coarse-grained sand, fine-grained gravel, slightly cemented.		14 16 28	■				
15		Sandy Silt to Silty Sand (SM-ML): Dark brown, moist, medium dense, fine-grained sand, fine-grained gravel, cemented.		12 14 19	■				
20		Becomes brwon, with iron oxide staining.		9 11 13	■				
25		Becomes dark brown, (probable weathered bedrock).		8 10 12	■				
30		**BEDROCK - Castaic Formation (Tcs)** Silty Sandstone: Grayish-brown, moist, moderately hard to hard, massive, with iron oxide staining, well cemented.		11 14 19	■				
35		Becomes gray, hard.		29	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**HS-15**
Location: **Santa Clarita**		Elevation:	**±1402**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/19/18**
Drill Method: **Hollow Stem Auger**	Driving Weight: **140lbs/30"**	Logged By:	**AM**

Depth (Feet)	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40		Becomes hard to very hard, slightly fractured, with iron oxide staining on fractures.		50/6"	■				
				50/4"	■				
		Total Depth 40.5 feet No groundwater Boring Backfilled with cuttings.							
45									
50									
55									
60									
65									
70									

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-1**
Location: **Santa Clarita**			Elevation: **±1452'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/24/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SOIL** Clayey Silt (ML): olive-brown, dry to slightly moist, firm, few gravel sized shale clasts, pinhole porosity, rootlets throughout.							
				LANDSLIDE DEBRIS (Qls) Clayey Siltstone and Sandy Siltstone: Light olive-brown, fine-grained sand, moderately hard, thinly to thickly bedded, intensely fractured, highly weathered, moderately indurated, sections with disoriented bedding, interbedded with a scouring and infilling sequence, rootlets to 3.5'. @2.2': B: N5°E,12°N. @4.2': Becomes light yellowish brown and olive brown, hard, moderately weathered, slightly to moderately fractured, FeO banding. @6.8': Bedding: N5°E,12°N. @6.9': Fault: N30°-40°W,80°S; offset at 12.8' by another fault, reappears in hole at 14.7'. @10.1': Fault: N45°W, 65°N; brown sandy clay gouge up to 1/4-inch thick, hanging wall highly fractured and blocky with voids up to 12 inches in size, 2 foot offset with reverse movement, offsets above fault at 12.8'. @13-16': Caving of sidewalls due to voids and intensely fractured bedrock (very blocky).		11	■				
20						11	■				
				BEDROCK - Castaic Formation (Tcs) @ 23': Siltstone: Brown, olive-brown, hard, laminated to thinly bedded, moderately indurated.							
30						11	■				
				Total Depth = 31' Downhole logged to 16' due to caving sidewalls No groundwater encountered during drilling Borehole backfilled with cuttings Kelly Bar Weights							
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-1**
Location: **Santa Clarita**			Elevation: **±1452'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/24/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..							
45											
50											
55											
60											
65											
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-2**
Location: **Santa Clarita**			Elevation: **±1430'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/21/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SOIL** Sandy Silt to Silty Sand (SM-ML): Brown, dry, loose, very fine- to fine-grained sand, with rock fragments. @2' : very fine- to fine-grained sand, grayish brown, dry to slightly moist.							
5				**BEDROCK - Castaic Formation (Tcs)** Silty Sandstone: Grayish-brown, moist, fine-grained sand, fractured, blocky.							
10				Becomes gray, to yellowish-brown, fine- to medium-grained sand, with iron oxide staining on fractures, well cemented. @ 10.5': Bedding : N20°E, 20°N; 1-2" cemented sandstone bed medium- to coarse-grained sandstone, buff, dry, hard, cemented.		13	■				
15				@14.5': Bedding: N15°E, 15-20°N.							
20				Occasional iron stained silty sandstone layers.		16	■				
25				@22': Contact N30°E, 20°N; iron stained bed Coarsens to fine- to medium-grained sandstone, buff, dry, hard to very hard. @25': N30°E, 15-20°N; thin iron stained bed.							
30				@32': Contact N10°E, 10°N below tan, fine-grained sandstone fining and coarsening sequences.		20	■				
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-2**
Location: **Santa Clarita**			Elevation: **±1430'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/21/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				@37': 6" very hard, cemented bed. @39': Bedding N20°E, 15-20°N becomes very fine- to fine-grained sandstone, tan to buff, very hard, massive. @42': Bedding NS, 15°W.		26					
45				@45': Silty very fine-grained sandstone, brown to gray, very hard, massive.							
50				Total Depth = 49' Downhole logged No groundwater or caving encountered during drilling Borehole backfilled with cuttings <u>Kelly Bar Weights</u> 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..							
55											
60											
65											
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-3**
Location: **Santa Clarita**			Elevation: **±1394'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/21/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SOIL** Sandy Silt to Silty Sand (SM-ML): Brown, dry, loose to medium dense, very fine- to fine-grained sand, with rock fragments.							
				BEDROCK - Castaic Formation (Tcs) Sandy Siltstone: Gray, dry to slightly moist, massive.							
5				@5': 6" clayey Siltstone, brown, slightly moist, moderately hard.							
				@7': Bedding: N10°E, 10-15°N.							
10				@ 10': Bedding: NS, 15-20°W Very fine-grained sandstone, yellowish brown, moist, fractured, iron stained, moderately hard to hard.		7	■				
15											
				@18': Contact N10°E, 20°N; 3" gravel layer very fine- to fine-grained sandstone, tan, hard to very hard, massive.							
20						10	■				
				@22': 6" hard, cemented bed.							
				@24': Bedding: NS, 10°W fining and coarsening sequences.							
25											
30						15	■				
				Total Depth = 31' Downhole logged No groundwater or caving encountered during drilling Borehole backfilled with cuttings							
				Kelly Bar Weights							
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-3**
Location: **Santa Clarita**			Elevation: **±1394'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/21/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..						
40											
45											
50											
55											
60											
65											
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-4**
Location: **Santa Clarita**			Elevation: **±1502'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/18/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**BEDROCK - Castaic Formation (Tcs)** Clayey Siltstone: Light tan, to light yellowish-brown, dry, hard, laminated to thinly bedded, intensely fractured, highly weathered, moderately to well indurated, iron oxide staining along fractures, few sandy siltstone lenses throughout.							
5				@5.5': Becomes light olive gray, moderately weathered, MnO staining along fractures. @7.0': Bivalve fossils in sandy siltstone bed.							
10				@8.5': Becomes moderately fractured with a moderately defined fracture set: Fracture: N10°W,80°N; N30°E,80°S; N55°E, 55°S. @10.5': Becomes slightly fractured, slightly moist, faintly laminated; Bedding: N10°E,18°N. @11.0': Becomes very hard.		11	■				
15				@14.8': Becomes white to light tan, slightly weathered. @16.8': Becomes yellowish brown, fractures infilled with gypsum. @17.5': concretion approximately 2'-diameter, very hard.							
20				@19.0': Fracture: N55°E,60°S; MnO stained with partial gypsum infilling. @19.9': Clay bed: N55°,60°S; brown, moderately hard, moderately plastic, approximately 1/4" thick, no signs of shearing or slicks, some mineralization directly above.		14	■				
25				Interbedded Clayey Siltstone and Silty Claystone: Light brown, to olive gray, hard, laminated to thinly bedded, slightly fractured, slightly weathered, well defined and slightly undulating laminations, well indurated. Sandstone: Light Gray, fine-grained sand, hard, massive, moderately cemented, slightly undulating. @24.9': Bedding: N15°E,15°N. Fining and coarsening sequences from siltstone to coarse-grained sandstone; sandstone highly oxidized.							
30				Sandstone: Light yellowish brown, fine-grained sand, massive, moderately cemented, few coarse-grained sand lenses. Interbedded Clayey Siltstone and Silty Claystone: Light brown to olive gray, hard, laminated to thinly bedded, slightly fractured, slightly weathered, well indurated. Siltstone: Olive gray, hard, massive, well indurated.		13	■				
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-4**
Location: **Santa Clarita**			Elevation: **±1502'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/18/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				Interbedded Clayey Siltstone and Silty Claystone: Light brown, to olive gray, hard, laminated to thinly bedded, slightly fractured, slightly weathered, well indurated, gypsum seams approximately 1/4" thick @36.6': Bedding: N10°E, 10°N.							
				Sandstone: Bluish-gray, to very pale brown, fine-grained sand, hard, massive, few coarse grain lenses, moderately cemented.		14					
				Interbedded Clayey Siltstone and Silty Claystone: Light brown, to olive gray, hard, laminated to thinly bedded, slightly fractured, slightly weathered, well defined and slightly undulating laminations, well indurated.							
45				Sandstone: Bluish-gray, to very pale brown, fine-grained sand, hard, massive, coarsening sequence with depth, moderately cemented.							
				Interbedded Clayey Siltstone and Silty Claystone: Light brown, to olive gray, hard, laminated to thinly bedded, slightly fractured, slightly weathered, well defined and slightly undulating laminations, poorly defined bedding, well indurated.							
50				Sandstone: Light bluish-gray, fine-grained sand, hard, massive, moderately cemented. @44.9': Becomes reddish brown, to yellowish brown, medium- to coarse- grained sandstone with many gravel. @48.2': Bedding N20°E,20°N; becomes yellowish brown, fine- grained sandstone, few interbedded silt sandstone beds approximately 1.5' thick.		20					
55				@55.3': Interbedded Claystone and siltstone bed: N10°E, 12°N; reddish brown and olive brown, approximately 4-inches thick. @57.0': Becomes coarse- grained sand with few gravel.							
				Silty Sandstone: Reddish-brown, fine- to coarse-grained sand, hard, massive, few very pale brown coarse- grained sand lenses.							
60						22					
				Interbedded Clayey Siltstone and Silty Claystone: Light brown, to olive gray, hard, laminated to thinly bedded, slightly fractured, slightly weathered, well defined and slightly undulating laminations, poorly defined bedding, well indurated @61.0': Bedding: N15°E, 13°N.							
65				Sandstone: Bluish-gray, fine- to medium-grained sand, hard, massive, moderately cemented.							
						22					
70				Total Depth = 69.0' Downhole logged to 66.5' No Groundwater Encountered During Drilling							

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-4**
Location: **Santa Clarita**			Elevation: **±1502'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/18/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				No Caving Backfilled with Cuttings <u>Kelly Bar Weights</u> 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..						
75											
80											
85											
90											
95											
100											
105											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**FA-5**
Location: **Santa Clarita**		Elevation:	**±1516'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/19-9/20/18**
Drill Method: **Lo-Dril with 24" auger**	Driving Weight: **See End of Log**	Logged By:	**EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**BEDROCK - Saugus Formation (QTs)** Sandstone: Light yellowish brown, dry to slightly moist, fine- to coarse-grained sand, very hard, very thinly to thickly bedded, slightly fractured, moderately weathered, many fine gravel, moderately to well cemented, iron oxide staining along bedding, interbedded with thin Siltstone: light tan, very hard, moderately indurated, moderately weathered, some fine sand; undulating bedding and partially discouninuous and cross bedded.							
5											
10				**BEDROCK - Castaic Formation (Tcs)** Interbedded Clayey Sandstone, Claystone, and Siltstone: light gray to reddish brown to yellowish brown to blueish gray, slightly moist, moderately indurated/cemented, fine-grained sand, laminated to thickly bedded, slightly fractured, slightly weathered, undulating laminations and bedding, fining and coarsening sequences generally capped with well cemented coarse- grained sandstone with highly iron oxide stained laminations. @9.9': Bedding: N10°E,18°N. @13.3': Bedding: N5°E,12°N; white, well cemented, fine-grained sandstone bed, approximately 3-inches thick.		9					
15											
20						11					
25				@22.1': Bedding: N5°W,22°S; white, well cemented, fine-grained sandstone bed, approximately 7-inches thick.							
30						19					
35				@31.5': Bedding: N10°W,10°S.							

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**FA-5**
Location: **Santa Clarita**		Elevation:	**±1516'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/19-9/20/18**
Drill Method: **Lo-Dril with 24" auger**	Driving Weight: **See End of Log**	Logged By:	**EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				@38.5': Bedding: N15°W,10°S.		19					
45				@43.8': Sandstone bed, reddish brown, fine- to coarse-grained, 1.3' thick.							
50						17					
55				Sandstone bed with cobbles up to 12-inches in diameter, approximately 1.2' thick. @53.2': Bedding: N10°W,17°S.							
60				Sandstone: reddish brown, moist, fine- grained, massive, weakly cemented, few gravel and cobbles up to 4-inch diameter.							
65				@65.0': Becomes fine- to coarse- grained.							
70				Interbedded Claystone and Siltstone: Dark gray to dark reddish brown, hard, bedding 1- to 6-inches thick, some gypsum veins along bedding @37.7': Bedding/contact: N35°W,15°S. Interbedded Clayey Sandstone, Claystone, and Siltstone:		7					

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-5**
Location: **Santa Clarita**			Elevation: **±1516'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/19-9/20/18**
Drill Method: **Lo-Dril with 24" auger**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
75				light gray to reddish brown to yellowish brown to blueish gray, moderately indurated/cemented, fine-grained sand, laminated to thinly bedded, undulating laminations and bedding.							
				Interbedded Claystone and Siltstone: Dark gray to dark reddish brown, hard, bedding 1- to 6-inches thick, some gypsum veins along bedding @73.0': Bedding: N35°W,12°S.							
				Sandstone: Gray, fine- to coarse-grained sand, massive, moderately to well cemented.							
				Clayey Sandstone: Yellowish-brown to light gray, fine-grained sand, hard, laminated.							
80				Interbedded Claystone and Siltstone: Dark gray to dark reddish brown, hard, bedding 1- to 6-inches thick, some gypsum veins along bedding @76.0': Bedding: N-S,20°W.							
				Total Depth = 80.0'							
				Downhole logged to 77.0'							
				No Groundwater Encountered During Drilling							
				No Caving							
85				Backfilled with Cuttings							
				Kelly Bar Weights							
				0-15': 1,767 lbs.							
				15-30': 1,182 lbs.							
				30-45': 757 lbs.							
				45-60': 489 lbs.							
90				5' Stem: 288 lbs.							
				12' Stem: 580 lbs.							
95											
100											
105											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-6**
Location: **Santa Clarita**			Elevation: **±1395**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/24/18**
Drill Method: **Lo-Dril with 24" Auger**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SLOPEWASH (Qsw)** Clayey Silt (ML): Olive brown, dry to slightly moist, firm, few gravel sized bedrock clasts, pinhole porosity, rootlets throughout.							
5				**LANDSLIDE DEBRIS (Qls)** Clayey Siltstone: Light gray, dry, soft to moderately hard, laminated to thinly bedded, intensely fractured, highly weathered, blocky, disoriented bedding.							
10						11					
				@11.6': Highly fractured brown siltstone beds, approximately 6-inches thick. @12.0': Basal landslide surface: N35°W,25°S; Claystone: brown, ½- to 1-inch thick, well defined bed, low plasticity.						
15				**BEDROCK - Castaic Formation (Tcs)** Sandstone: Light bluish-gray, fine- to coarse-grained sand, hard, massive, slightly fractured, slightly weathered, weakly cemented, few fine gravel, highly iron oxide stained near contact above Sandy Siltstone: Light olive brown, fine-grained sand, moderately hard, massive, slightly fractured, slightly weathered, weakly indurated Interbedded Clayey Siltstone and Silty Claystone: Dark brown, to olive brown, hard, laminated to thinly bedded, moderately indurated.							
20						11					
				Sandstone: Light bluish-gray, fine- to coarse-grained sand, hard, massive, slightly fractured, slightly weathered, weakly cemented, few fine gravel Sandy Siltstone: Light olive brown, moderately hard, massive, unfractured to slightly fractured, slightly weathered, weakly indurated.						
25				Interbedded Clayey Siltstone and Silty Claystone: Dark brown, to olive brown, hard, laminated to thinly bedded, moderately indurated Silty Sandstone: Light bluish-gray, fine-grained sand, hard, massive, slightly weathered, weakly cemented. Interbedded Clayey Siltstone and Silty Claystone: Dark brown, to olive brown, hard, laminated to thinly bedded, moderately indurated.							
30						15					
				Sandy Siltstone: Light olive brown, fine-grained sand, moderately hard, massive, unfractured to slightly fractured, slightly weathered, weakly indurated. Silty Sandstone: Light bluish-gray, fine-grained sand, hard, thinly bedded, slightly weathered, weakly cemented. Sandstone: Light bluish-gray, fine- to coarse-grained sand, hard, massive, slightly fractured, slightly weathered, weakly cemented, few fine gravel, coarsens with depth.						
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-6**
Location: **Santa Clarita**			Elevation: **±1395**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/24/18**
Drill Method: **Lo-Dril with 24" Auger**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				@29.2': Bedding: N40°W,22°S. Total Depth = 35.0' Downhole logged to 32.0' No Groundwater Encountered During Drilling No Caving Backfilled with Cuttings Kelly Bar Weights 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs.						
45											
50											
55											
60											
65											
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-7**
Location: **Santa Clarita**			Elevation: **±1442'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/27/18**
Drill Method: **Lo-Dril with 24" Auger**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SOIL** Sandy Silt with Clay (ML): Dark brown.							
				BEDROCK - Saugus Formation (QTs) Sandstone: Yellowish-brown, fine- to coarse-grained sand, hard, massive, slightly fractured, highly weathered, many gravel and cobbles, lenses with varying grain-sizes, moderately cemented. @2.5': 18-inch-diameter cobble. @3': Decrease in grain size, fine- to coarse-grained sand with trace gravel. @5.1': Bedding: N75°W,27°S on faint lamination.						
5											
10						13	■				
				BEDROCK - Castaic Formation (Tcs) Clayey Sandstone: Olive brown, very fine- to medium-grained sand, hard, massive, slightly fractured, moderately weathered, moderately cemented.							
15				Silty Sandstone: Yellowish-brown, fine- to medium-grained sand, hard, massive, moderately cemented @15.4': Fault: N30°W,73°N; ½ to 1" thick, infilled with white mineral, out of hole at 21.9'.							
20						22	■				
				Clayey Sandstone: Yellowish-brown, fine- to coarse-grained sand, hard, massive, moderately cemented.							
				Sandy Claystone: Dark reddish-brown to dark olive gray, hard, weakly indurated, low plasticity, undulating bedding and contact.							
25				Clayey Sandstone: Olive gray, fine-grained sand, hard, massive. @25.6': Becomes dark yellowish brown.							
30				Silty Sandstone: Yellowish-brown, fine-grained sand, hard, moderately cemented, trace cobbles, mixed pockets and interbeds of clayey sand.		20	■				
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-7**
Location: **Santa Clarita**			Elevation: **±1442'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/27/18**
Drill Method: **Lo-Dril with 24" Auger**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				Sandy Claystone: Reddish-brown, to olive gray, hard, moderately indurated, highly scoured contact, interbeds of clayey sandstone. @36.7': Fault: N-S,75°E; 1/8" thick, FeO stained, out of hole at 49'.							
				@40.4': White, highly cemented concretion, approximately 3" thick by 20" wide.		24	■				
45				@44.2': Bedding: N35°W,12°S.							
				@46.3': Gravel bed, approximately 2" thick, undulating, discontinuous around hole.							
50						20	■				
55				Total Depth = 51' Downhole logged to 47.5' No groundwater encountered during drilling No caving Borehole backfilled with cuttings Kelly Bar Weights 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..							
60											
65											
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**FA-8**
Location: **Santa Clarita**		Elevation:	**±1450'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/25/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**	Logged By:	**TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**BEDROCK - Castaic Formation (Tcs)** Coarse-grained sandstone: Tan, dry, soft to moderately hard, weathered to 6", with rootlets.							
				@3': Approximate bedding; N70°W, 20-25°S 6" pebble bed.							
5				fine- to coarse-grained sandstone, occasional cemented lenses 6-8", tan, dry, hard, massive.							
10						10	■				
				@13': 1-2" reddish-brown siltstone layers Bedding: N50°W, 15-20°S.							
15											
				@18': Pebbly coarse-grained sandstone; light tan, dry, hard to very hard, massive.							
20						23	■				
25											
				@27': fine- to medium-grained sandstone; brown, dry, hard to very hard, massive.							
30				Coarsens to coarse-grained sandstone.		24	■				
				@31.5': 2-3" silty Sand Stone over a medium-grained sandstone. Bedding: N50°W, 25-30°S. Erosional/undulatory contact.							
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-8**
Location: **Santa Clarita**			Elevation: **±1450'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/25/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				@38': 2' cemented bed, very hard. Fine- to medium-grained sandstone, Brown, dry, hard to very hard, massive.		21	■				
45				Slight fining and coarsening sequences.							
50						21	■				
				Total Depth = 50' Downhole logged No groundwater or caving encountered during drilling Borehole backfilled with cuttings <u>Kelly Bar Weights</u> 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..						
55											
60											
65											
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**FA-9**
Location: **Santa Clarita**		Elevation:	**±1482**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/25/18**
Drill Method: **Lo-Dril w/ 24" Auger**	Driving Weight: **See End of Log**	Logged By:	**EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SLOPEWASH (Qsw)** Sandy Silt with Clay (ML): Light olive brown, dry, firm, fine- to coarse-grained sand, gravel sized bedrock clasts, rootlets throughout.							
5				**LANDSLIDE DEBRIS (Qls)** CLayey Siltstone and Silty Claystone: Brown to light olive brown, moderately hard, intensely fractured, highly weathered, significant FeO and MnO staining and gypsum infilling along fractures, discontinuous, and folded bedding,. @7.1': Becomes bluish gray to olive brown Bedding on north side of hole: N70°E,65°N; Bedding on south side of hole: N30°W, 25°N.		12	■				
10											
15				@14': Highly fractured zone with fractures 1/4" to 1" apart. **@15.9': Rupture Surface:** N60°-80°W,18°S; 1-2" thick, brown to olive gray, polished surfaces with microshears throughout, flakey shears with slickensides, moderate to high plasticity, fractures above terminate on surface.							
20				**BEDROCK - Castaic Formation (Tcs)** Clayey Siltstone: Dark reddish-brown to olive gray, very hard, thinly to thicky bedded, moderately indurated. Fault: N60°E,75°N to Vert; MnO stained with fractures 6" to 16" wide, begins at rupture surface and out of the hole at 34'. @19': Becomes dark browm, massive, fault fracture becomes tighter.		17	■				
25											
30				@31.1': Fault offsets sand beds, 1/4" opening of fault Bedding: N60°W,5°S.		15	■				
35				@34.0': Fault out of hole.							

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-9**
Location: **Santa Clarita**			Elevation: **±1482**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/25/18**
Drill Method: **Lo-Dril w/ 24" Auger**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				Interbedded Silty Sandstone: yellowish brown, fine-grained, very hard, modereately cemented; Clayey Siltstone: olive green, moderately indurated; low plasticity; and Silty Claystone: dark reddish brown, moderately indurated, moderate plasticity; thinly to thickly bedded. @37.9': Bedding: N55°W,11°S; sand lens, slightly undulating, 1 to 6" thick.		17	■				
45				@44.0': Bedding: N45°W,13°S; gypsum seam along bedding; few unoxidized, dark gray spotting. Sandy Siltstone: Yellowish-brown, fine-grained sand, hard, massive, moderetely indurated.							
50						20	■				
55				Clayey Siltstone: Reddish-brown, with dark grey spotting, very hard, massive, weakly indurated. @52': Becomes dark gray.							
60						22	■				
65				Total Depth = 61' Downhole logged to 56.0' No groundwater encountered during drilling No caving Borehole backfilled with cuttings Kelly Bar Weights 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..							
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-10**
Location: **Santa Clarita**			Elevation: **±1435'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/26/18**
Drill Method: **Lo-Dril w/ 24" aguer**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**ARTIFICIAL FILL, undocumented (afu)** Clayey Sand with Gravel (SC): Brown, dry, loose, fine- to coarse-grained sand, few cobbles, desiccated.							
				ALLUVIUM (Qal) Silty Sand (SM): White, to pale yellow, slightly moist, medium dense, faint laminations, lenses with brown clayey sand to clay with many having varying amounts of charcoal throughout, few undulating beds with coarse sand that are cross bedded or discontinuous, krotovina throughout.							
5											
				LANDSLIDE DEBRIS (Qls) Clayey Siltstone: erosional and highly scoured contact with above, soft to moderately hard, intensely fractured, intensely weathered, disoriented and discountinuous bedding, Iron oxide and MnO staining throughout, areas with silt and sand matrix, occasional clumps of topsoil and alluvium with roots up to 6-inch-diameter, few shale cobbles.		8					
10											
15											
				@18.4': Rupture Surface: non-planar- at 18.4' on SW side of hole and 20.7' on NE side: silty clay, yellowish brown to dark brown, low placticity, approximately 1/4" thick.		14					
20				**ALLUVIUM (Qal)** Silty Sand (SM): Light gray, to light yellowish-brown, slightly moist, medium dense, faint laminations, lenses with brown clayey sand to clay with many having high quantities of charcoal, few beds with coarse sand that are cross bedded, channelized, or discontinuous. @18.5': Fault: N65°E,65°N; Approximately 1/4" to 1/8" thick with MnO and gypsum infilling, Fault in 3 main splays through hole, t2' offset of bedrock below, normal movement, terminated by rupture surface above, out of hole at 23'.							
25				**BEDROCK - Castaic Formation (Tcs)** Clayey Siltstone: Olive gray, hard, thinly bedded to massive, slightly fractured, slightly weathered, moderately indurated, contact offset 2' by fault above.. @21.9': Bedding: N70°W,19°S; Silty Sandstone bed approximately 0.9' thick. @24.8': Bedding: N75°E,28°S.							
30				@32.8': Clay seam: E-W, 15°S; dark brown, soft, high plasticity, no shears or slicks, 1/2 to 1/4" thick.		14					
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-10**
Location: **Santa Clarita**			Elevation: **±1435'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/26/18**
Drill Method: **Lo-Dril w/ 24" aguer**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				Total Depth = 38.0'							
				Downhole logged to 35.0'							
				No groundwater encountered during drilling							
40				No caving							
				Borehole backfilled with cuttings							
				Kelly Bar Weights							
				0-15': 1,767 lbs.							
				15-30': 1,182 lbs.							
45				30-45': 757 lbs.							
				45-60': 489 lbs.							
				5' Stem: 288 lbs.							
				12' Stem: 580 lbs..							
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PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**FA-11**
Location: **Santa Clarita**		Elevation:	**±1475**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**9/26-9/27/18**
Drill Method: **Lo-Dril w/ 24" auger**	Driving Weight: **See End of Log**	Logged By:	**EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**BEDROCK - Saugus Formation (QTs)** Gravelly Sandstone with cobbles: Light yellowish brown, , fine- to coarse-grained sand, hard, fining and coarsening, cross bedding, moderately cemented with few well cemented lenses. @3.1': Bedding: N5°W,21°S; silty sandstone bed.							
5				@7': Becomes fine- to medium- grained sand with trace gravel and cobbles.							
10						11	■				
				Silty Sandstone: Light olive brown, fine-grained sand, hard, massive, trace gravel and cobbles, @11.8': Bedding: N5°W,20°S.							
15											
20				@19.0': Cobble bed with brown coarse- grained sand matrix, approximately 9-inches thick. @19.8': Becomes fine- to medium- grained.		16	■				
				@21.8': Clayey Sandstone bed: N10°W,22°S; reddish brown, fine- grained sand, high quantities of charcoal, approximately 4-inches thick.							
25				Gravelly Sandstone with cobbles: White, coarse-grained sand, very hard, massive, well cemented.							
				Silty Sandstone: Olive gray, fine- to medium-grained sand, hard, massive, moderately cemented.							
30				@29.2': Clayey Sandstone bed: N10°W,20°S; reddish brown, fine- grained sand, high quantities of charcoal, approximately 4-inches thick.		12	■				
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-11**
Location: **Santa Clarita**			Elevation: **±1475**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/26-9/27/18**
Drill Method: **Lo-Dril w/ 24" auger**	Driving Weight: **See End of Log**		Logged By: **EBP**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				Total Depth = 36.5' Downhole logged to 33.5' No groundwater encountered during drilling No caving Borehole backfilled with cuttings <u>Kelly Bar Weights</u> 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..						
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PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-12**
Location: **Santa Clarita**			Elevation: **±1405'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/28/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SOIL** Silty Sand (SM): Light brown, dry to slightly moist, loose to medium dense, with few gravel.							
				BEDROCK - Castaic Formation (Tcs) Medium grain Sandstone: Buff, dry, Medium-grain, weathered, blocky. @3.5': Bedding; N35°E, 25°N.							
5				@6': 6" hard, cemented layer Massive with slight fining and coarsening sequences.							
10						11	■				
				@13': 3-6" Silty sandstone, iron stained Bedding: N55°W, 15-20°S.		7	■				
15				@17': Bedding: N35°W, 10-15°S; iron stained layer.							
				Sandy Siltstone: White to yellowish-brown, slightly moist, fine- to medium-grain.							
20				Siltstone: Gray with white (marbled), orange oxidized, fine-grain, hard, laminated.		14	■				
				@22': Bedding: NS, 15°W.							
25				Silty Sandstone: Yellowish-brown, slightly moist, fine- to medium-grained sand with gravel. Becomes gray with cobbles							
				@27.5': N10°W, 15-20°S; very thin clayey sandstone, gray.							
30				Siltstone/Silty Sandstone: Gray and white, orange oxidized, fine- to medium-grain, moderately hard. @30.5': NS, 20°W; 3" coarse-grained sandstone, white gray, iron stained.		18	■				
35				Silty Sandstone: Olive brown, to brownish-yellow, slightly							

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-12**
Location: **Santa Clarita**			Elevation: **±1405'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **9/28/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				moist, hard, massive to depth.		22	■				
45				Total Depth = 41' Downhole logged No groundwater or caving encountered during drilling Borehole backfilled with cuttings <u>Kelly Bar Weights</u> 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..						
50											
55											
60											
65											
70											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-13**
Location: **Santa Clarita**			Elevation: **±1560'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **11/02/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**SOIL** Silty Sand (SM): Brown, to reddish-brown, dry, medium dense to dense, medium- to coarse-grained sand, Pebbles.							
5				**BEDROCK - Castaic Formation (Tcs)** Siltstone/Silty Sandstone: Brownish-gray, dry, very fine-grained sandstone, moderately hard, weathered.							
10				@10': 6" cobble bed.		12	■				
				Clayey Siltstone/Silty Claystone: Reddish-brown, dry, hard. @13.5': Approximate bedding: N40°E, 5-10°N.							
15				Silty Sandstone: Gray, dry, medium- to coarse-grain, hard, occasional gravel Coarsens.							
20				Gravelly Sandstone: Gray, dry, coarse-grain, moderately hard, occasional pebbles to 2".		15	■				
25				@24': Undulated contact: N45°W, 10-15°S Hard drilling. @25.5': Medium- to coarse-grained sandstone, White, moderately hard, occasional gravel. @27': Bedding: N30°W, 10°S; siltstone/ clayey siltstone, reddish brown, hard.							
30				Sandstone: Yellowish-brown, dry, fine- to medium-grain, moderately hard to hard, massive. Coarsens to medium- to coarse-grained sandstone with occasional gravel.		16	■				
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-13**
Location: **Santa Clarita**			Elevation: **±1560'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **11/02/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
40				@37': Indistinct contact: 6-8" silty claystone. @40': Silty fine-grained sandstone.		19	■				
45				@42': 0.5-1' clayey siltstone, reddish brown. @47.5': Approximate bedding: N15°E, 5N; 6" clayey siltstone.							
50				: @48': Fine-grained sandstone, brown, dry, hard, cemented, massive, occasional gravel/cobbles. Fining and coarsening sequences.		20	■				
55											
60				@59': N30°W, 5-10°S: slightly iron stained layer.		20	■				
65				@62': 6" Cobble Layer. @63': Approximate bedding: NS, 10-15°W; iron stained bed. Silty Sandstone/Siltstone: Gray, dry to slightly moist, very fine-grain, hard, massive.							
70						21	■				

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-13**
Location: **Santa Clarita**			Elevation: **±1560'**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **11/02/18**
Drill Method: **Lo-Dril w/24" Auger**	Driving Weight: **See end of log**		Logged By: **TW**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
75				Total Depth = 71' Downhole logged No groundwater or caving encountered during drilling Borehole backfilled with cuttings Kelly Bar Weights 0-15': 1,767 lbs. 15-30': 1,182 lbs. 30-45': 757 lbs. 45-60': 489 lbs. 5' Stem: 288 lbs. 12' Stem: 580 lbs..						
80											
85											
90											
95											
100											
105											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**		Boring No.:	**FA-14**
Location: **Santa Clarita**		Elevation:	**±1380**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**	Date:	**11/01/18**
Drill Method: **Bucket Auger**	Driving Weight:	Logged By:	**AM**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Brown, to grayish-brown, dry to slightly moist, loose to medium dense, very fine- to fine-grained sand.							
5				becomes moist, with rock fragments.		9	■				
10				**BEDROCK - Castaic Formation (Tcs)** Sandstone: Tan, to light gray, moist, fine-grained sand, soft to moderately hard, massive, moderately weathered.							
15				Becomes fine- to medium-grained sand, with iron oxide staining.		11	■				
				Total Depth 16 feet No groundwater Boring Backfilled with cuttings.							
20											
25											
30											
35											

PLATE

Petra Geosciences, Inc.

EXPLORATION LOG

Project: **Bouquet Canyon**			Boring No.: **FA-15**
Location: **Santa Clarita**			Elevation: **±1397**
Job No.: **18-322**	Client: **The Bouquet Canyon Project Owner, LLC**		Date: **11/01/18**
Drill Method: **Bucket Auger**	Driving Weight:		Logged By: **AM**

Depth (Feet)	Becker Data: Measured Blow Count, Blows / foot	Becker Data: Bounce Chamber Pressure, psi	Lith-ology	Material Description	WATER	Samples: Blows per 6 in.	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0				**ALLUVIUM (Qal)** Sandy Silt to Silty Sand (SM-ML): Brown to grayish-brown, dry to slightly moist, loose to medium dense, very fine- to medium-grained sand, with abundant cobbles and rock fragments..							
5				becomes moist.		11	■				
10				**BEDROCK - Castaic Formation (Tcs)** Sandstone: Tan, to light gray, moist, fine-grained sand, soft to moderately hard, massive, moderately weathered.							
15				Becomes fine- to coarse-grained sand.		17	■				
				Total Depth 17 feet No groundwater Boring Backfilled with cuttings.							
20											
25											
30											
35											

PLATE

Petra Geosciences, Inc.

LOGS OF TEST PITS

J.N. 18-322

TEST PIT TP-1

0 to 5 ½ feet – Soil/colluvium- very fine-grained sandy silt- grey, dry loose, occasional coarse grain/gravel size pieces

@ 1 foot – heavy root zone/rootlets

@ 5 ½ to 7 feet – Bedrock - silty very fine to fine grain sandstone- brown/light tan, dry, loose, moderately hard, iron stained layers ½ to 1-inch

Total Depth – 7 feet
No Water/No Caving

Drive sample- 2 ½ feet

TEST PIT TP-2

0 to 6 feet - Soil/colluvium- very fine-grained sandy silt- grey, dry loose, occasional gravel size pieces, roots to 3 feet

@ 6 to 8 feet – Bedrock - silty very fine to fine grain sandstone, light tan, dry, loose to moderately hard

Total Depth – 8 feet
No Water/No Caving

Bulk sample- 2 to 5 feet

TEST PIT TP-3

0 to 1 ½ feet – Soil - sandy silt/silty sand- grey, dry, loose, rootlets

@ 1 ½ to 5 ½ feet - Bedrock- well bedded sandstone/siltstone, ½ to 1 inch layers, sand layers are iron stained, dry, blocky with rootlets.
@ 2-1/2'- light grey sandstone- dry, moderately hard, moderately indurated

@3' Attitude- N40E, 14NW Bedding ~

Total Depth – 5 ½ feet
NoWater/No Caving

Drive sample at surface. No recovery – very loose

TEST PIT TP-4

0 to 3 ½ feet – Soil - sandy silt, light grey, dry, loose, rootlets/burrows

@ 3 ½ to 5 feet – Bedrock - silty, very fine grained sandstone-buff, dry, moderately hard

@ 5 feet – 1-foot, well bedded siltstone

@5'- Attitude N5W, 25S bedding

@6 to 7 ½ feet – very fine grained sandstone-buff, dry, moderately hard

Total Depth – 7 ½ feet
No Water/No Caving

Drive sample- 2 feet

TEST PIT TP-5

0 to 10 ½ feet – Alluvium - fine grained sandy silt- light grey, dry, loose, occasional gravel, pinhole porosity

@ 6 feet- becomes medium dense

@ 10 ½ feet – Bedrock- medium grained sandstone- buff, dry, moderately hard

Total Depth – 11 feet
No Water/No Caving

TEST PIT TP-6

0 to 4 ½ feet – Soil/colluvium - sandy silty, grey, dry, loose, rootlets

@ 4 ½ feet – Bedrock- siltstone, blocky/fractured, grey, dry, fractured/blocky

@ 5 feet – Attitude N20E, 40N - bedding, creep affected.

Total Depth – 7 feet
No Water/No Caving

TEST PIT TP-7

0 to 4 feet – Soil - sandy silt with abundant pebbles and cobbles, light grey, dry, loose

@ 4 to 6 ½ feet – Bedrock- sandy siltstone- grey, dry, weathered, blocky/fractured

Total Depth – 6 ½ feet
No Water/No Caving

TEST PIT TP-8

0 to 8 feet – Fill- silt/clayey sand, brown, dry, slightly moist, medium dense, rootlets

@ 8 to 10 ½ feet – brown sand, dry, loose with sandstone pieces

@ 10 ½ to 14 ½ feet – possible weathered bedrock- sandstone/siltstone- grey, loose

Total Depth – 14 ½ feet
No Water/No Caving

TEST PIT TP-9

0 to 6 inches –Soil - silty, fine medium grain sand- brown, dry, medium dense, rootlets, pinhole porosity, occasional gravel cobbles

@ 6 inches to 5 feet – Bedrock- fine to coarse grained sandstone, buff white, dry, hard, iron staining, occasional gravel, sporadic cobbles, blocky in upper 6 inches to 1 foot.

3 ½ feet- Attitude N45W, 10-15S, 3-4" coarse grained/gravel bed

Total Depth – 5 feet
No Water/No Caving

TEST PIT TP-10

0 to 6 inches – Soil- silty, fine to medium grain sand- brown, dry, medium dense, rootlets, occasional gravel and cobbles

@ 6 inches to 3 feet – Bedrock- fine to coarse grained sandstone- buff white, dry, becoming a pebble/cobble conglomerate, hard

Total Depth – 3 feet
No Water/No Caving

TEST PIT TP-11

@ 0 to 6 inches – Soil- silty, fine to medium grain sand- brown, dry, medium dense, rootlets, occasional gravel cobbles

@ 6 inches to 4 ½ feet – Bedrock- medium to coarse grain silty sandstone- buff, dry, hard, some iron staining, slightly blocky

@ 3 feet- Attitude: Bedding N40W, 20S iron stained bed

Total Depth – 4 ½ feet
No Water/No Caving

TEST PIT TP-12

0 to 6 inches - Soil - silty, fine medium grain sand, brown, dry, medium dense, rootlets, occasional gravel and cobbles

@6 inches to 6 feet – Bedrock- medium to coarse grain silty sandstone- buff, dry, hard

@2 feet– finer grained, occasional 1 to 2-inch beds

@4 feet- Attitude: Bedding NS, 10-15W- top of fine-grained bed

@ 5 ½ feet – Attitude: Bedding N5W, 25S- iron stained bed

Total Depth – 6 feet
No Water/No Caving

TEST PIT TP-13

0 to 6 inches – Soil - silty, fine medium grain sand, brown, dry, medium dense, rootlets, occasional gravel

@ 6 inches to 7 feet- Bedrock- medium grained sandstone- buff/tan, dry, hard, iron staining, some bedding

@ 3 feet to 5 feet – fine grained silty sandstone- buff, dry, hard,

@3 feet- Attitude: Bedding N10W, 10-15S- top of fine-grained bed

@ 5 feet to 7 feet – medium to coarse grain silty sandstone- buff, dry, hard, thin iron stained layers

@ 5 ½ feet – Attitude: Bedding N20E, 10N- coarse grained bed

Total Depth – 7 feet
No Water/No Caving

TEST PIT TP-14

0 to 12 feet – Colluvium/alluvium – silty sand- brown, dry, dense to very dense, occasional pebbles/cobbles

@ 10 ½ feet to 12 feet – medium to coarse grain silty sand- buff, dry, hard

Total Depth – 12 feet
No Water/No Caving

TEST PIT TP-15

0 to 16 feet – Colluvium/alluvium – silty sand to fine grain sand- grey, dry, medium dense to dense, occasional cobbles

@14 feet to 16 feet – medium to coarse grained sandy silt with cobbles, buff, dry

Total Depth – 16 feet
No Water/No Caving

TEST PIT TP-16

0 to 2 feet – Soil – silty clayey sand- dark brown, dry, dense, rootlets

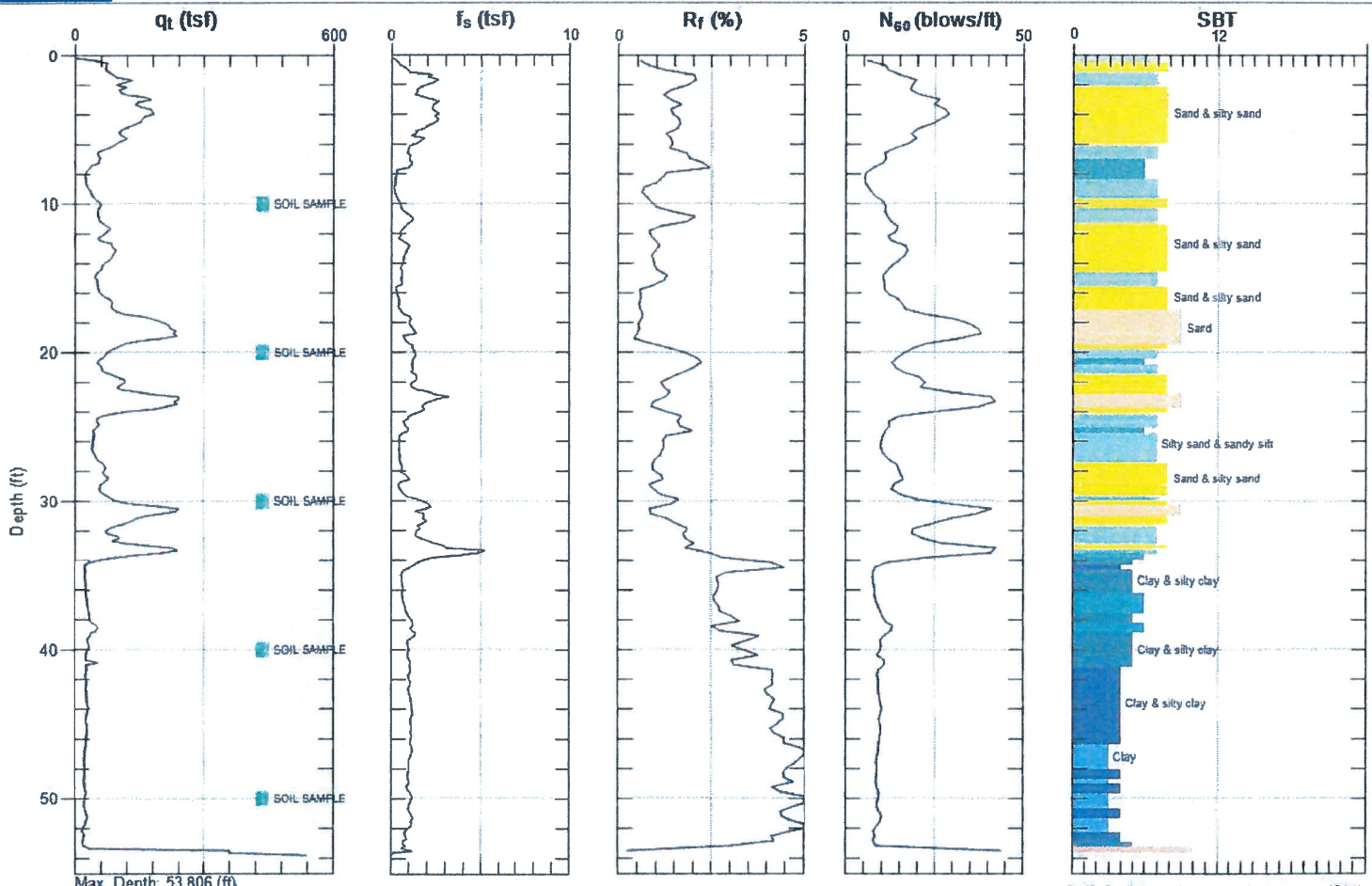
@ 2 feet – Alluvium – silty sand- brown/grey, dry, loose to medium dense, porosity, occasional pebbles/cobbles

@6 feet – medium to coarse grained sand- grey, dry, occasional gravel and cobbles

Total Depth – 12 ½ feet
No Water/No Caving

PETRA GEOSCIENCES, INC.

Site: RESID. PROJ AT BANQ.
Sounding: CPT-1
Engineer: T.WOLFE
Date: 6/23/2017 11:59



Max. Depth: 53.806 (ft)
Avg. Interval: 0.328 (ft)

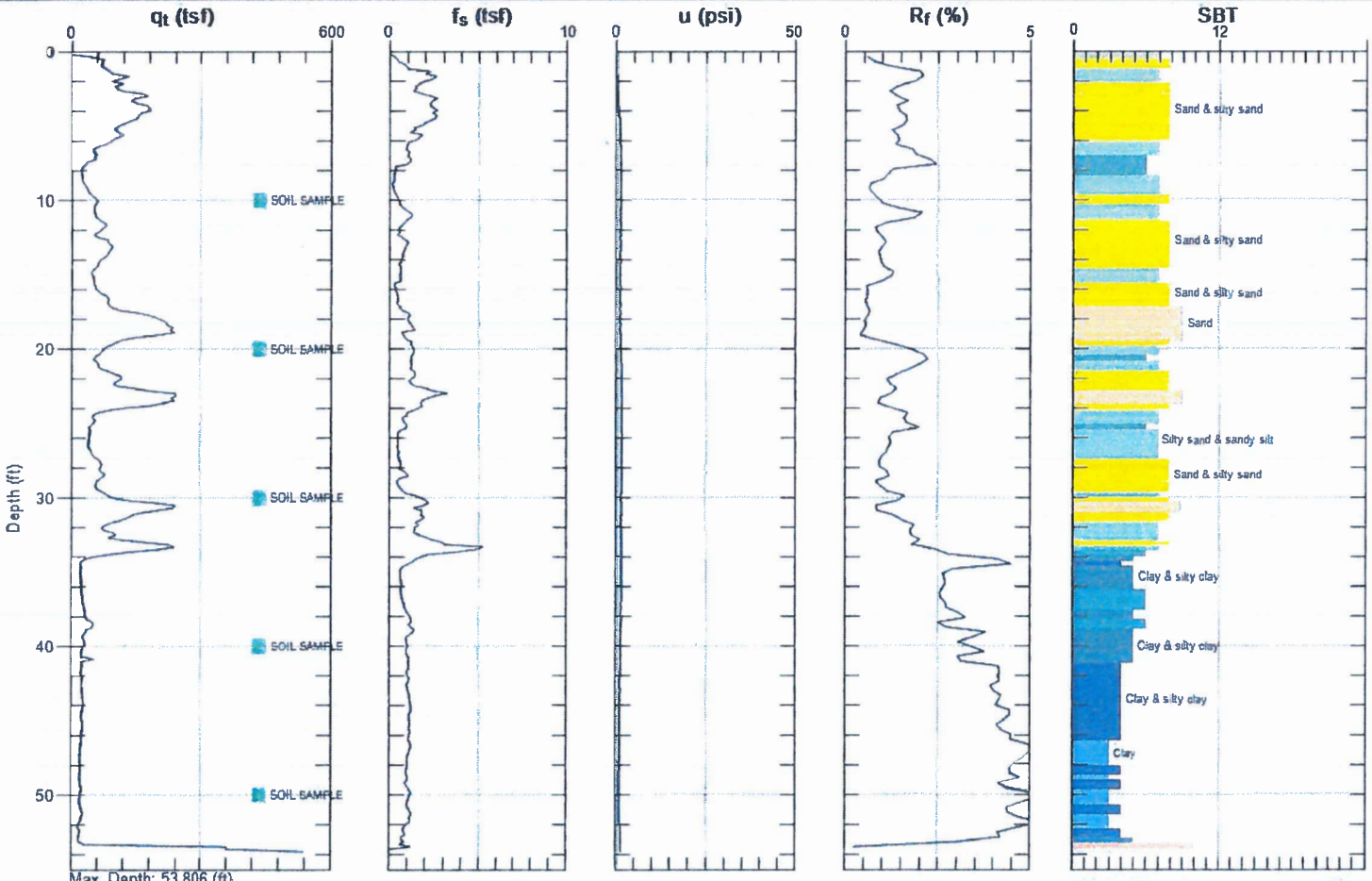
SBT: Soil Behavior Type (Robertson 1990)

GREGG

PETRA GEOSCIENCES, INC.

Site: RESID. PROJ AT BANQ. Engineer: T.WOLFE

Sounding: CPT-1 Date: 6/23/2017 11:59



Max. Depth: 53.806 (ft)
Avg. Interval: 0.328 (ft)

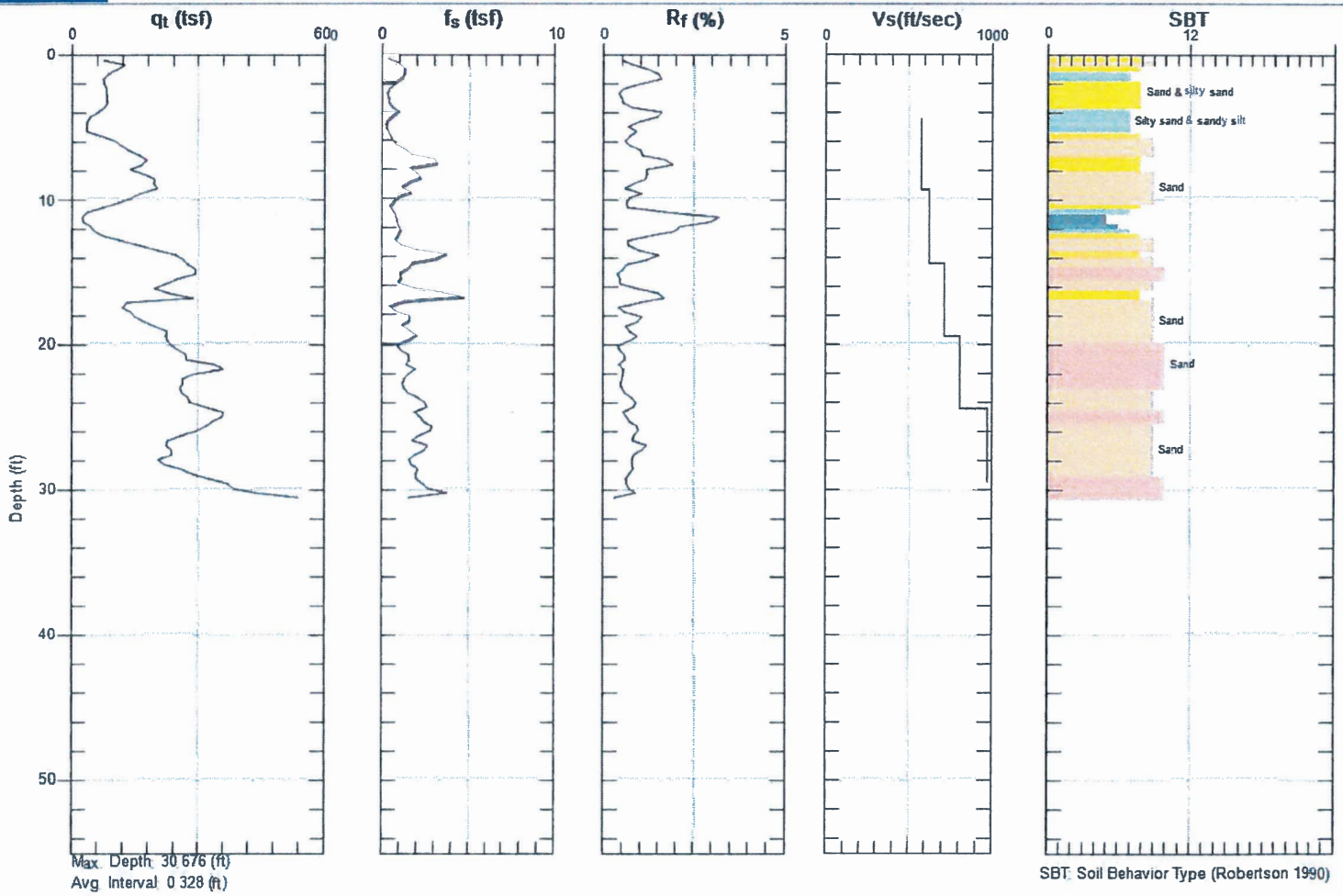
SBT: Soil Behavior Type (Robertson 1990)

GREGG

PETRA GEOSCIENCES, INC.

Site: RESID. PROJ AT BANQ. Engineer: T.WOLFE

Sounding: CPT-2 Date: 6/23/2017 10:37



Max. Depth: 30.676 (ft)
Avg. Interval: 0.328 (ft)

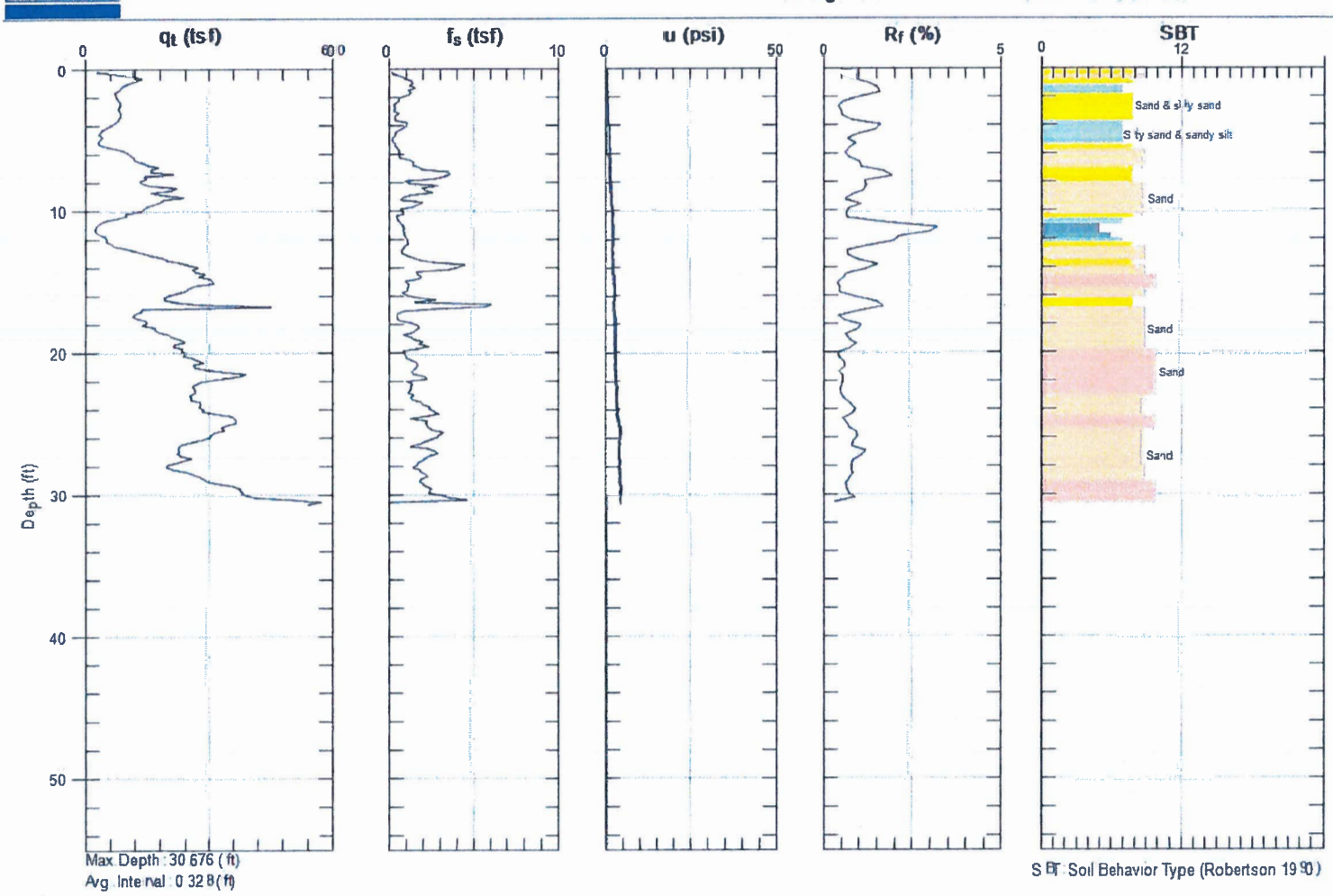
SBT: Soil Behavior Type (Robertson 1990)

GREGG

PETRA GEOSCIENCES, INC.

Site: RESID. PROJ AT BANQ. Engineer: T.WOLFE

Sounding: CPT-2 Date: 6/23/2017 10:37



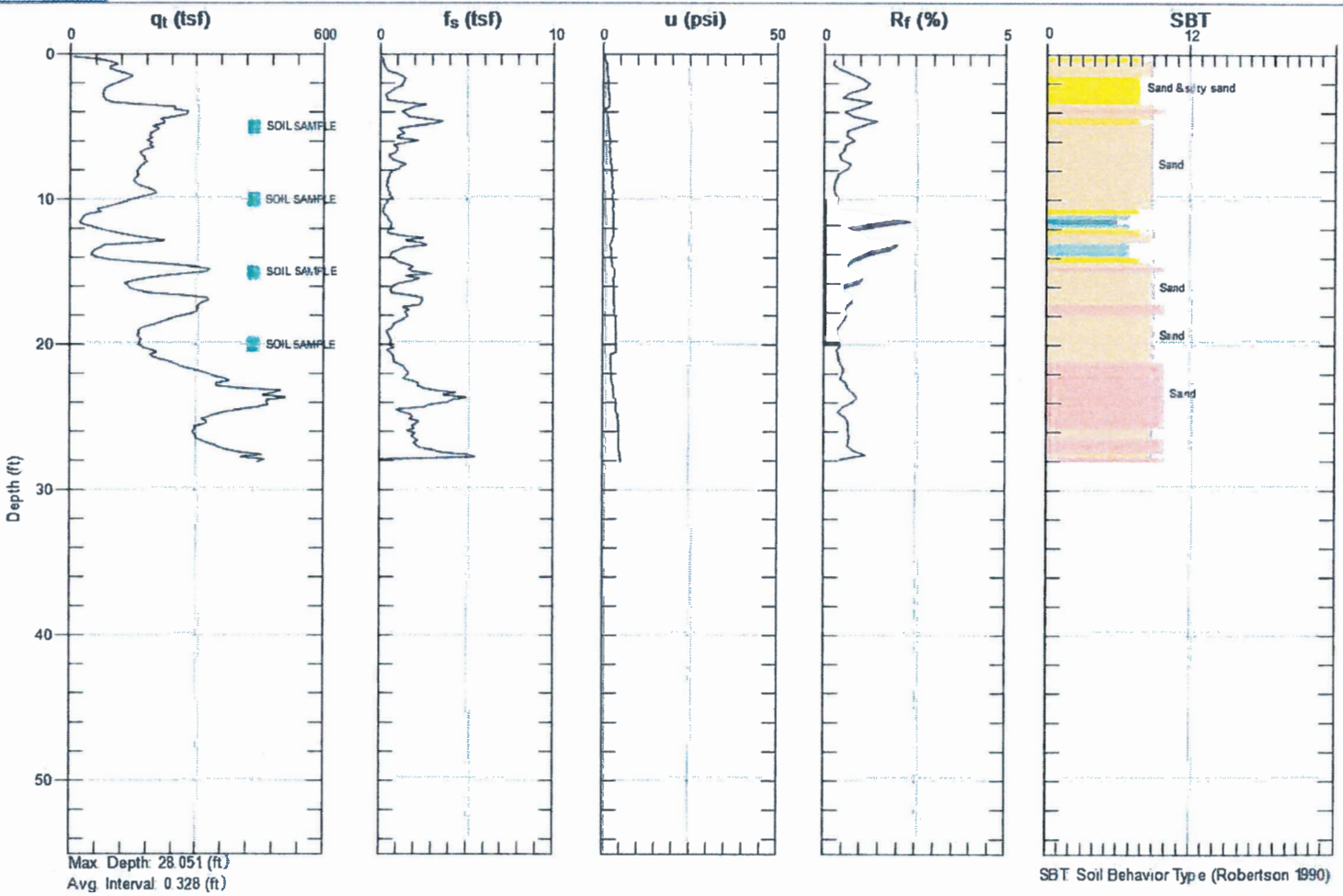
Max Depth : 30.676 (ft)
Avg. Interval : 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

PETRA GEOSCIENCES, INC.

Site: RESID. PROJ AT BANQ. Engineer: T.WOLFE

Sounding: CPT-3B Date: 6/23/2017 08:58



Max. Depth: 28.051 (ft)
Avg. Interval: 0.328 (ft)

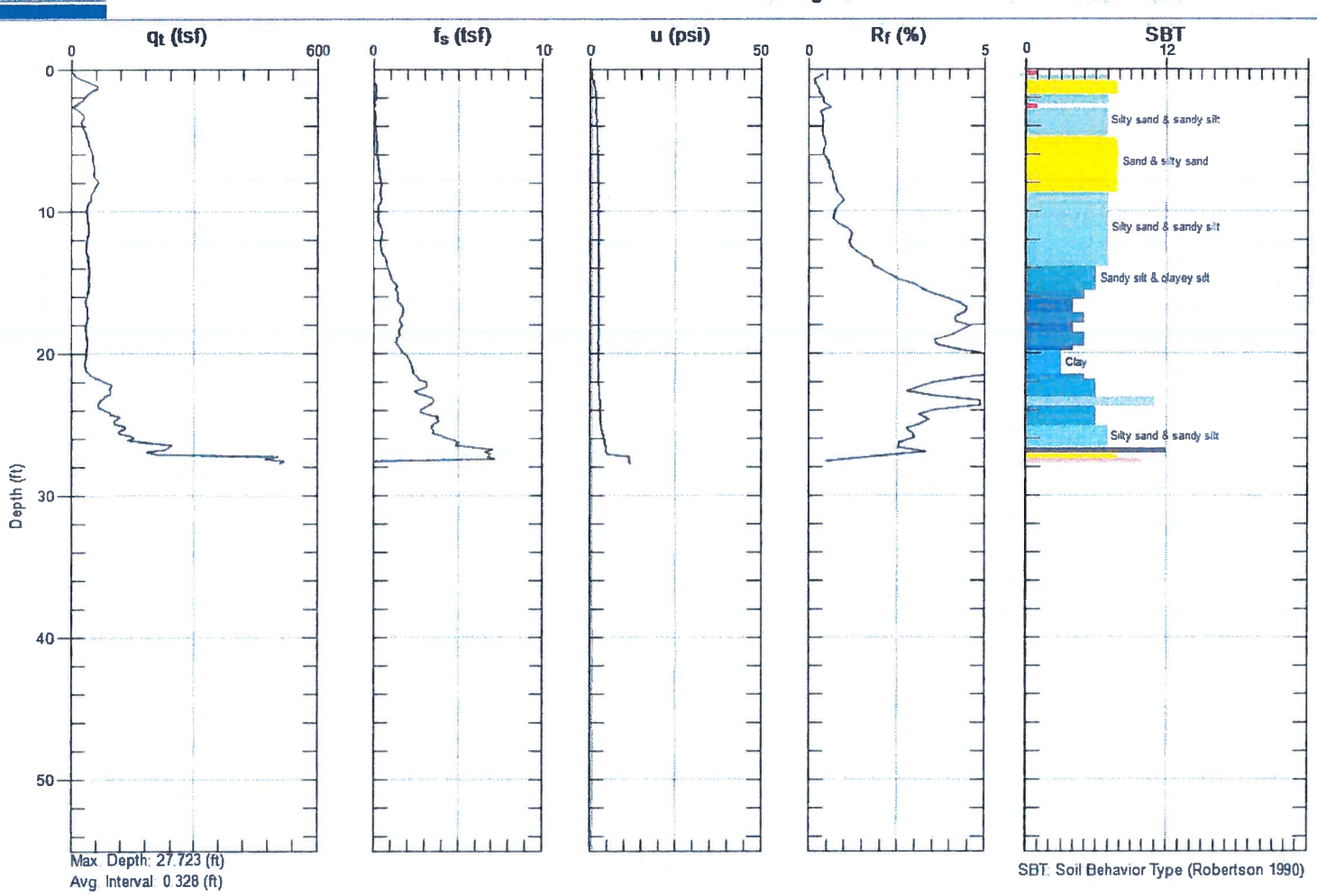
SBT: Soil Behavior Type (Robertson 1990)

GREGG

PETRA GEOSCIENCES, INC.

Site: RESID. PROJ AT BANQ. Engineer: T.WOLFE

Sounding: CPT-4 Date: 6/23/2017 01:42



Max. Depth: 27.723 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG DRILLING, INC.
www.greggdrilling.com

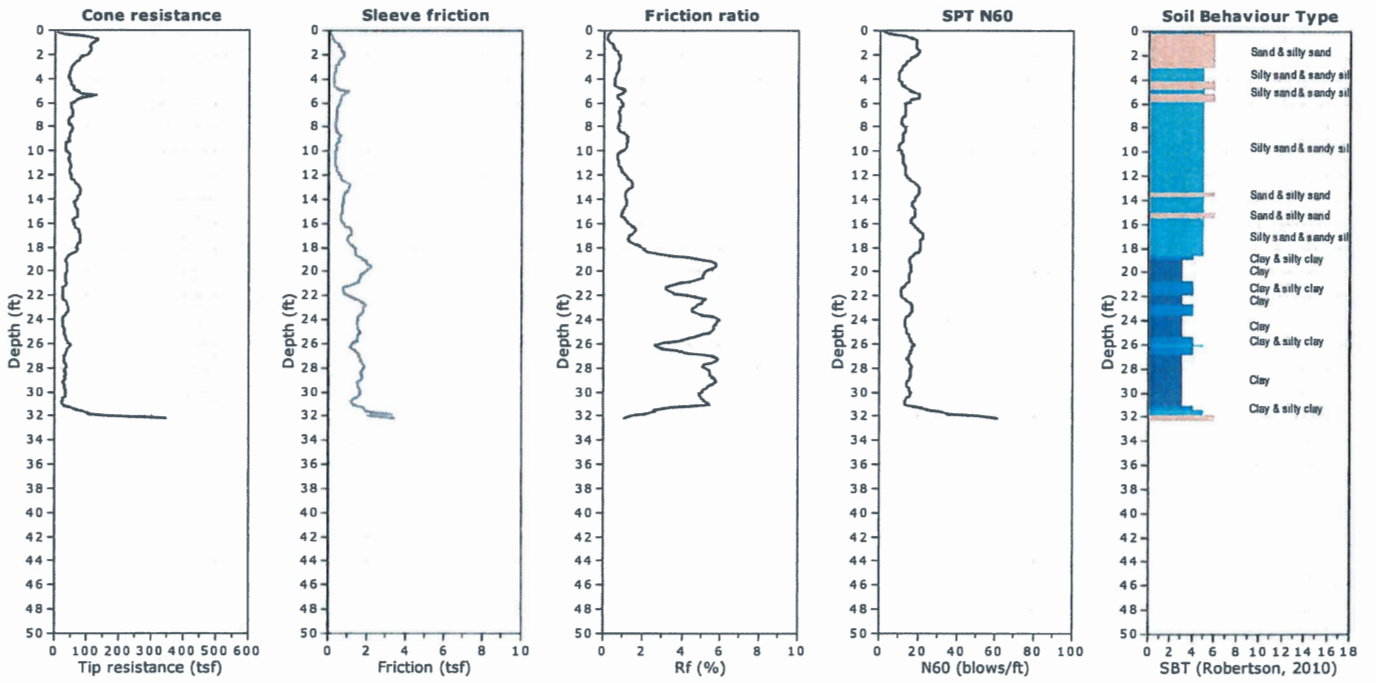
CPT: CPT-1

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 32.15 ft, Date: 10/1/2018



SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

GREGG DRILLING, INC.
www.greggdrilling.com

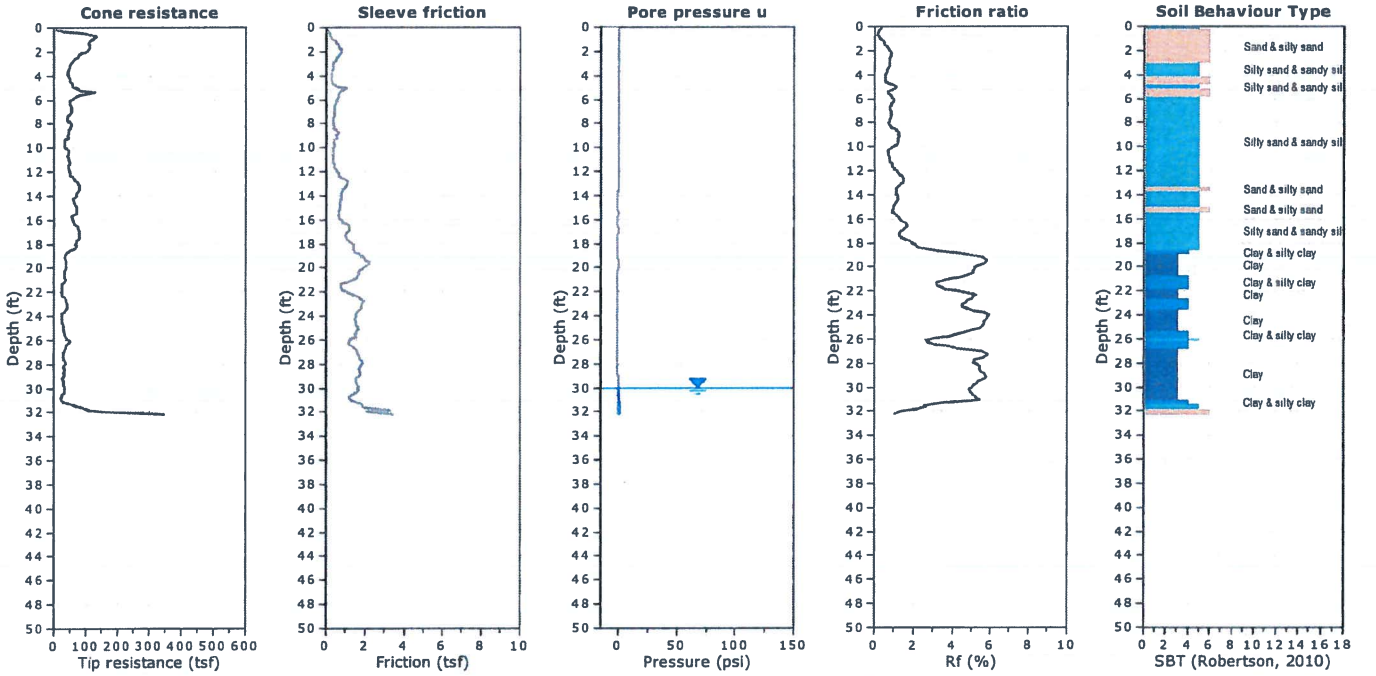
CPT: CPT-1

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 32.15 ft, Date: 10/1/2018



SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty clay	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to clayey sand
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

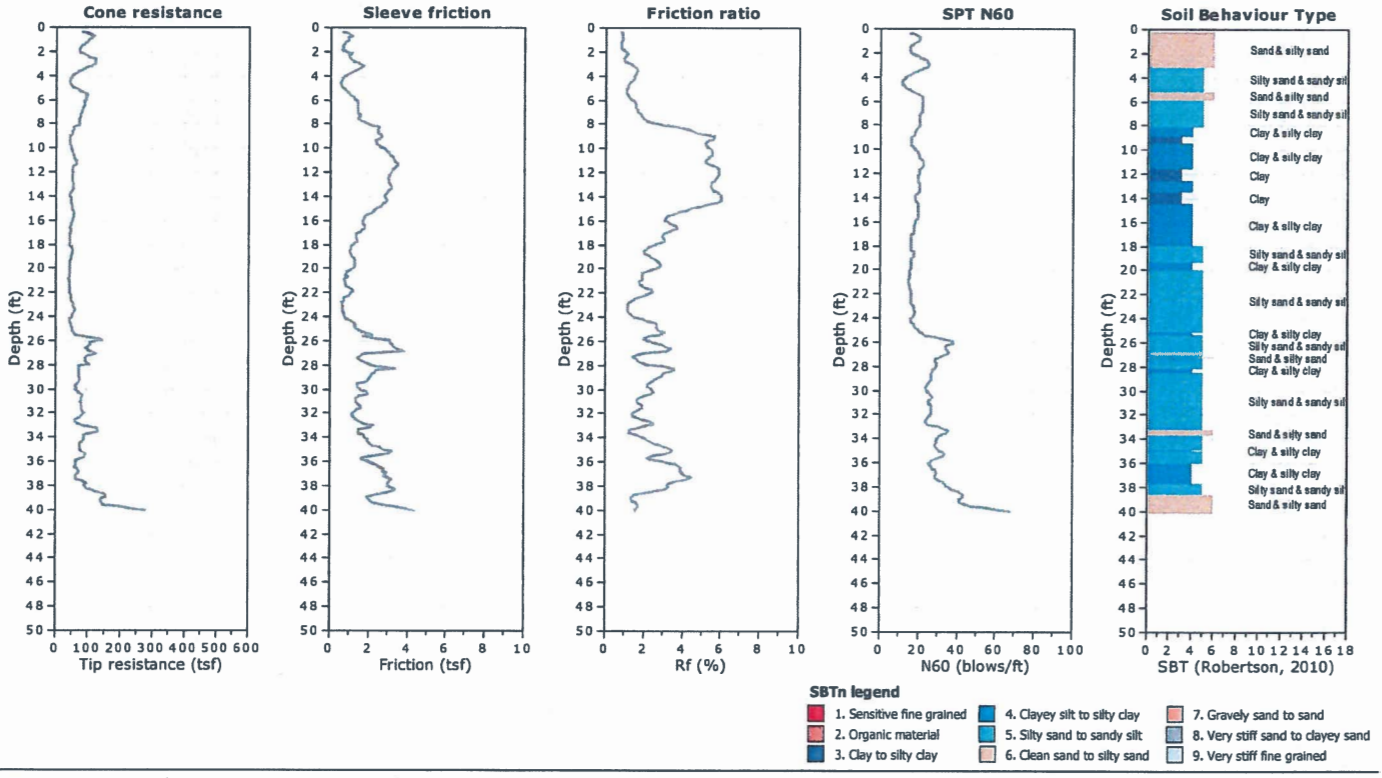
CPT: CPT-2

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 40.03 ft, Date: 10/1/2018



GREGG DRILLING, INC.
www.greggdrilling.com

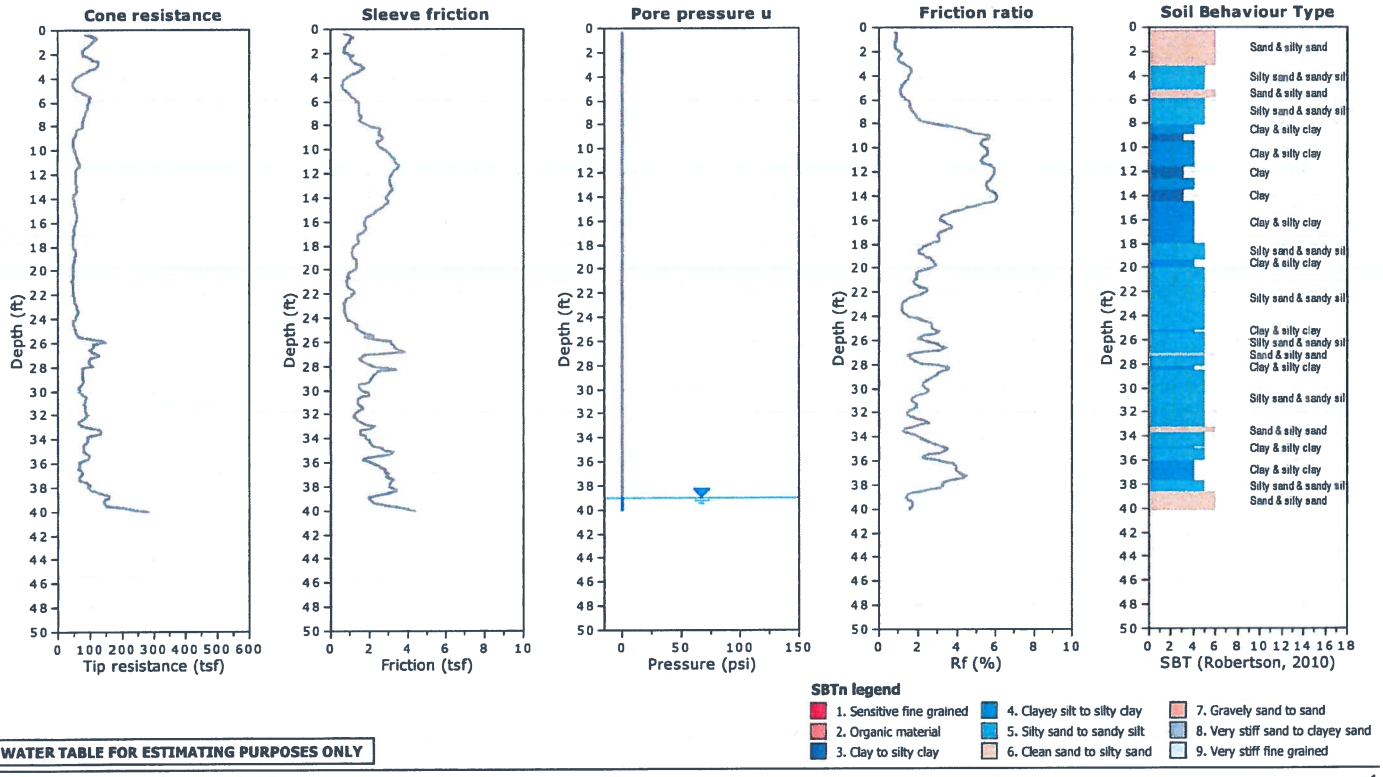
CPT: CPT-2

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 40.03 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

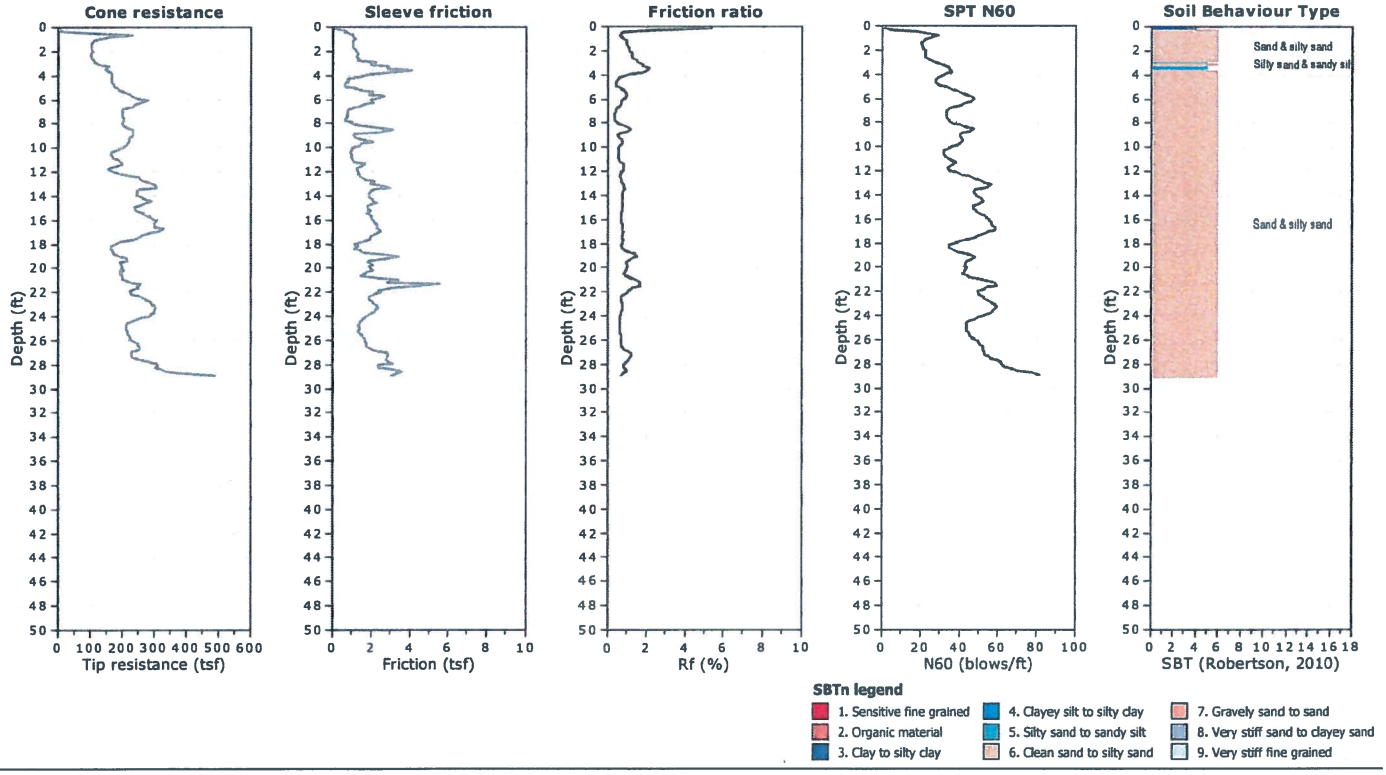
CPT: CPT-4

CLIENT: PETRA GEOSCIENCES, INC.

Field Rep: ALI

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Total depth: 28.87 ft, Date: 10/1/2018



GREGG DRILLING, INC.
www.greggdrilling.com

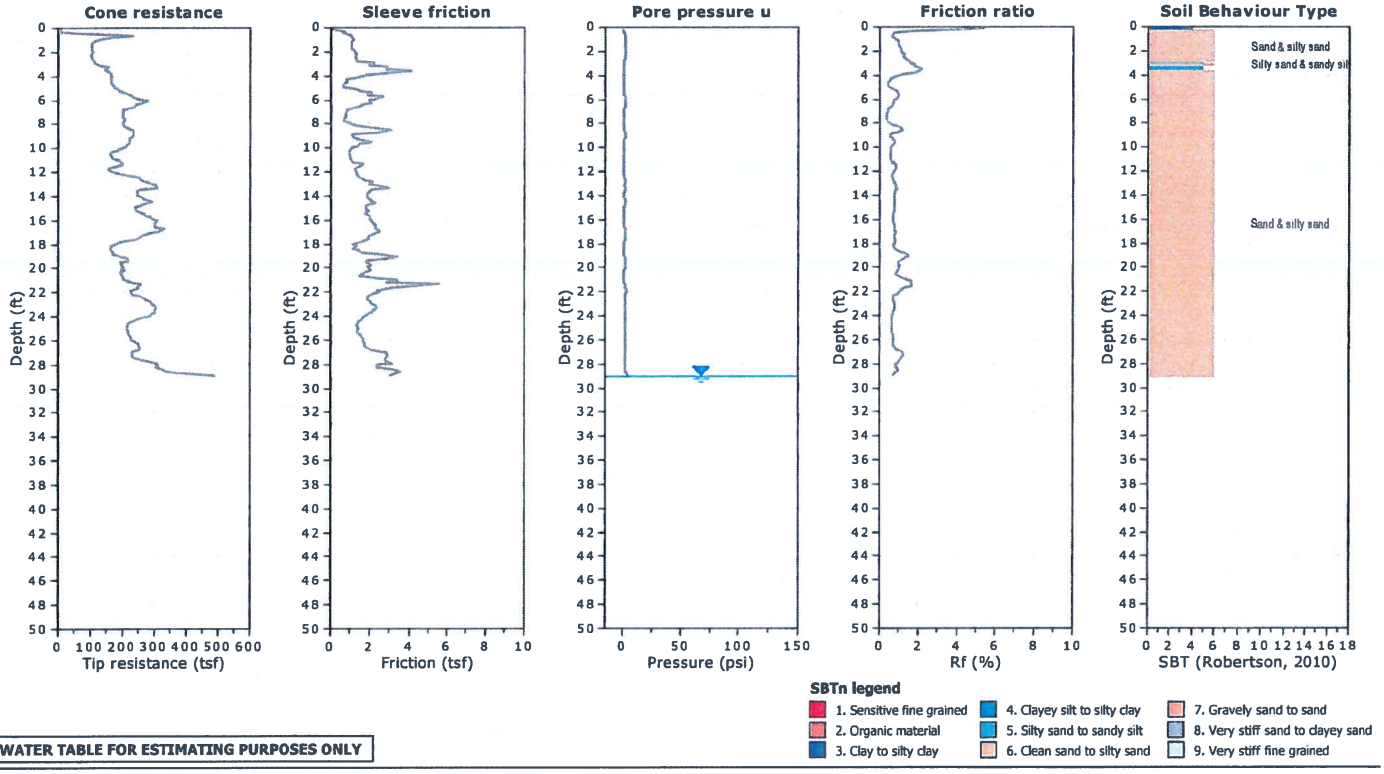
CPT: CPT-4

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 28.87 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

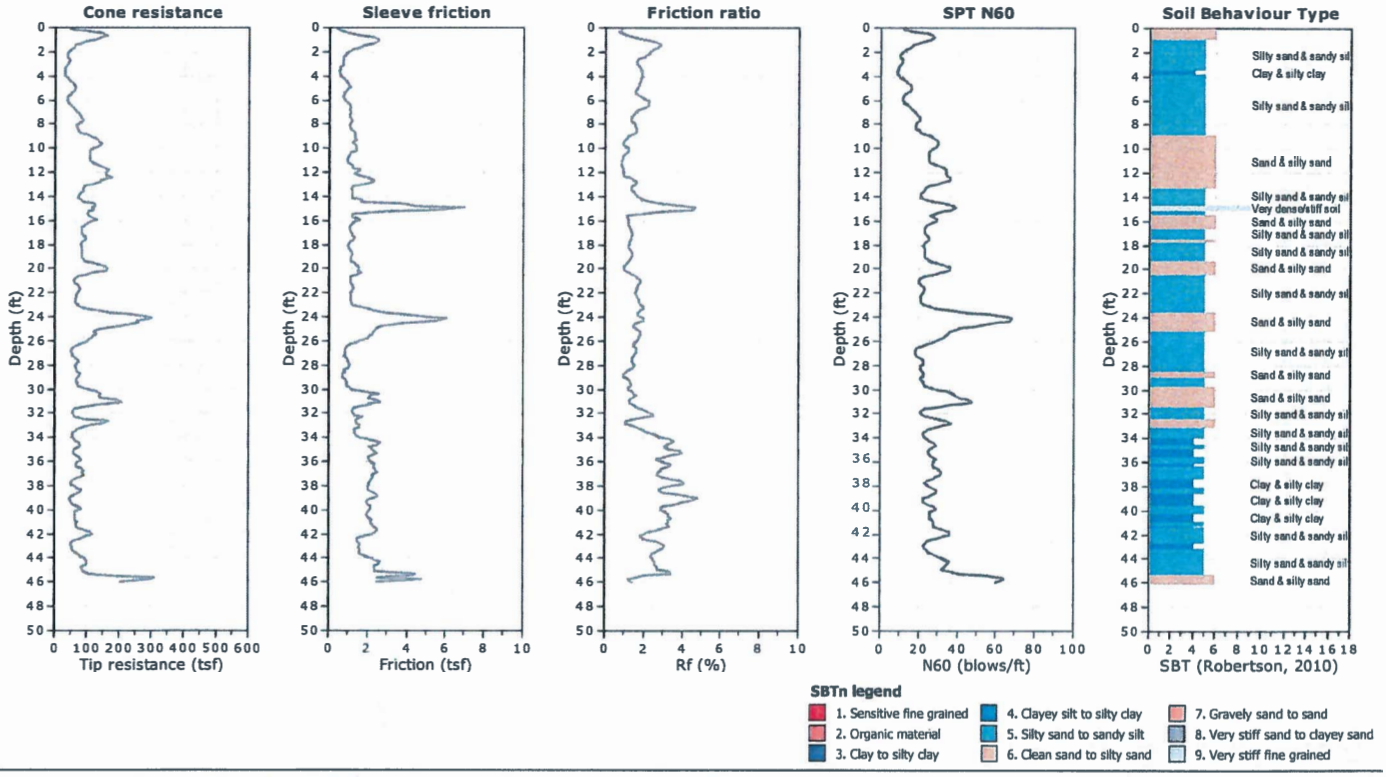
CPT: CPT-7

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 45.93 ft, Date: 10/1/2018



SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

GREGG DRILLING, INC.
www.greggdrilling.com

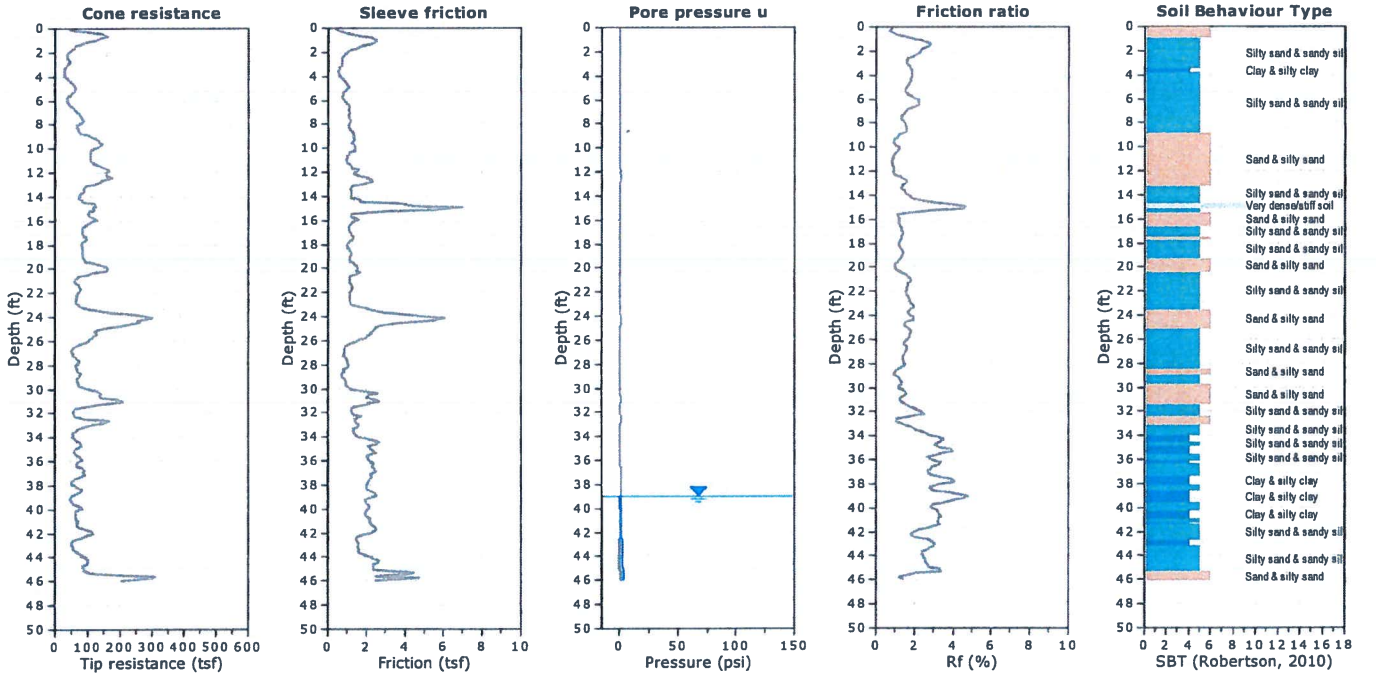
CPT: CPT-7

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 45.93 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

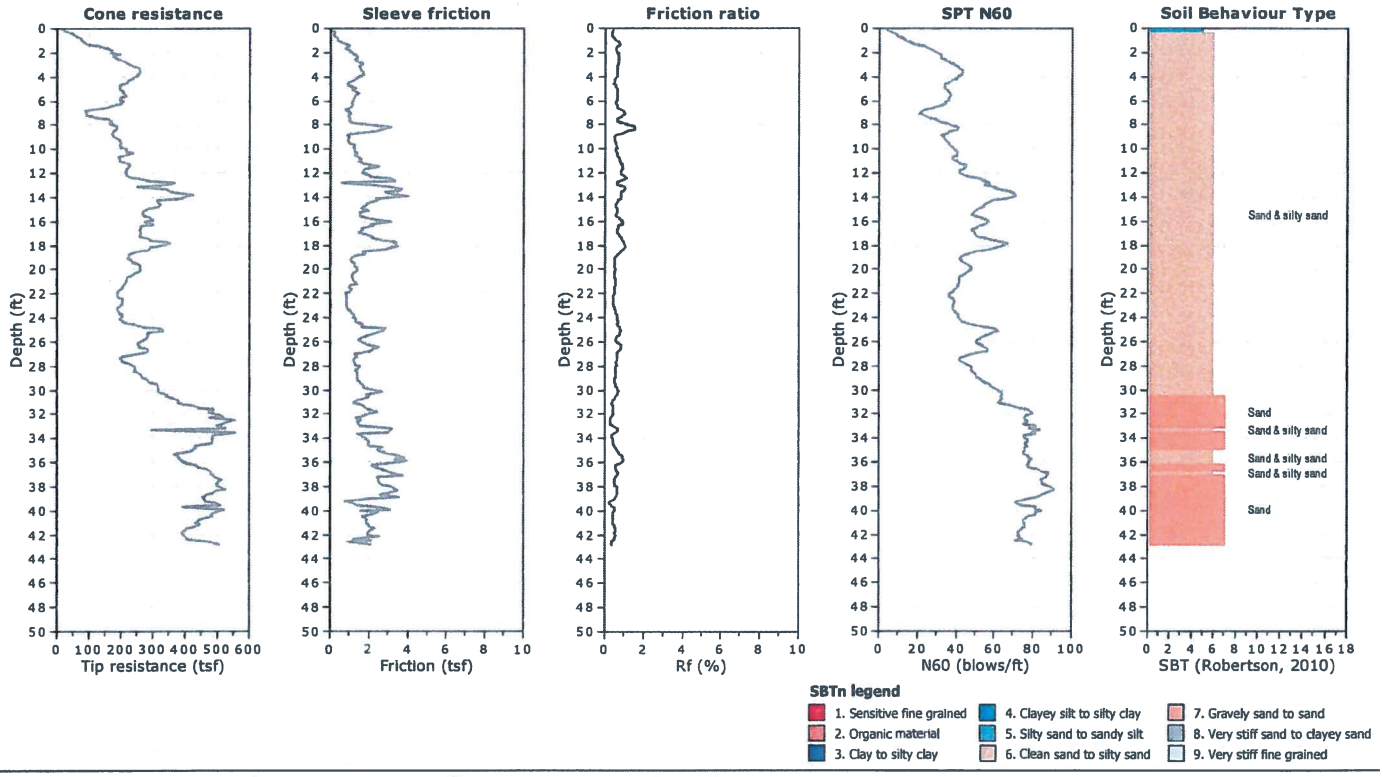
CPT: SCPT-3

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 42.81 ft, Date: 10/1/2018



GREGG DRILLING, INC.
www.greggdrilling.com

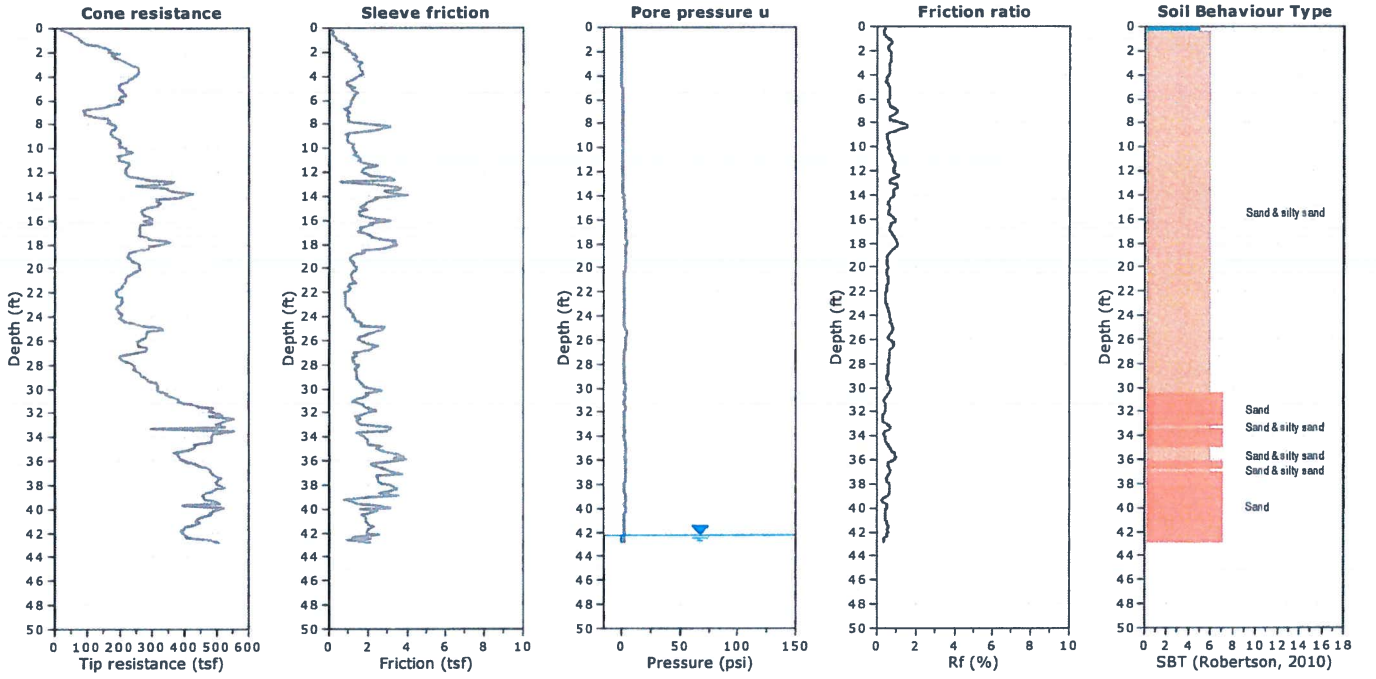
CPT: SCPT-3

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 42.81 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

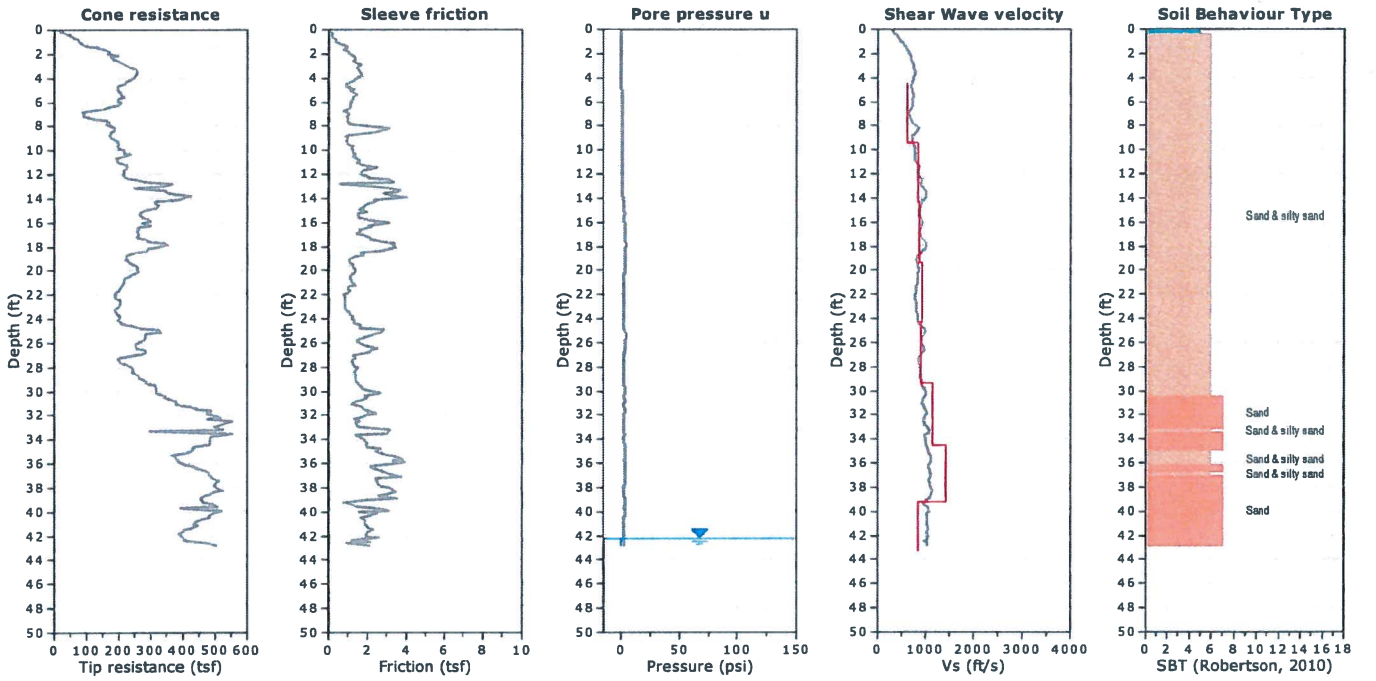
CPT: SCPT-3

CLIENT: PETRA GEOSCIENCES, INC.

Field Rep: ALI

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Total depth: 42.81 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

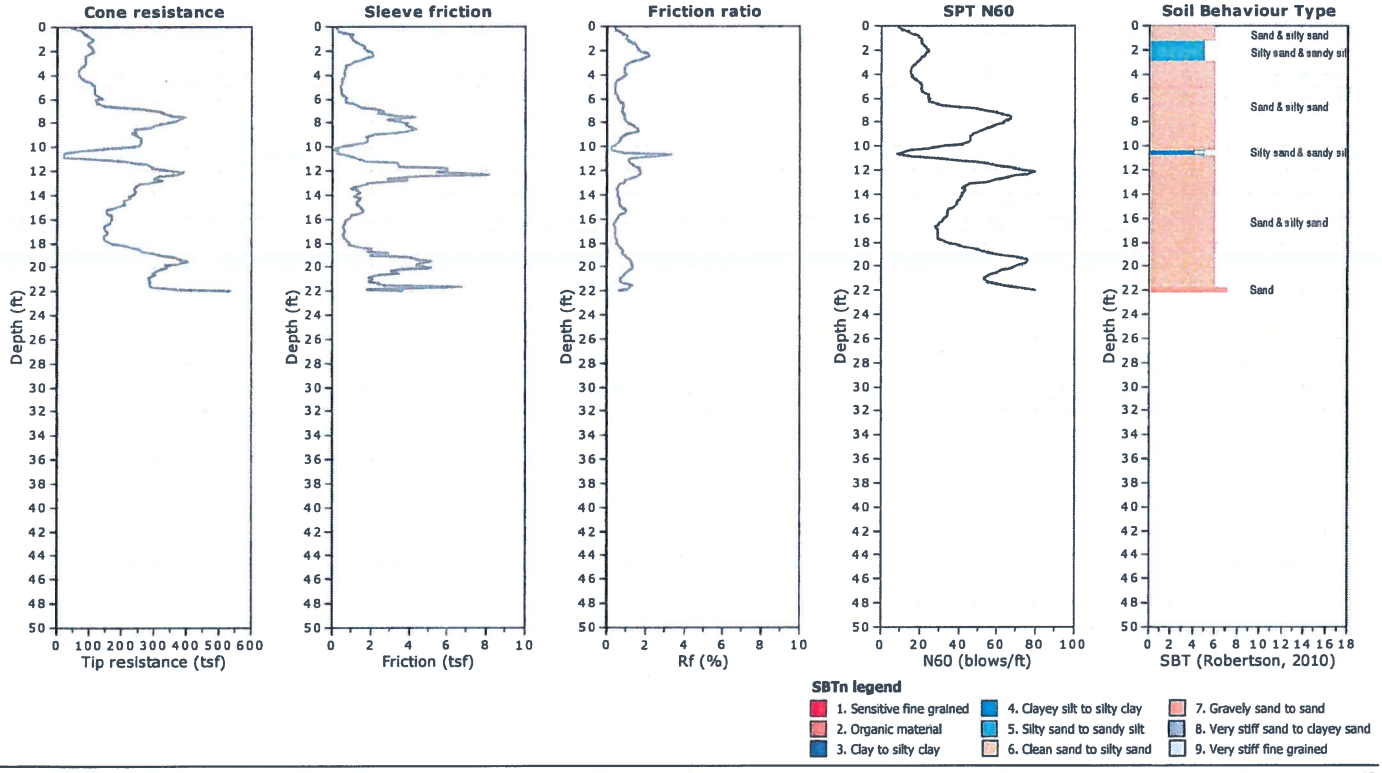
CPT: SCPT-5

CLIENT: PETRA GEOSCIENCES, INC.

Field Rep: ALI

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Total depth: 21.98 ft, Date: 10/1/2018



GREGG DRILLING, INC.
www.greggdrilling.com

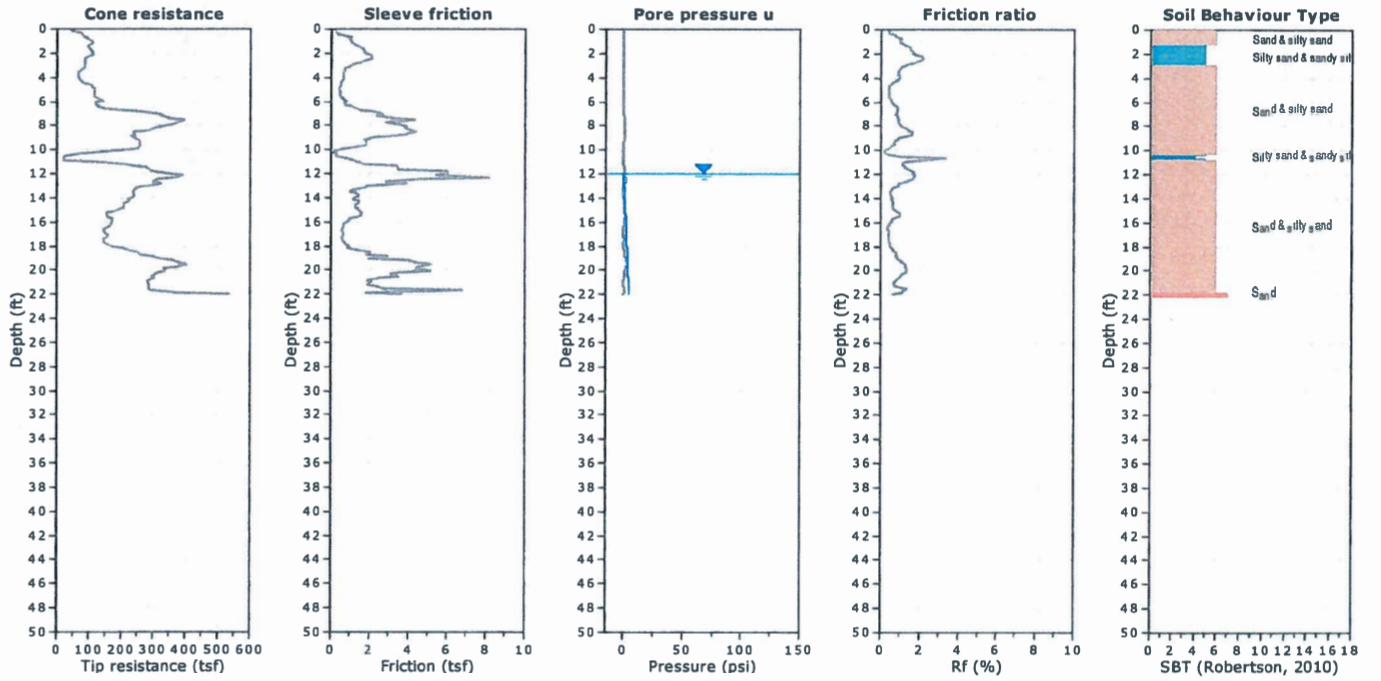
CPT: SCPT-5

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 21.98 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

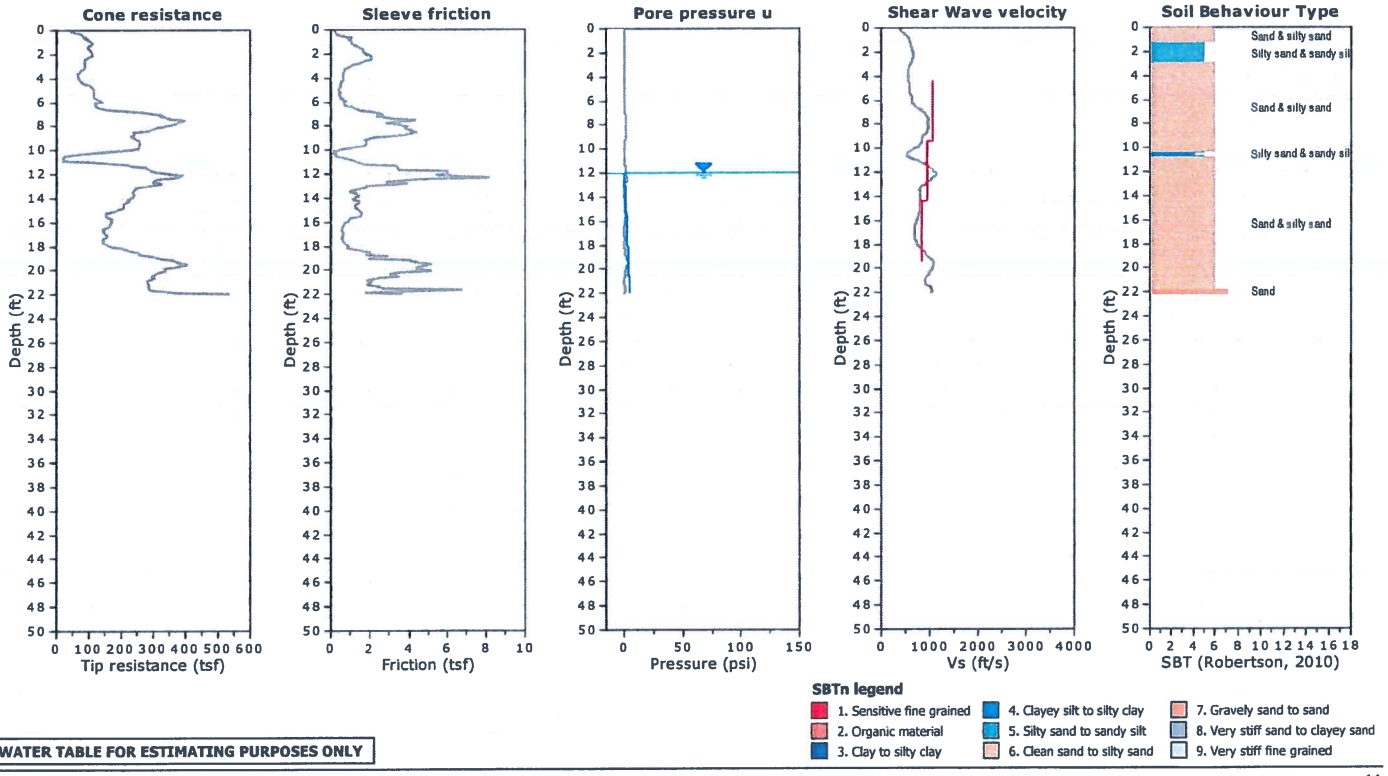
CPT: SCPT-5

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 21.98 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

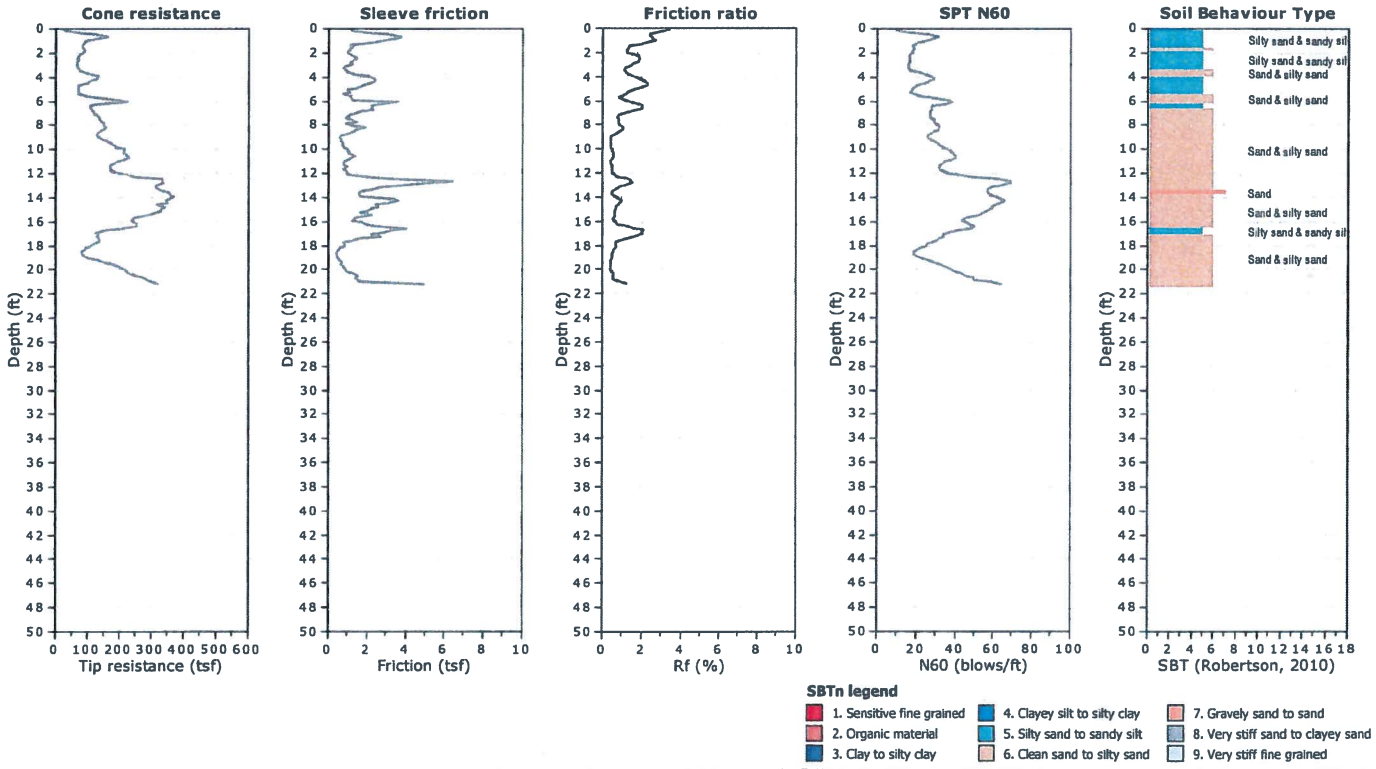
CPT: SCPT-5A

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 21.16 ft, Date: 10/1/2018



GREGG DRILLING, INC.
www.greggdrilling.com

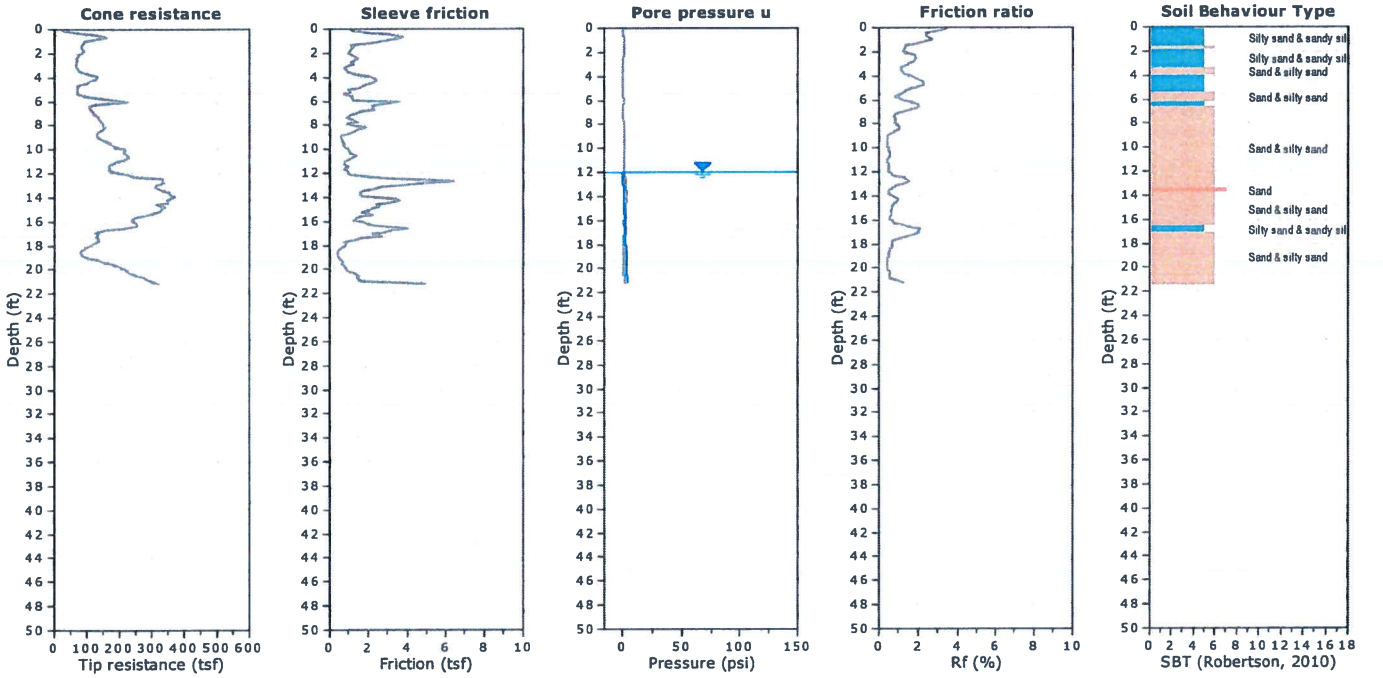
CPT: SCPT-5A

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 21.16 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

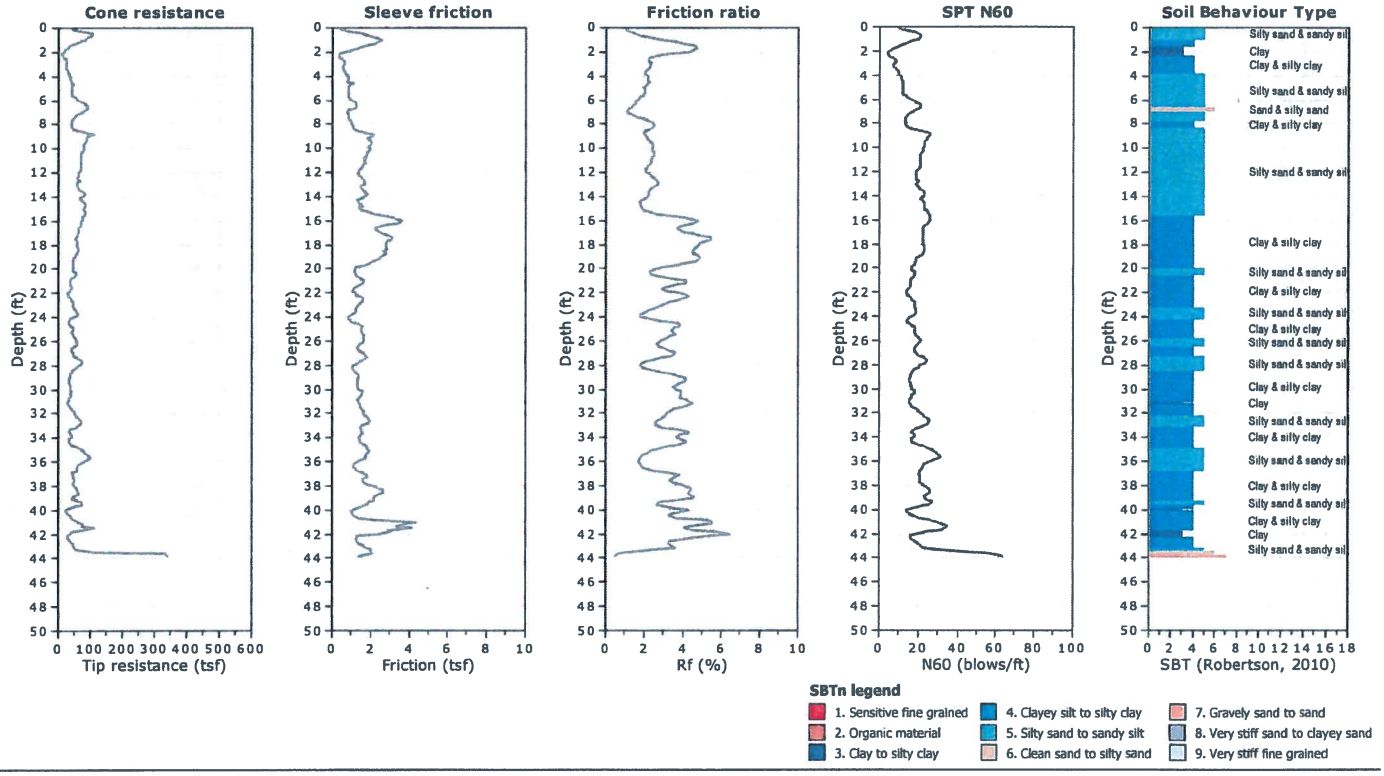
CPT: SCPT-6

CLIENT: PETRA GEOSCIENCES, INC.

Field Rep: ALI

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Total depth: 43.80 ft, Date: 10/1/2018



GREGG DRILLING, INC.
www.greggdrilling.com

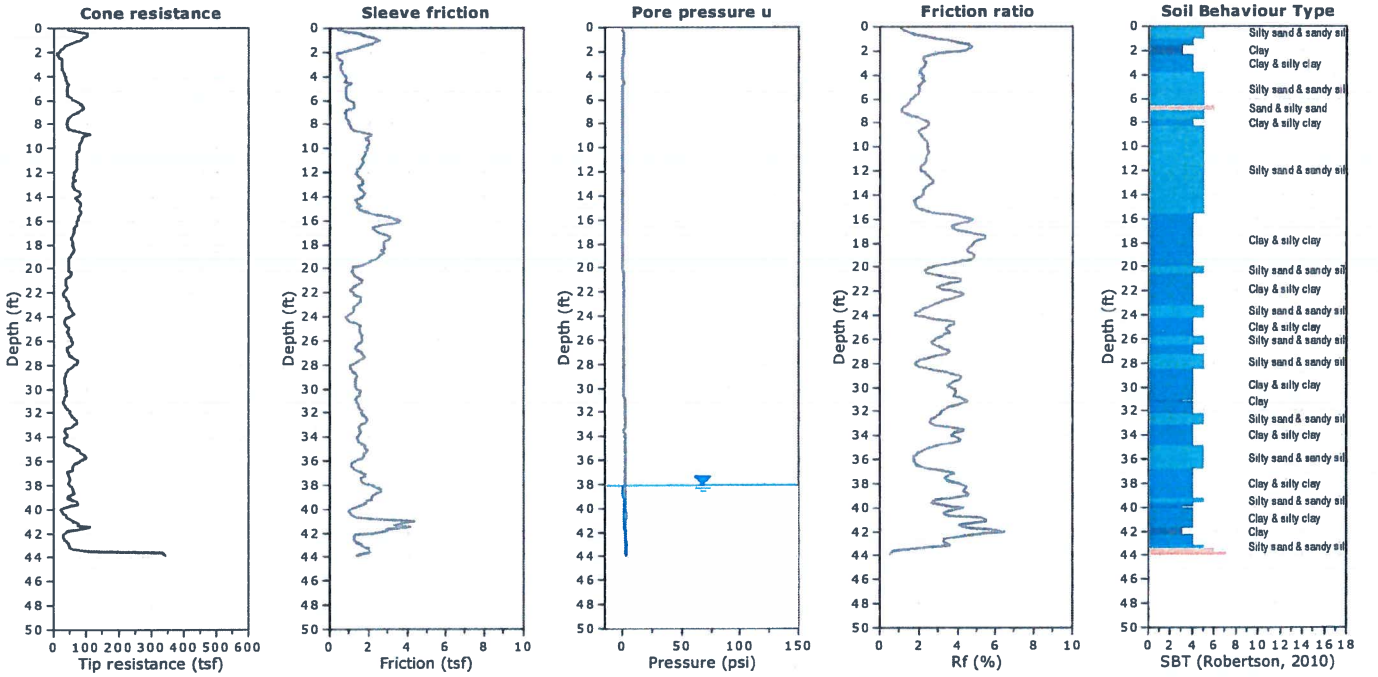
CPT: SCPT-6

CLIENT: PETRA GEOSCIENCES, INC.

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Field Rep: ALI

Total depth: 43.80 ft, Date: 10/1/2018



SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, INC.
www.greggdrilling.com

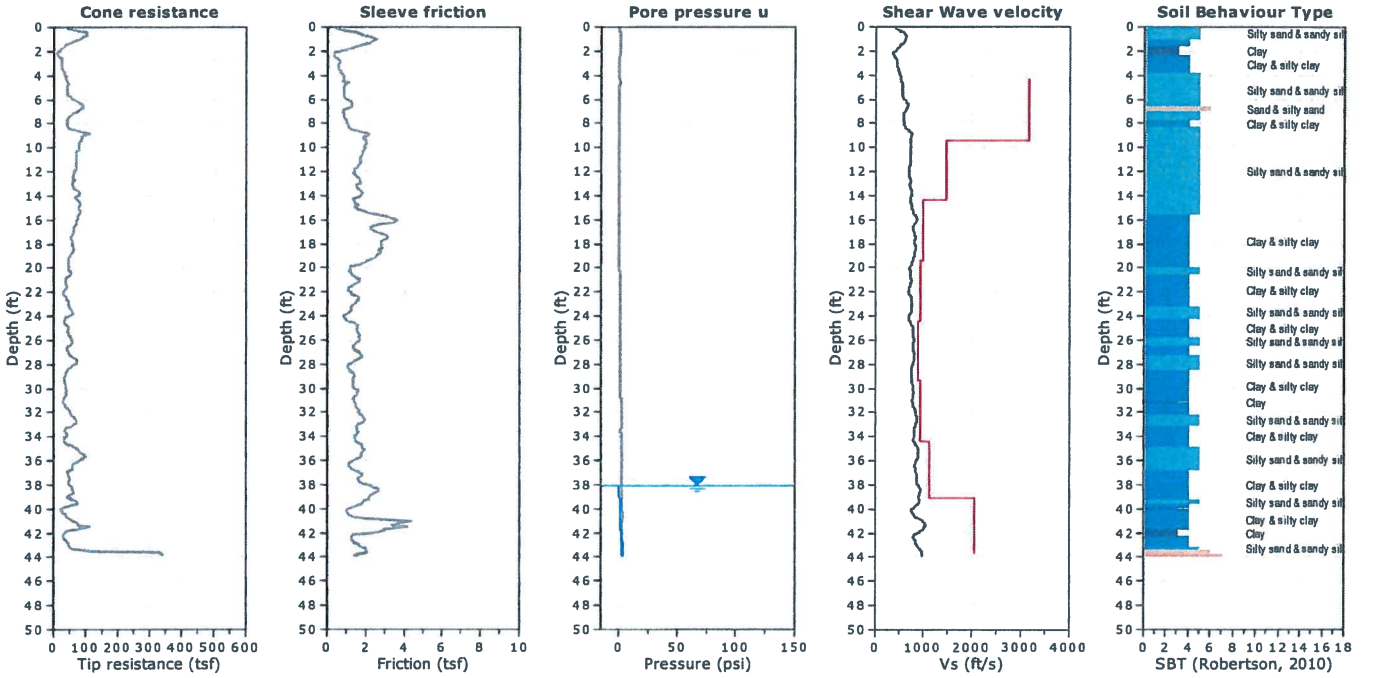
CPT: SCPT-6

CLIENT: PETRA GEOSCIENCES, INC.

Field Rep: ALI

SITE: BOUQUET CANYON - 20605 SUE DRIVE, SANTA CLARITA, CA

Total depth: 43.80 ft, Date: 10/1/2018



WATER TABLE FOR ESTIMATING PURPOSES ONLY

APPENDIX B

LIQUEFACTION ANALYSES

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Petra Geosciences, Inc.
3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
http://www.petra-inc.com/

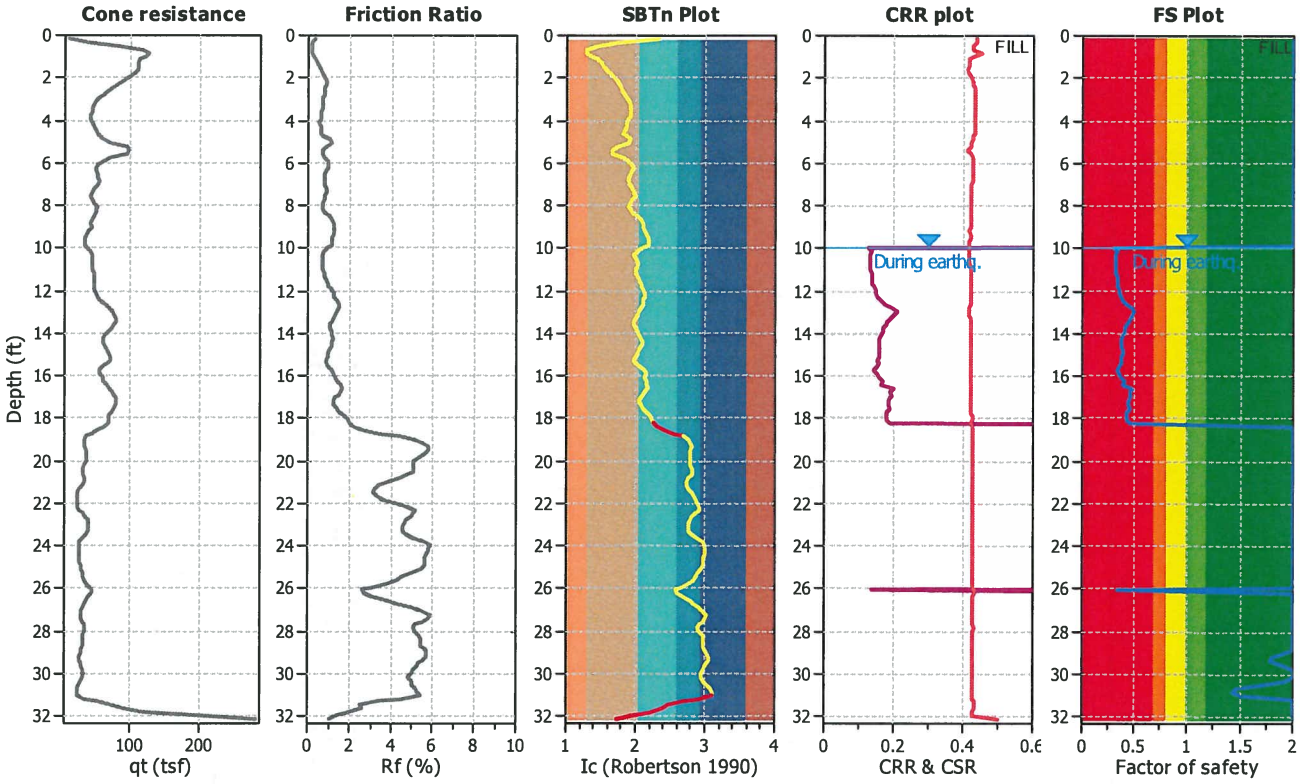
LIQUEFACTION ANALYSIS REPORT

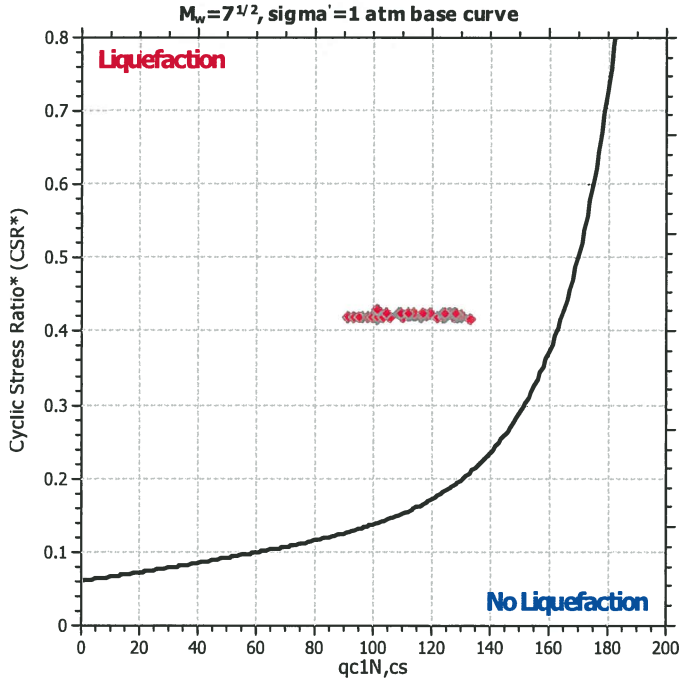
Project title : Bouquet Canyon **Location : Santa Clarita, California**

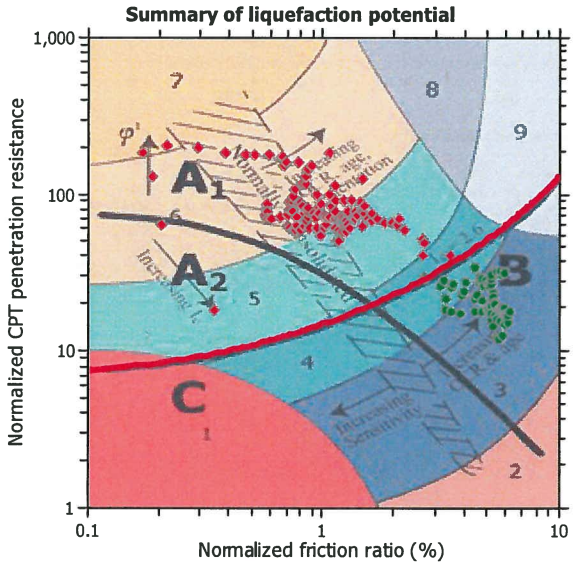
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	95.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	53.00 ft	Fill height:	43.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

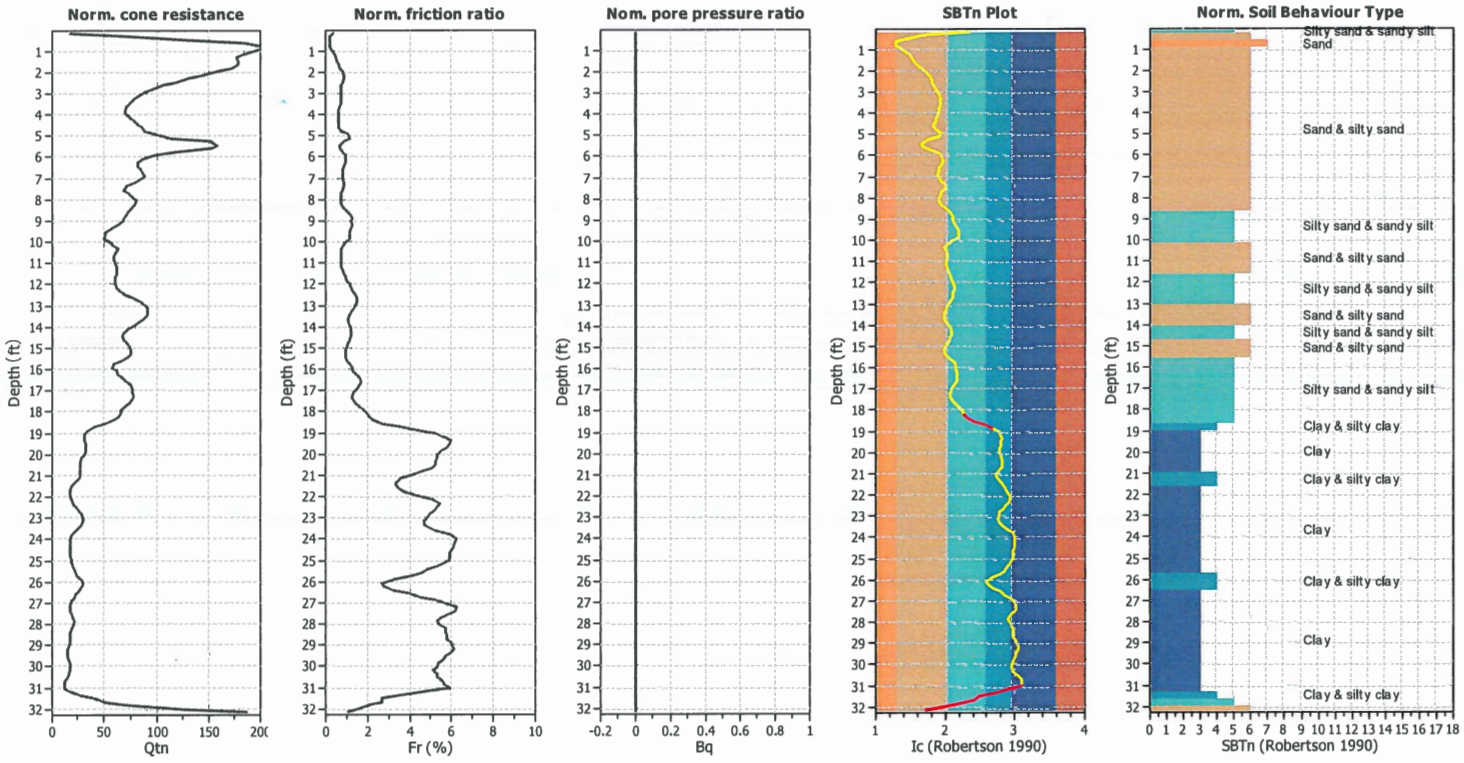






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



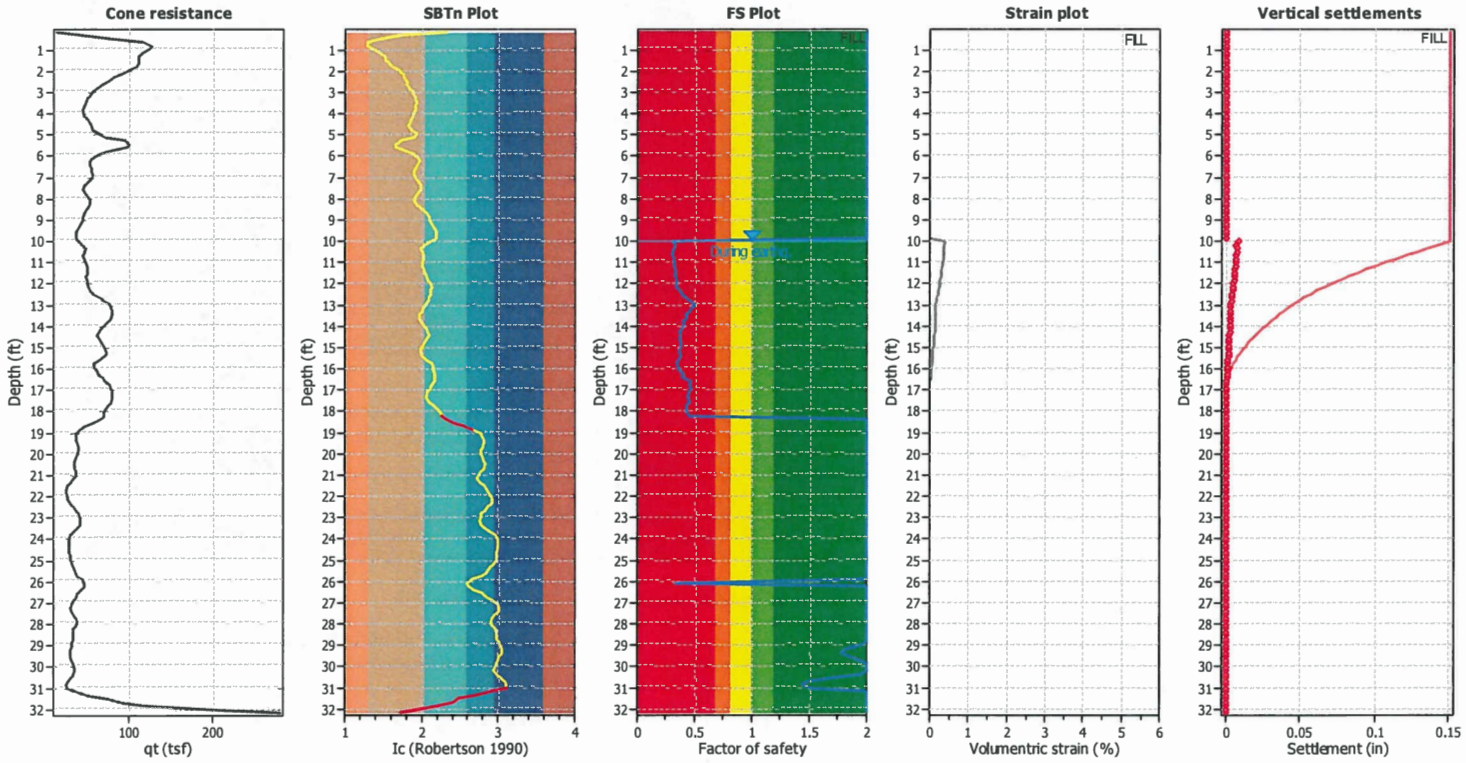
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	53.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	95.00 ft	Fill height:	43.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_t corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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Costa Mesa, CA 92626
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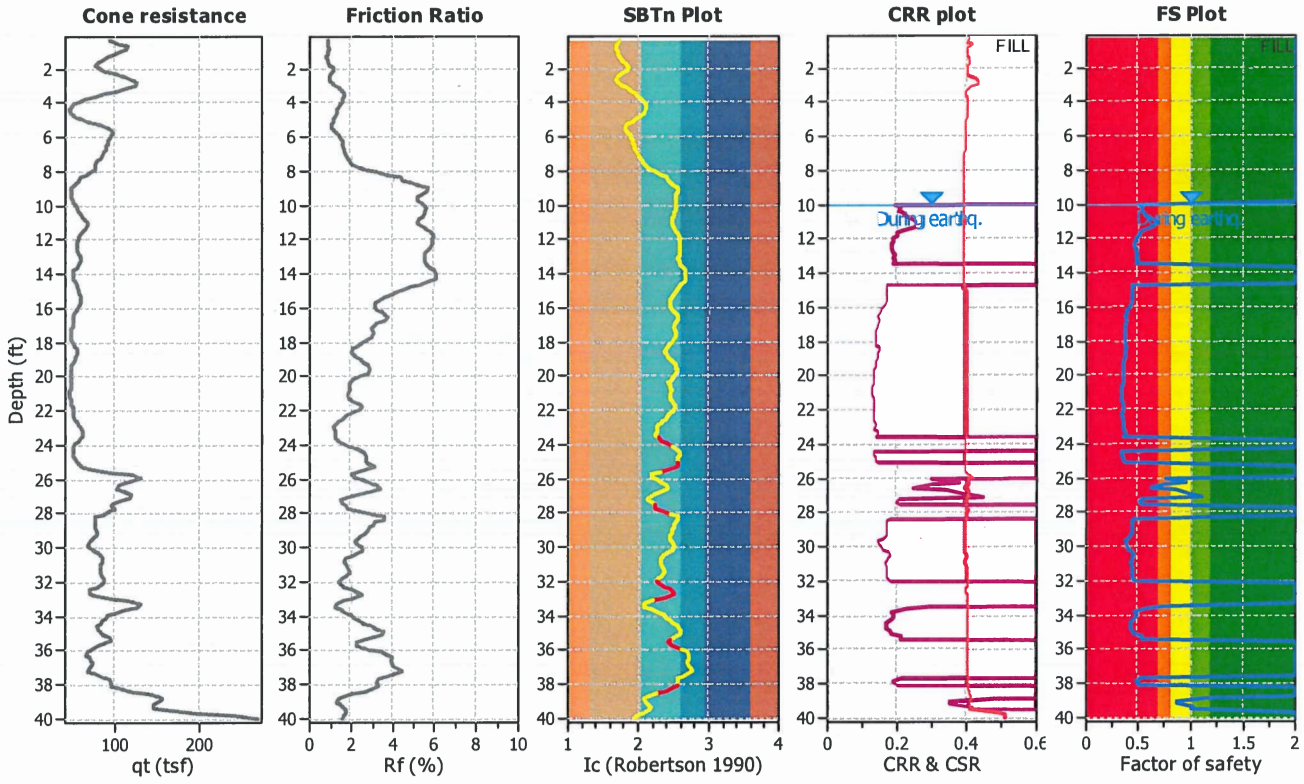
LIQUEFACTION ANALYSIS REPORT

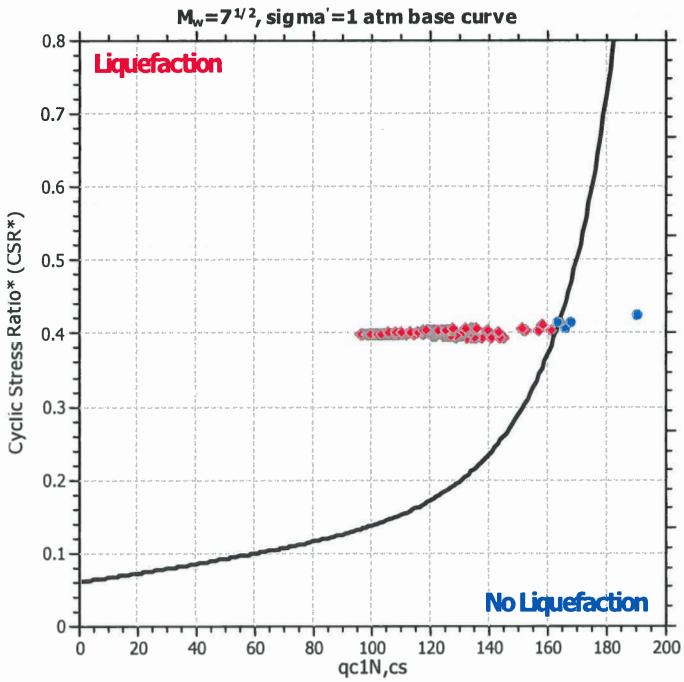
Project title : Bouquet Canyon **Location : Santa Clarita, California**

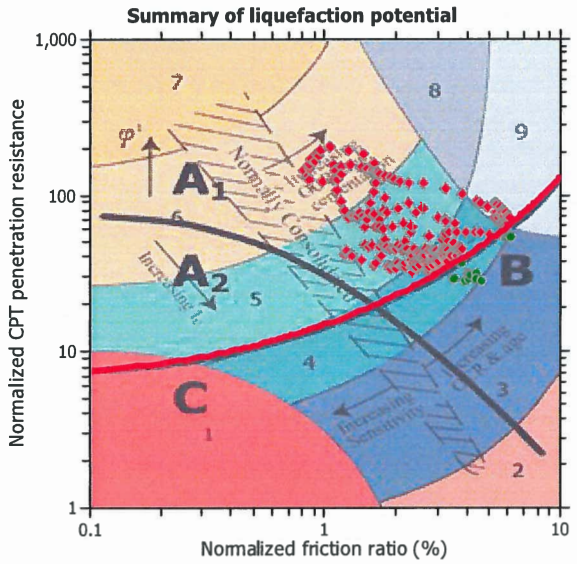
CPT file : CPT-2

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	100.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	64.00 ft	Fill height:	54.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

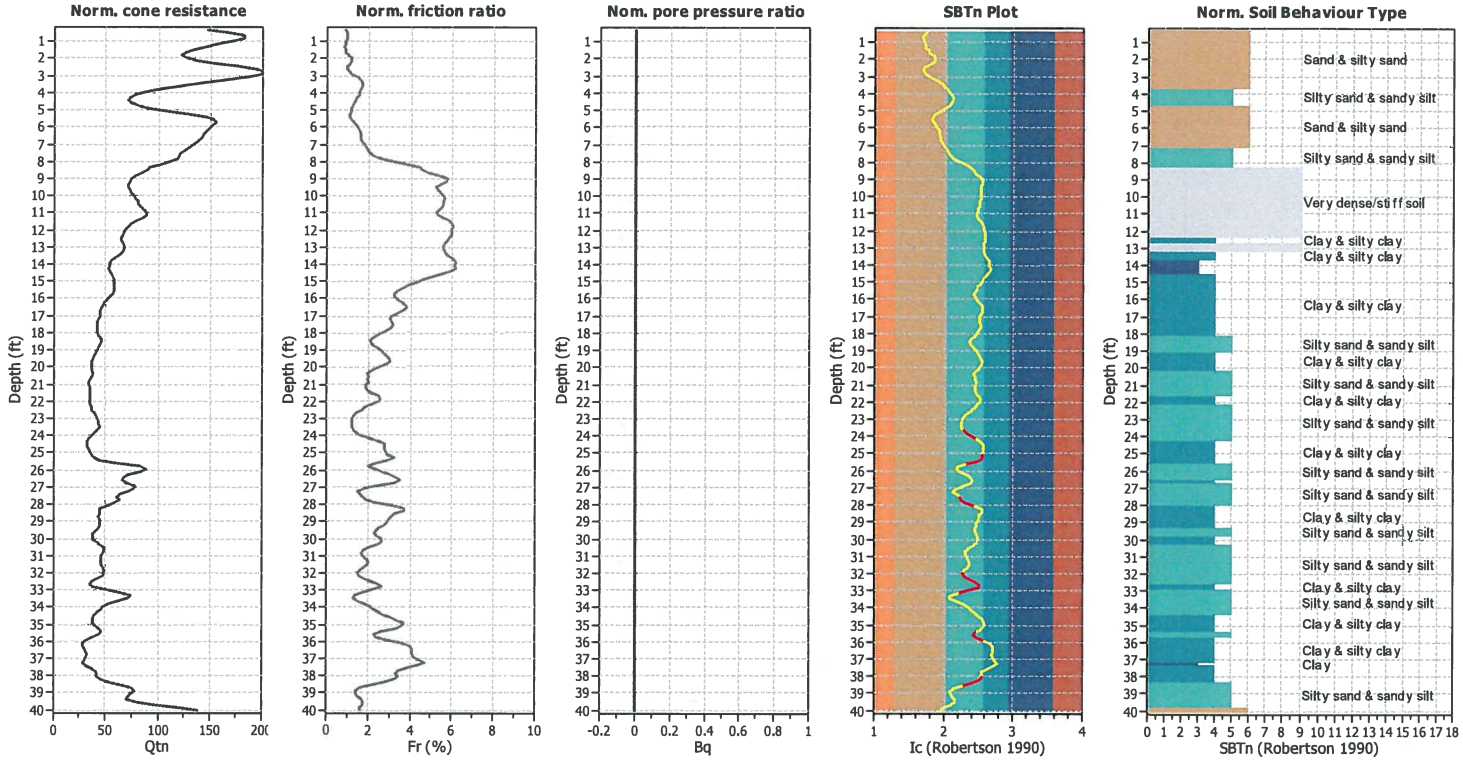






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



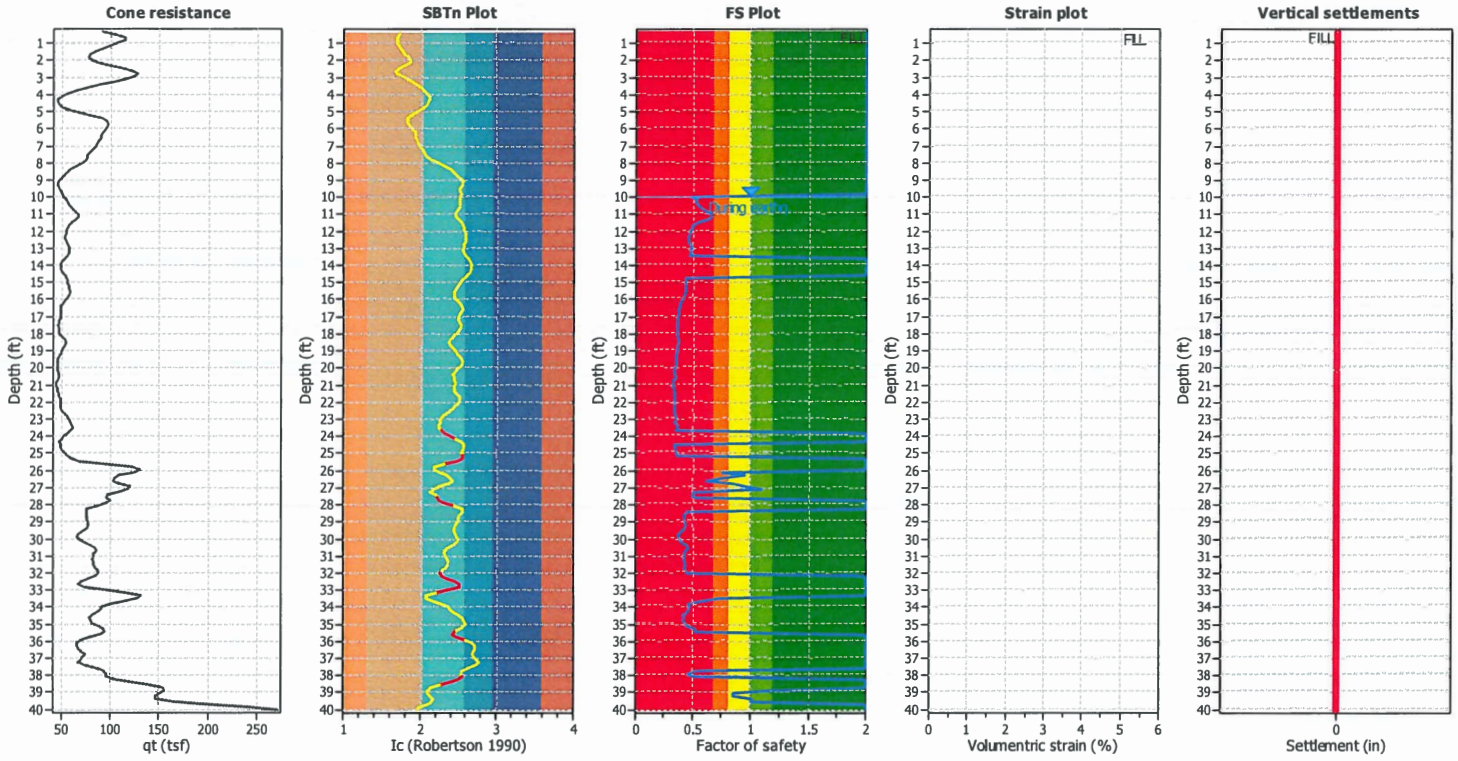
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	64.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	100.00 ft	Fill height:	54.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
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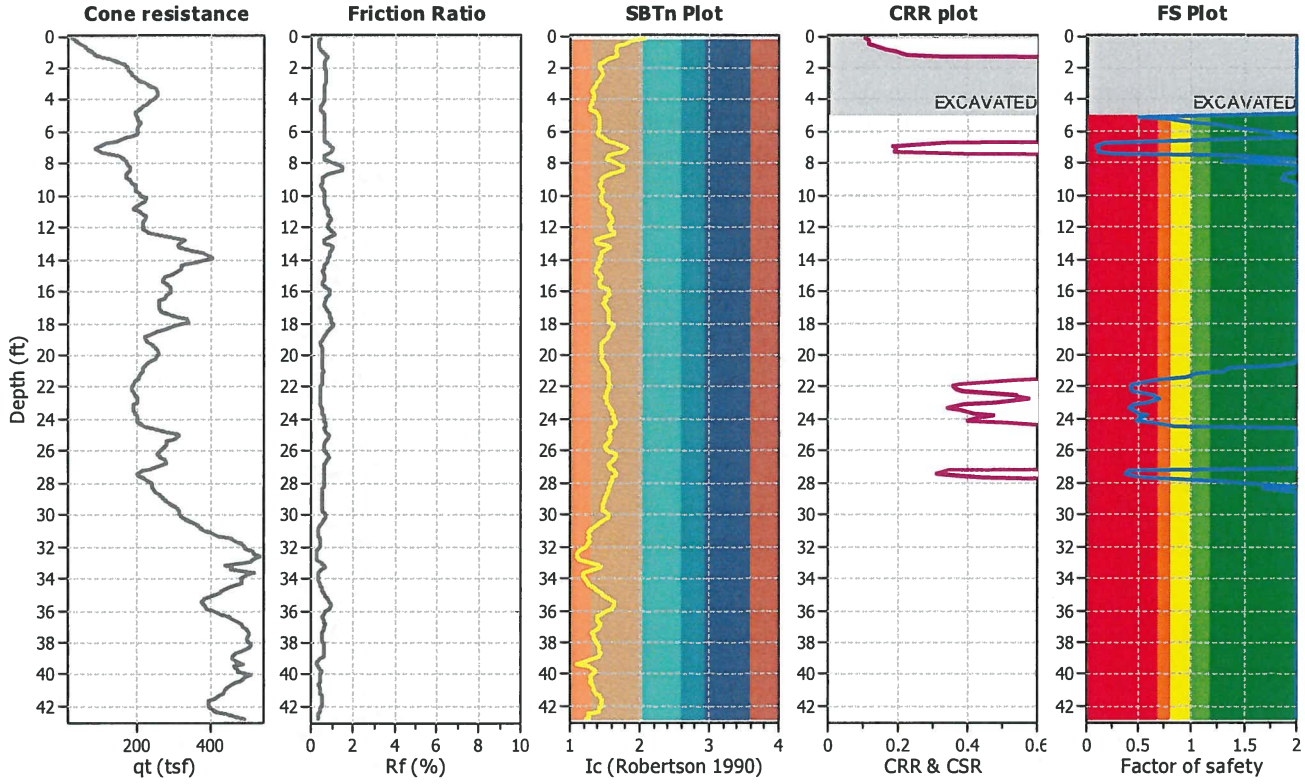
LIQUEFACTION ANALYSIS REPORT

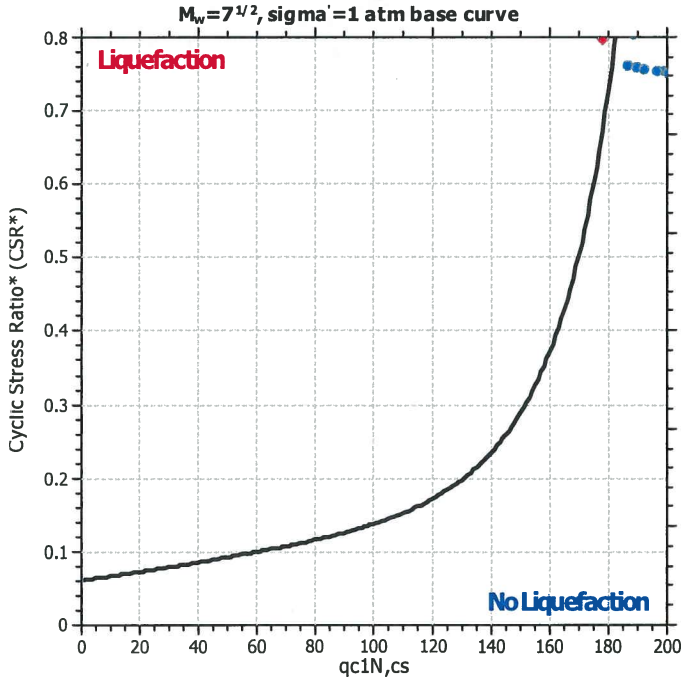
Project title : Bouquet Canyon **Location : Santa Clarita, California**

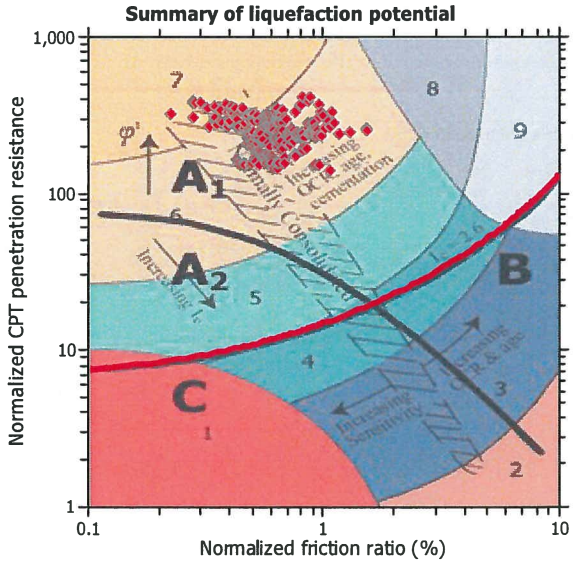
CPT file : CPT-3

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	55.00 ft	Excavation:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	0.00 ft	Excavation depth:	5.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 tsf	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

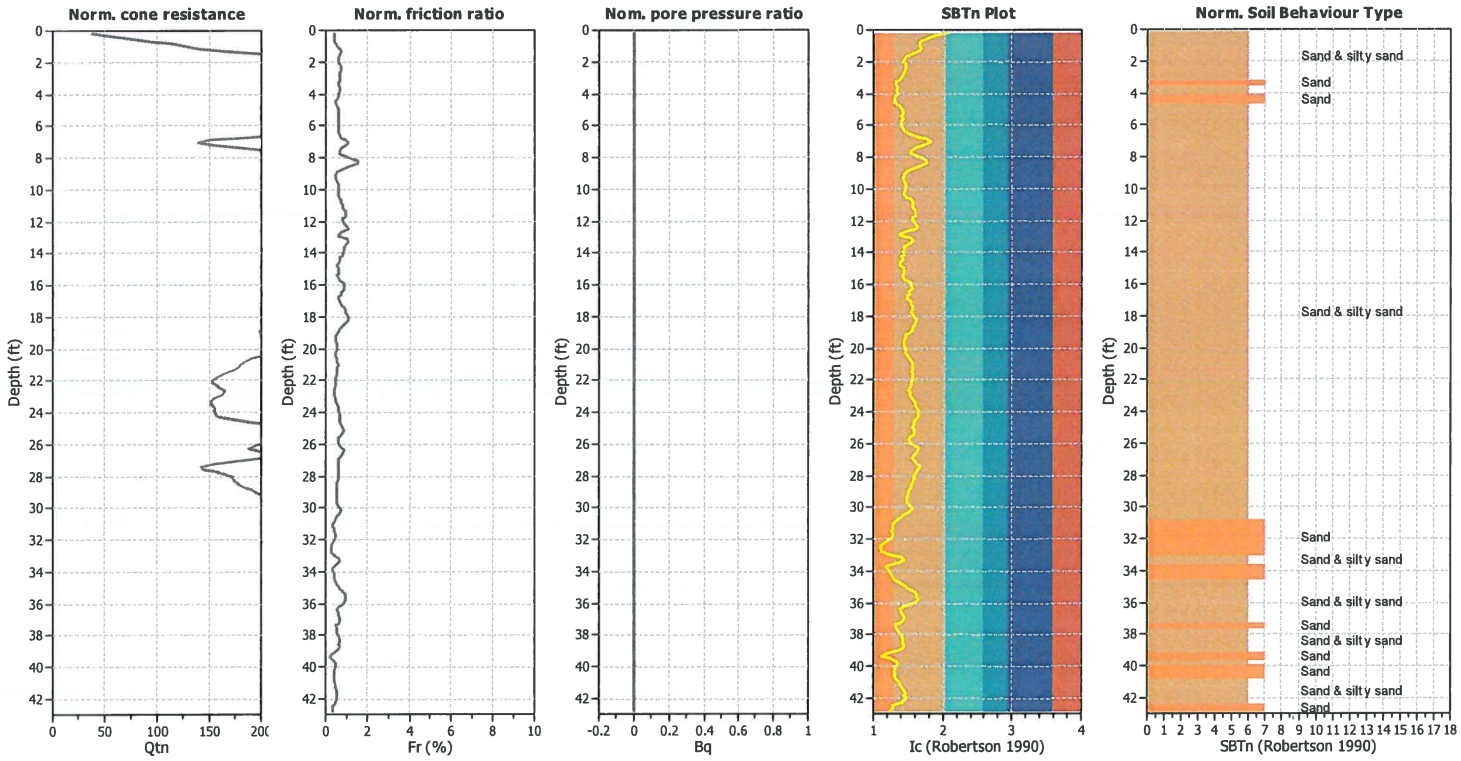






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



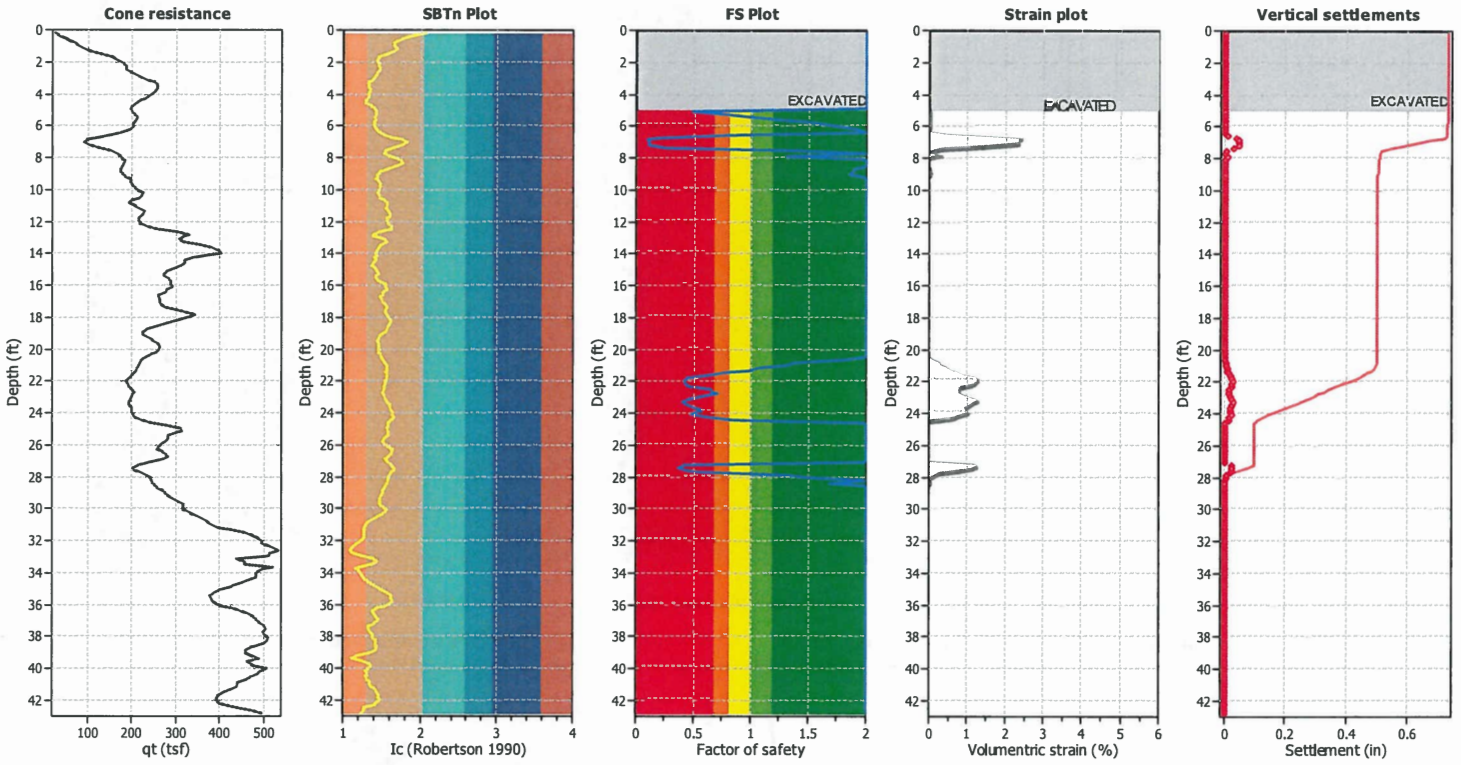
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	0.00 ft	Footing load:	0.00 tsf
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Excavation:	Yes	Limit depth applied:	No
Depth to water table (insitu):	55.00 ft	Excavation depth:	5.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
http://www.petra-inc.com/

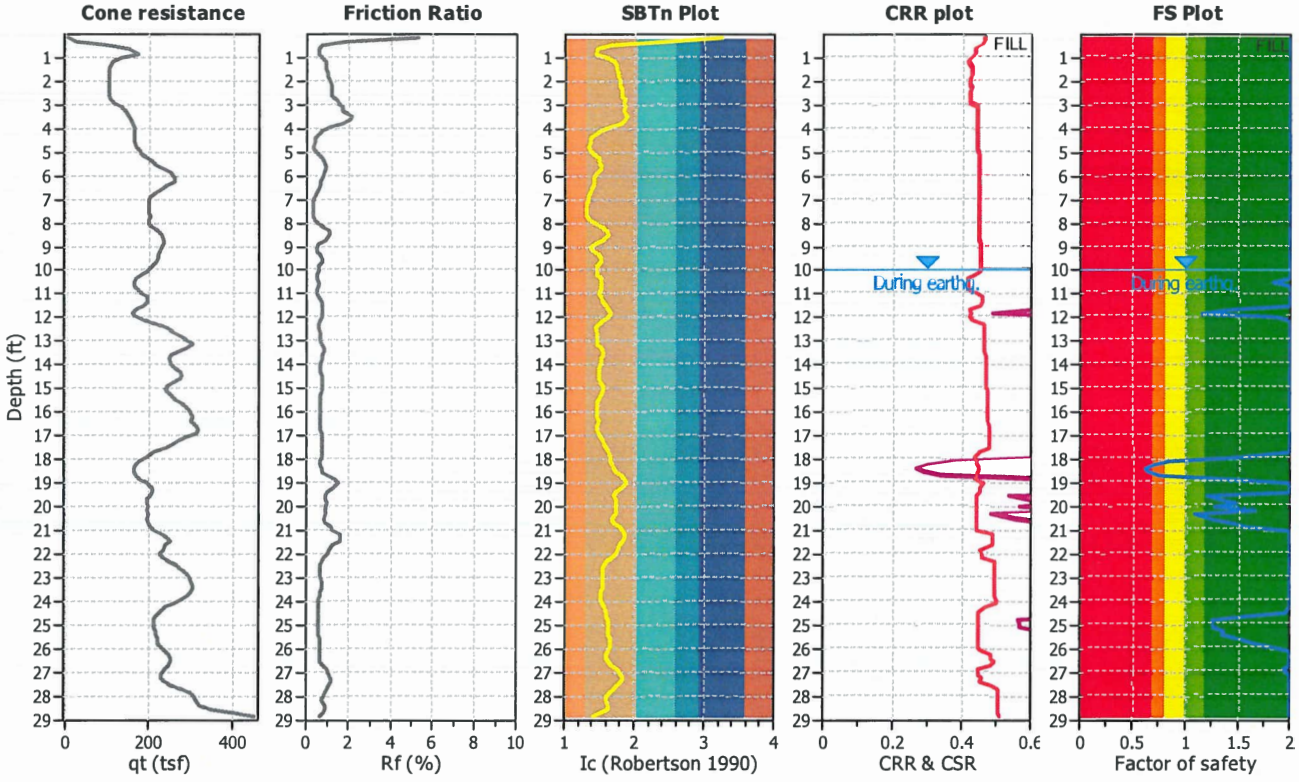
LIQUEFACTION ANALYSIS REPORT

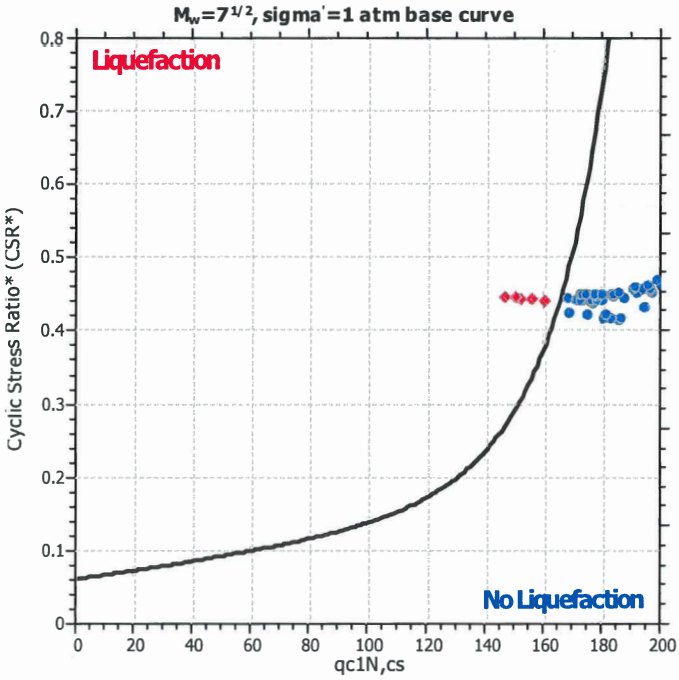
Project title : Bouquet Canyon **Location : Santa Clarita, California**

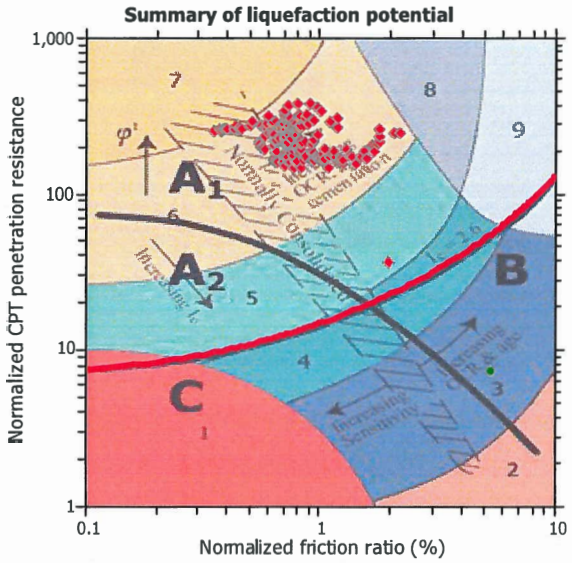
CPT file : CPT-4

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	80.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	43.00 ft	Fill height:	33.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

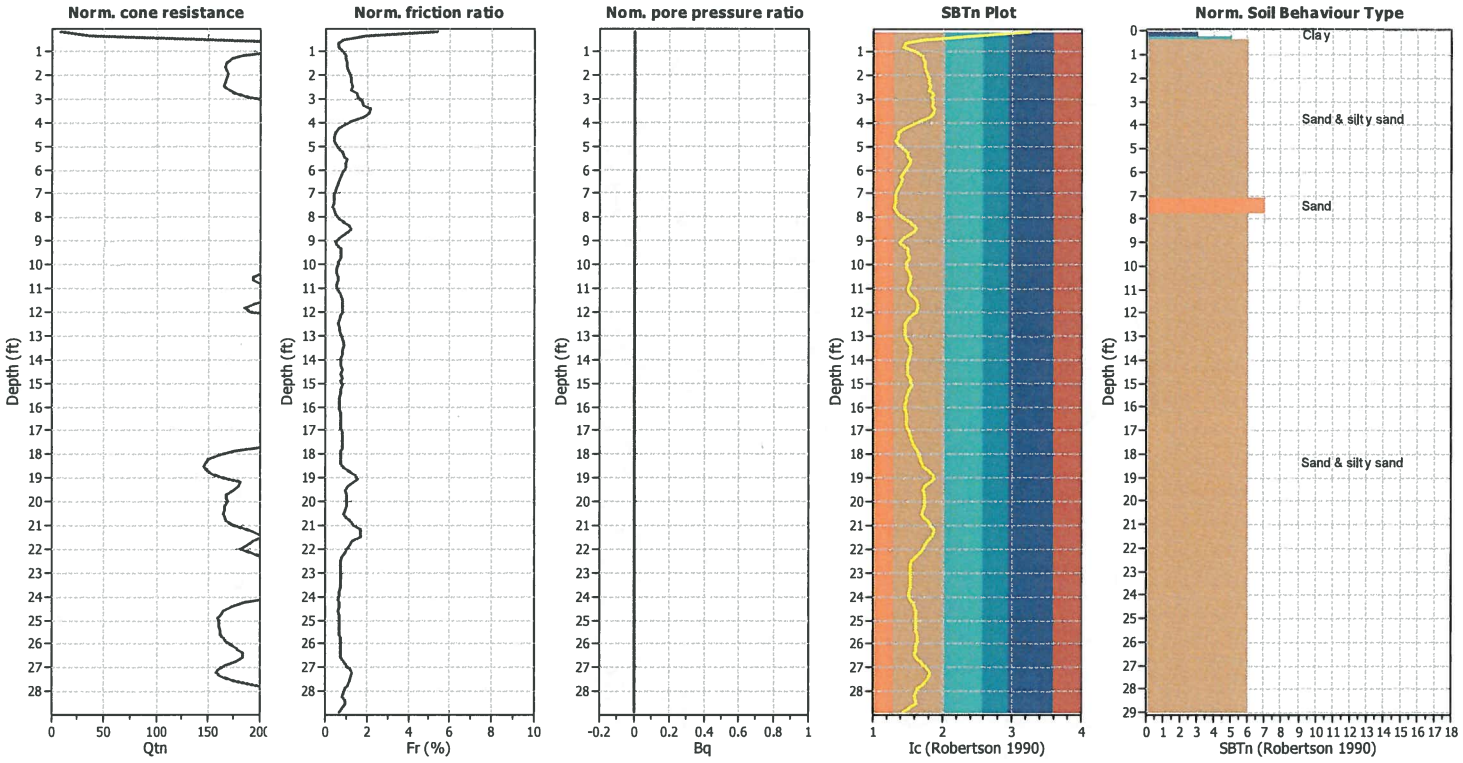






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



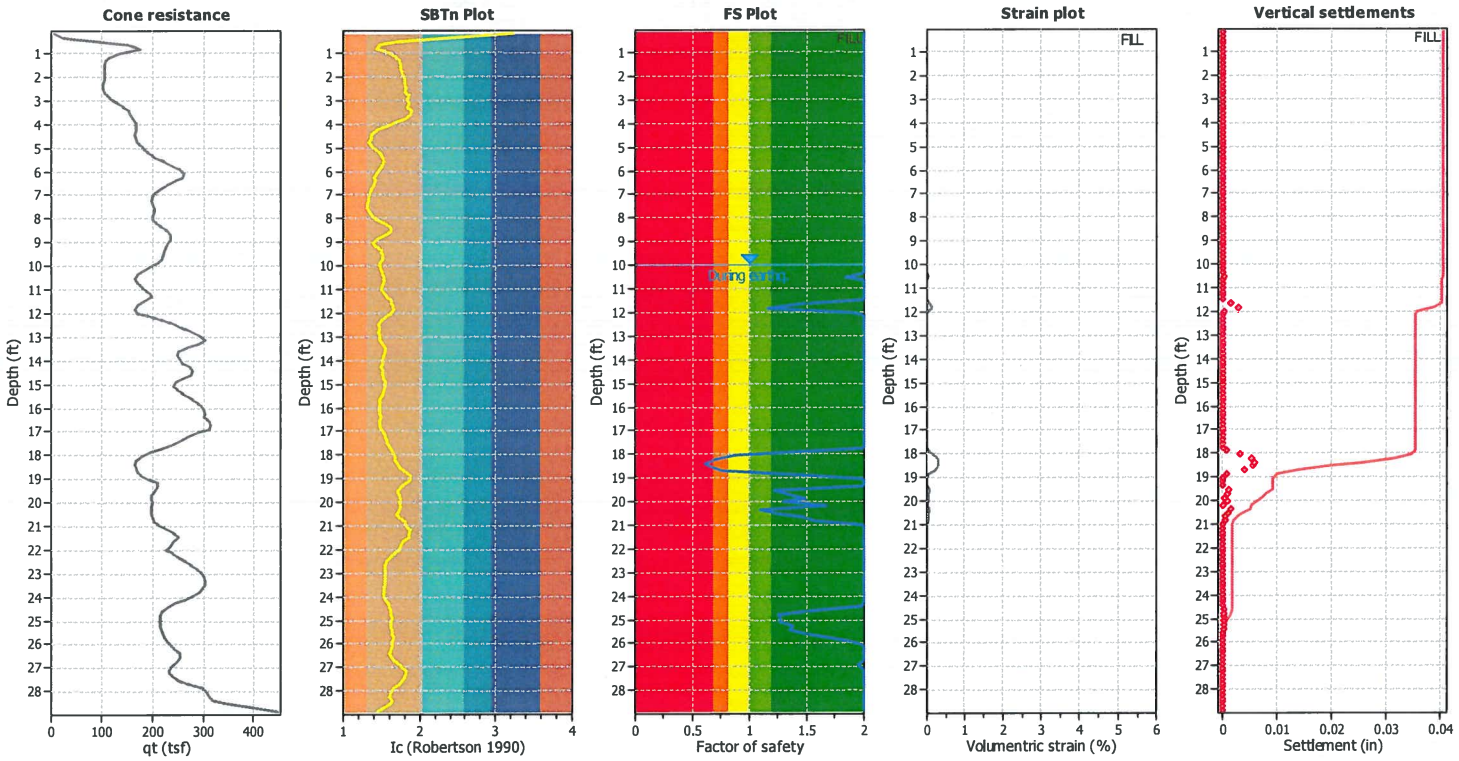
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	43.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	80.00 ft	Fill height:	33.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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Costa Mesa, CA 92626
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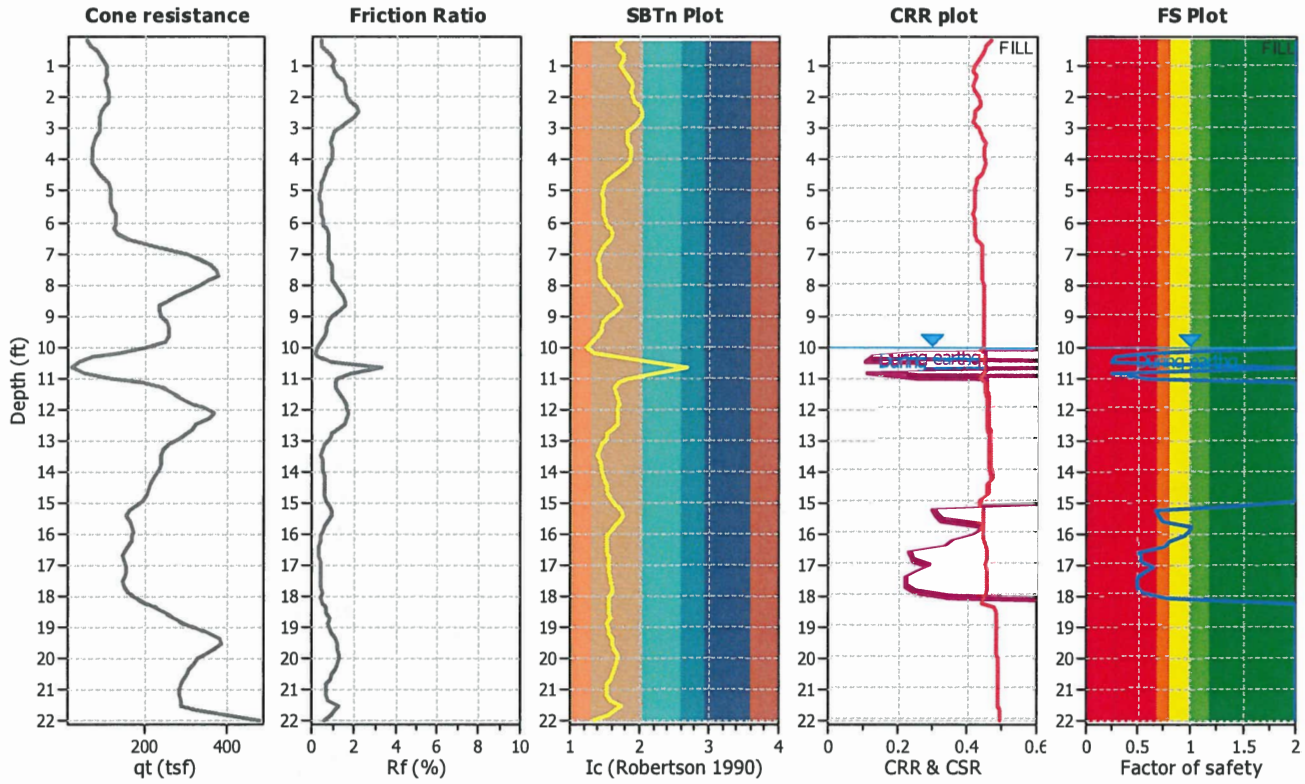
LIQUEFACTION ANALYSIS REPORT

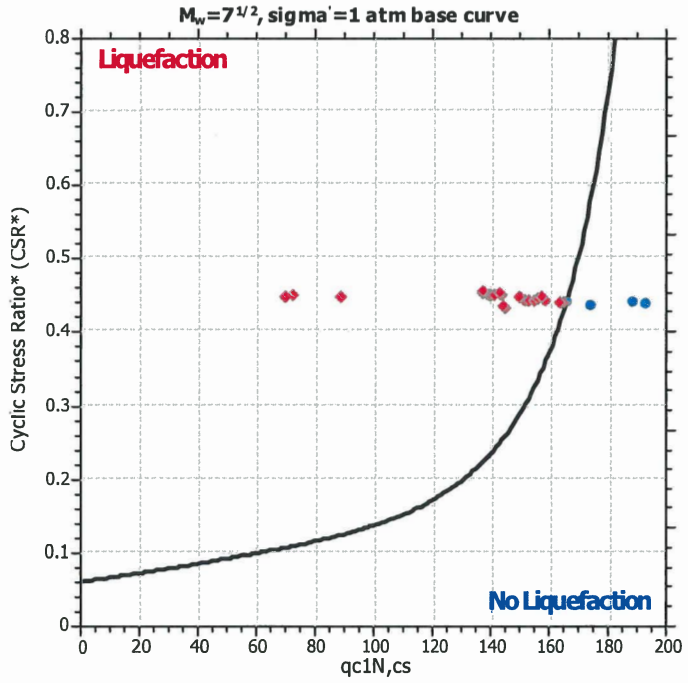
Project title : Bouquet Canyon **Location : Santa Clarita, California**

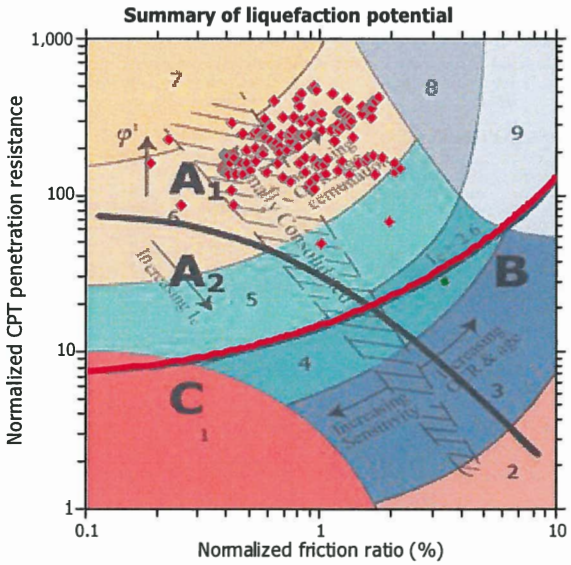
CPT file : CPT-5

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	90.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	40.00 ft	Fill height:	30.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

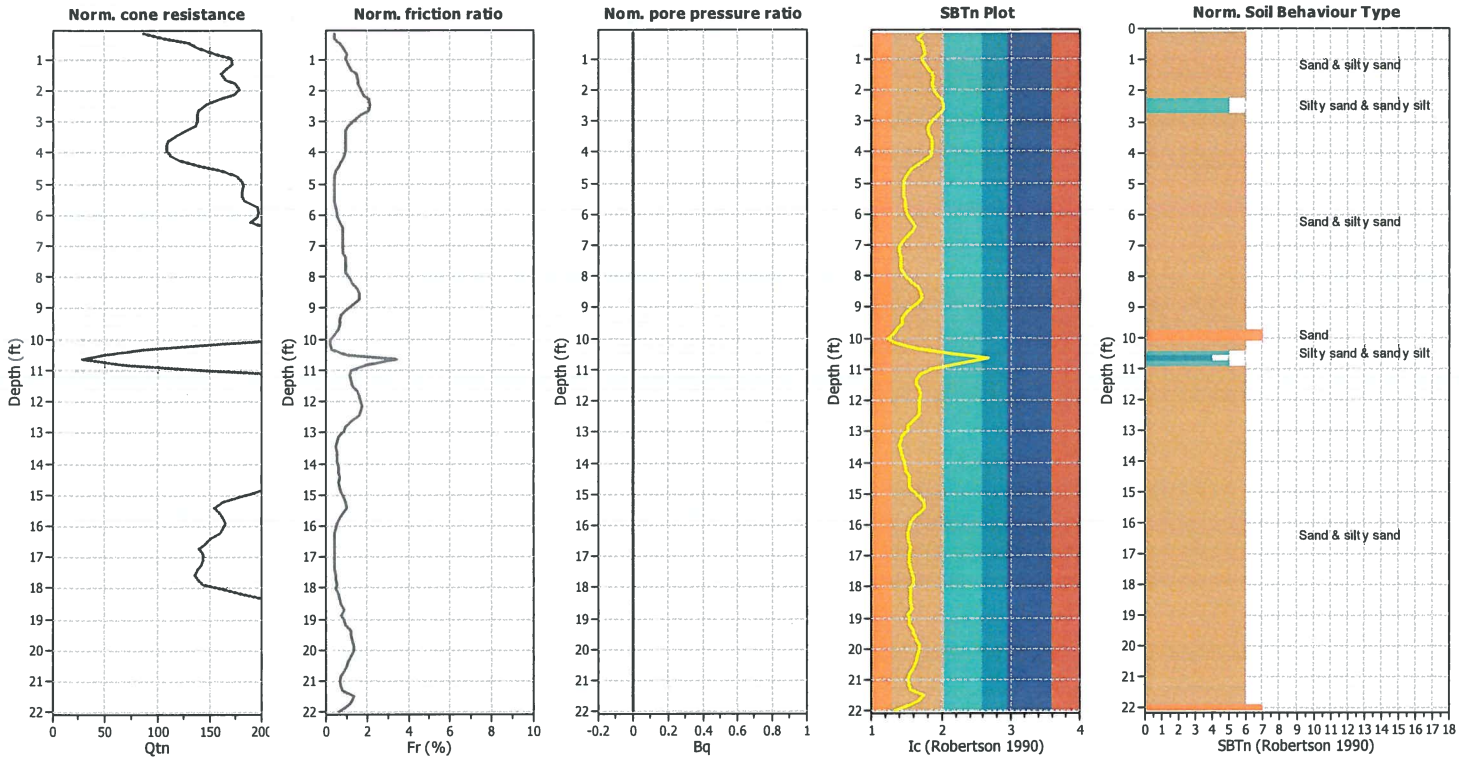






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



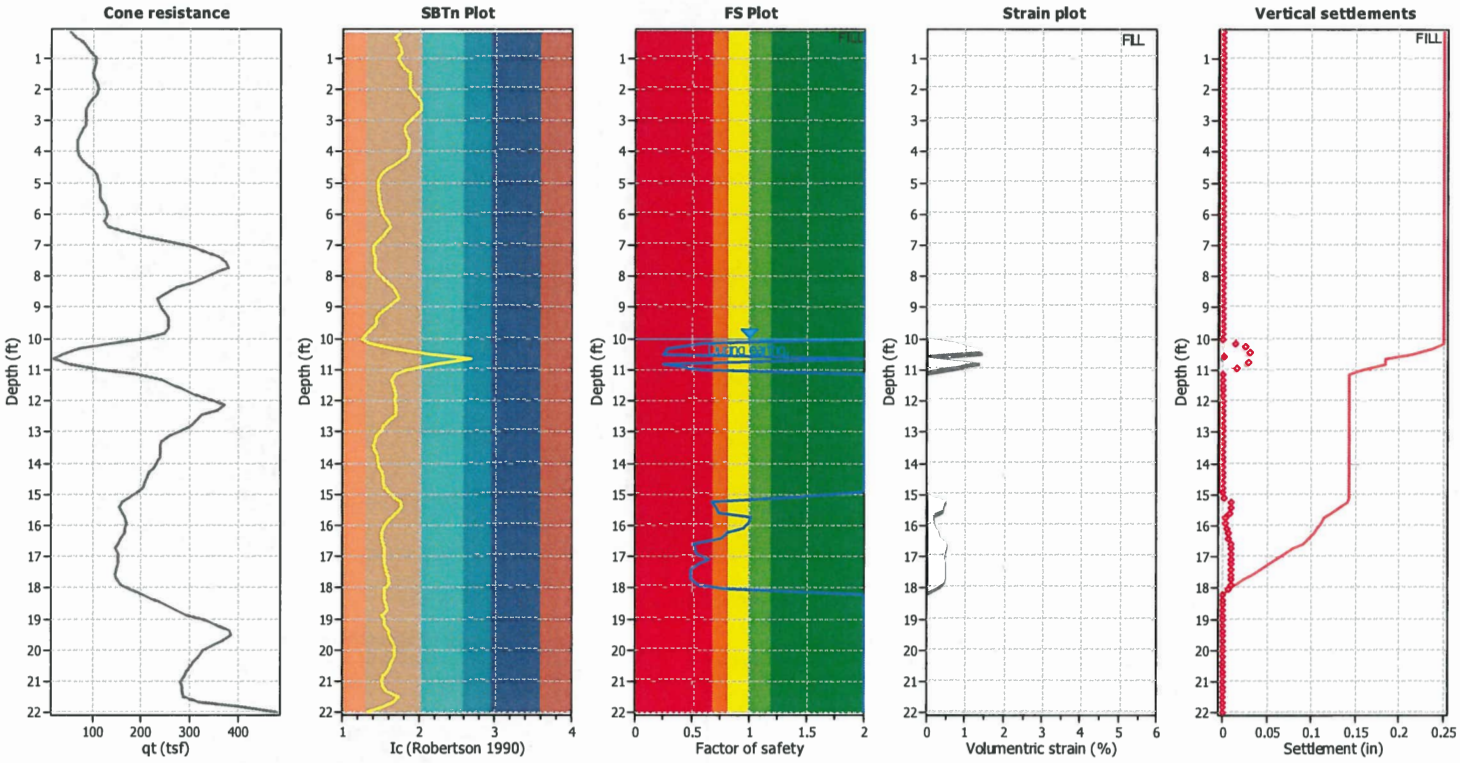
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	40.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	90.00 ft	Fill height:	30.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
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Volumentric strain:	Post-liquefaction volumentric strain

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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
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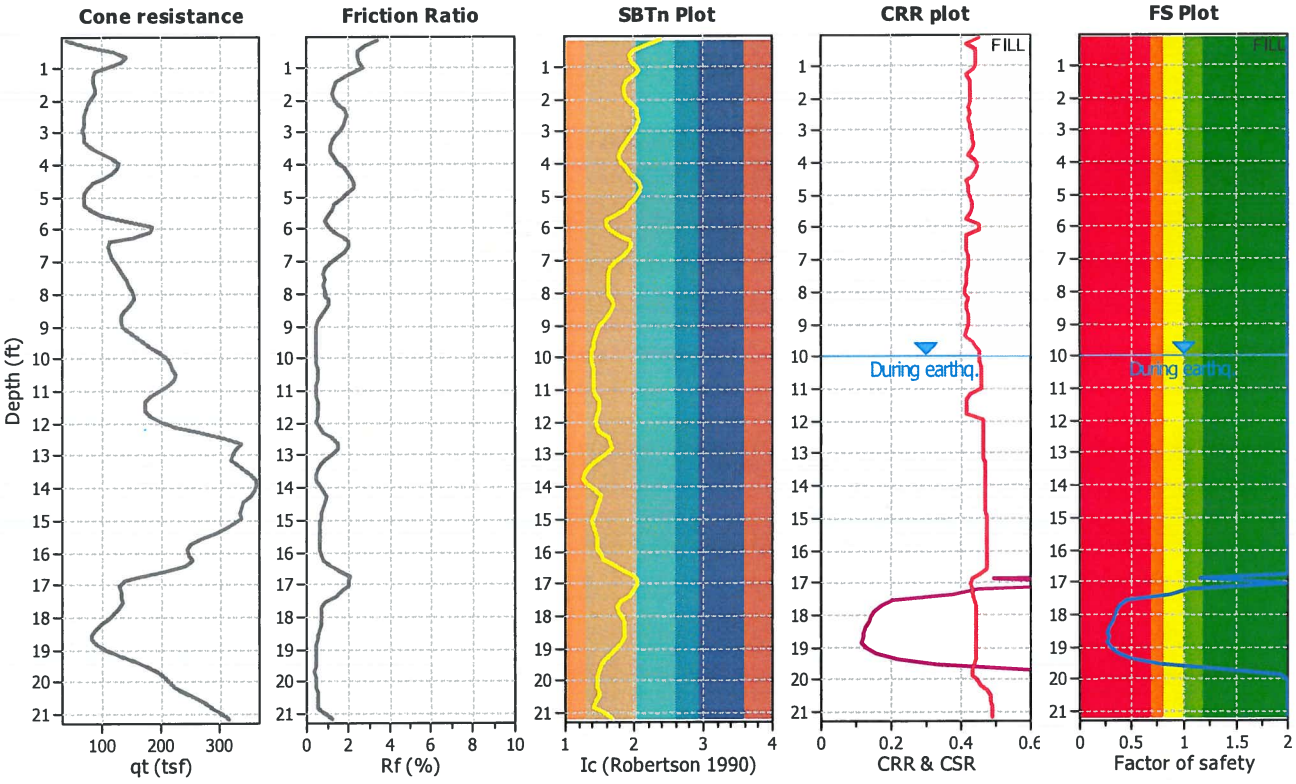
LIQUEFACTION ANALYSIS REPORT

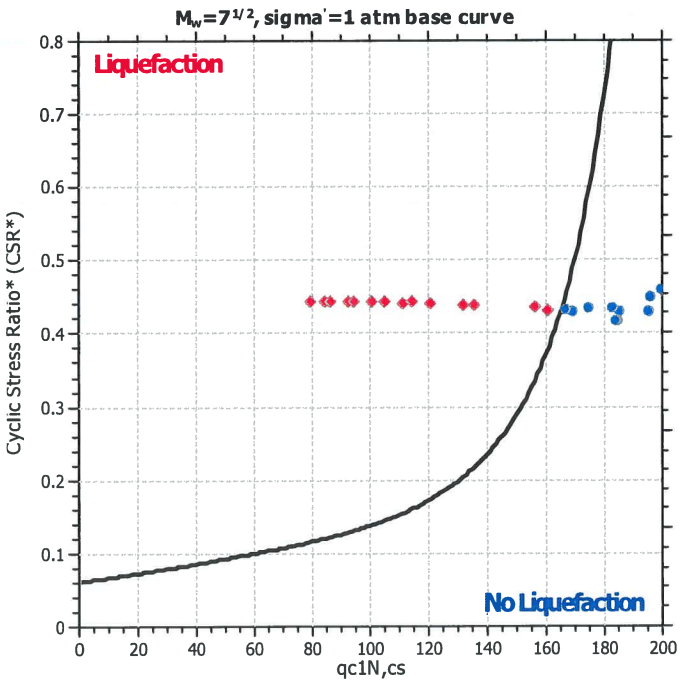
Project title : Bouquet Canyon **Location : Santa Clarita, California**

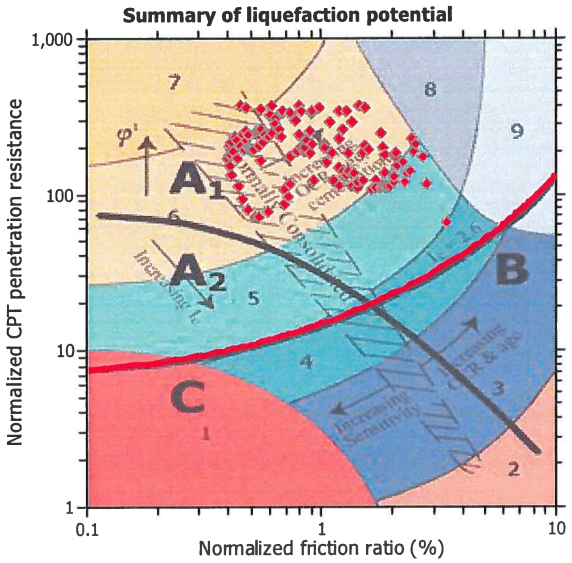
CPT file : CPT-5A

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	90.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	47.00 ft	Fill height:	37.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

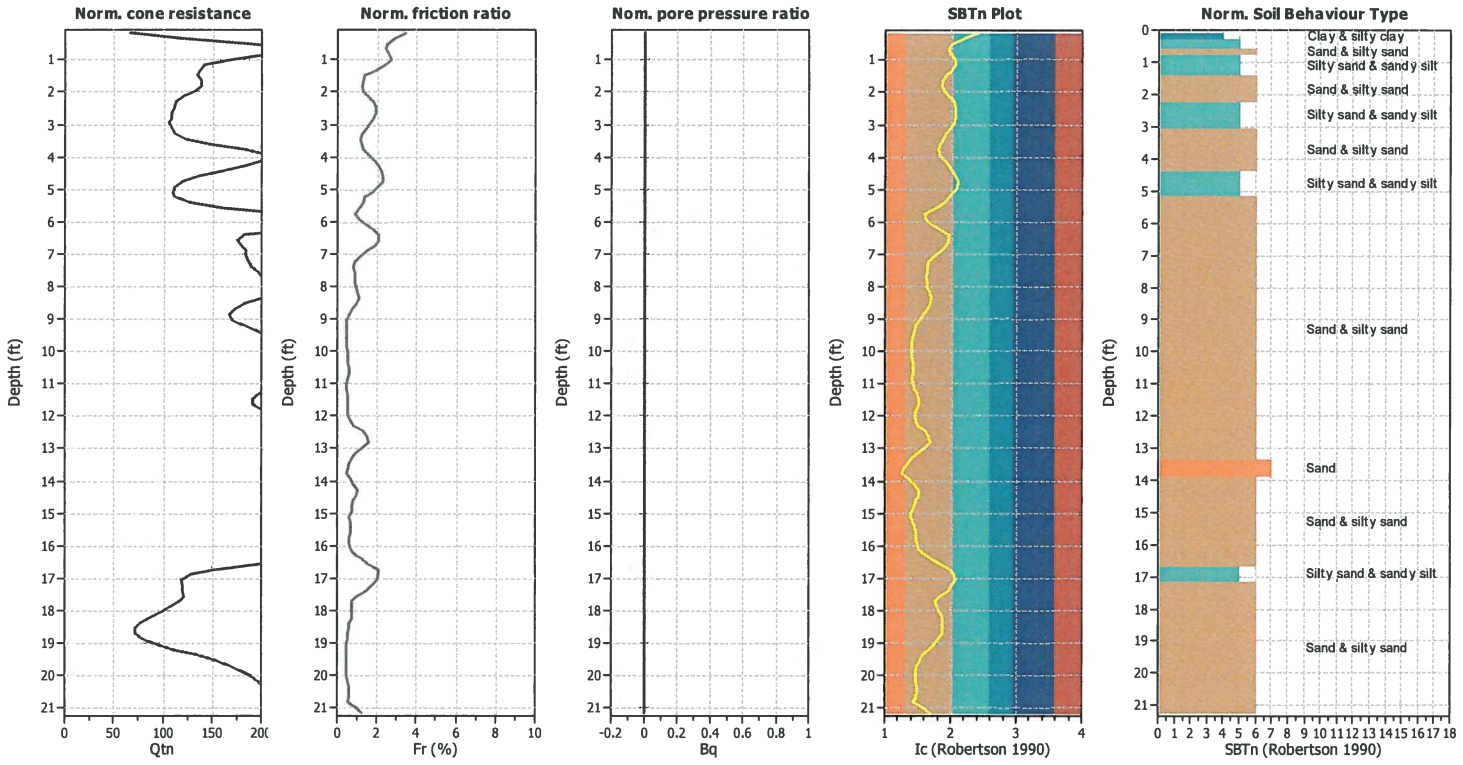






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



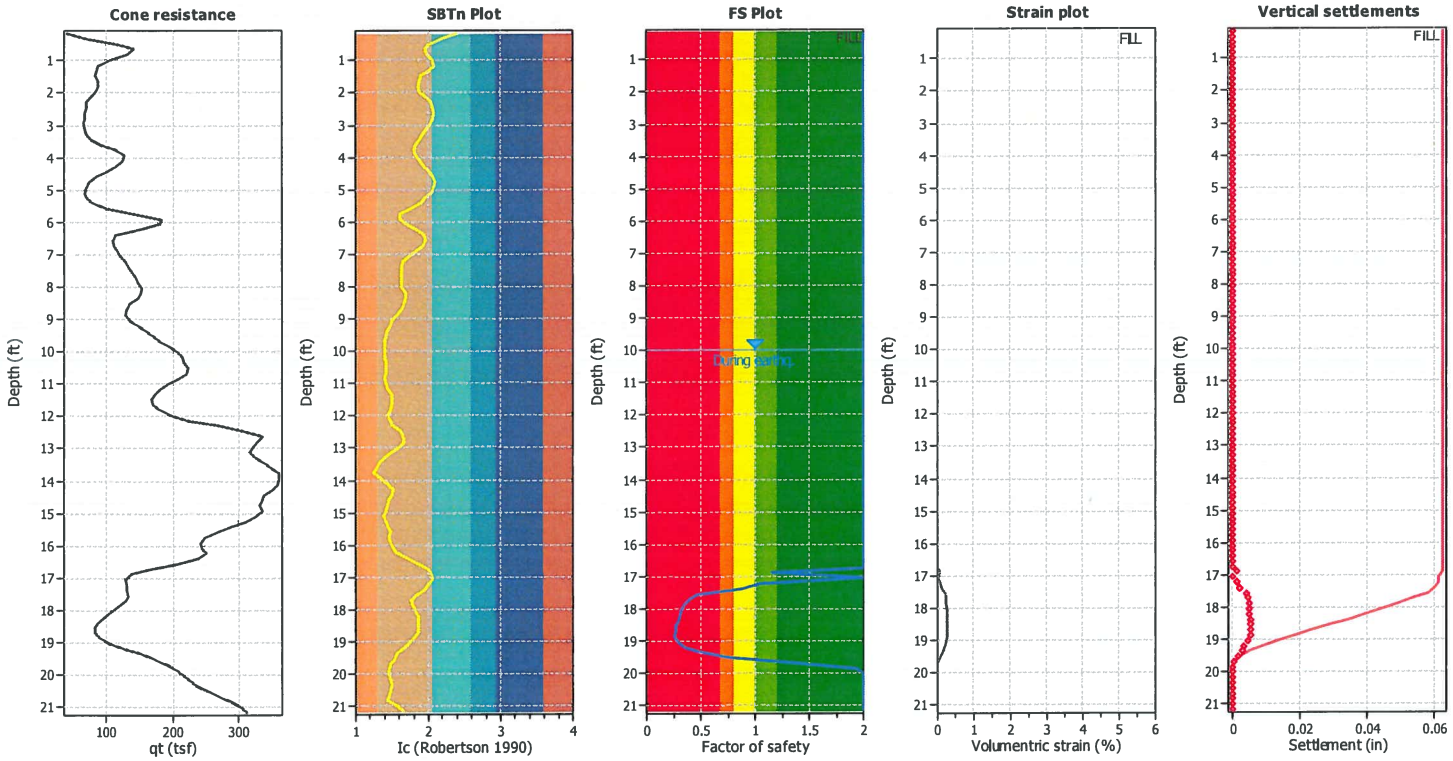
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	47.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	90.00 ft	Fill height:	37.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
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Volumentric strain:	Post-liquefaction volumentric strain

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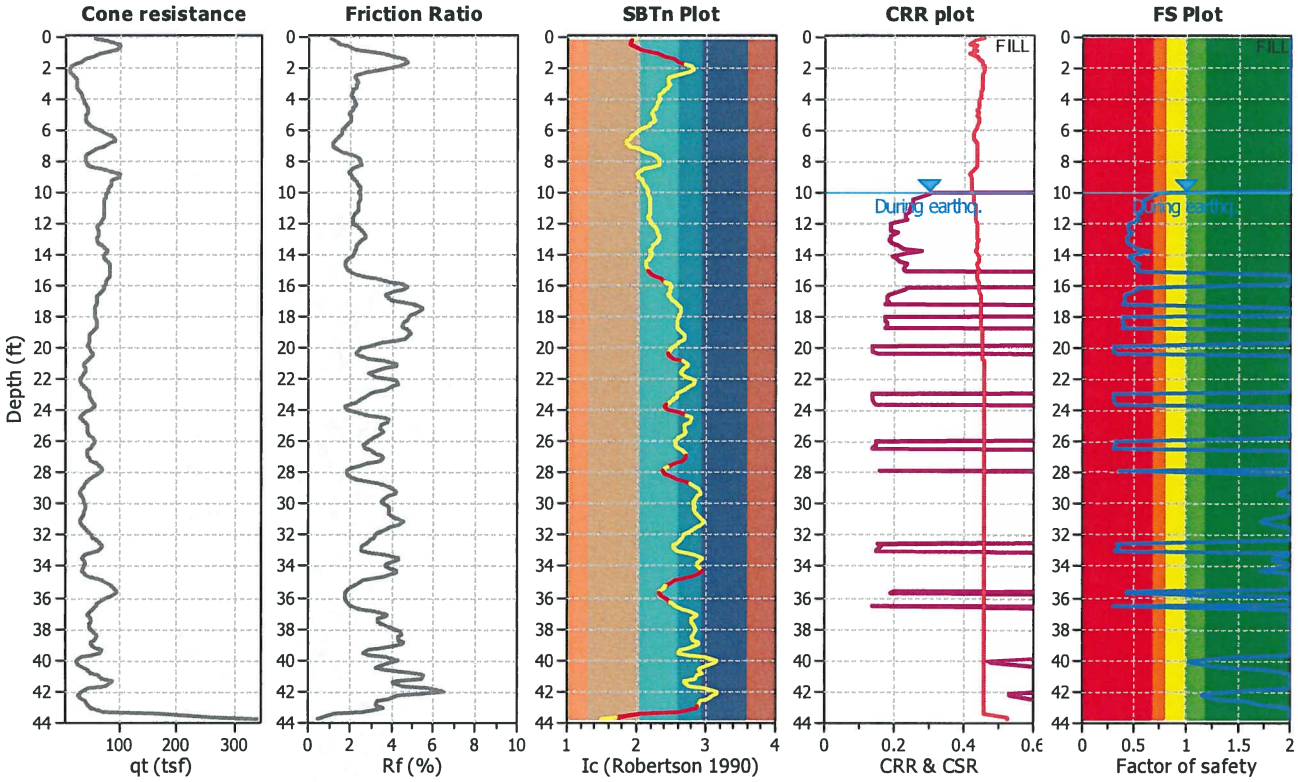
LIQUEFACTION ANALYSIS REPORT

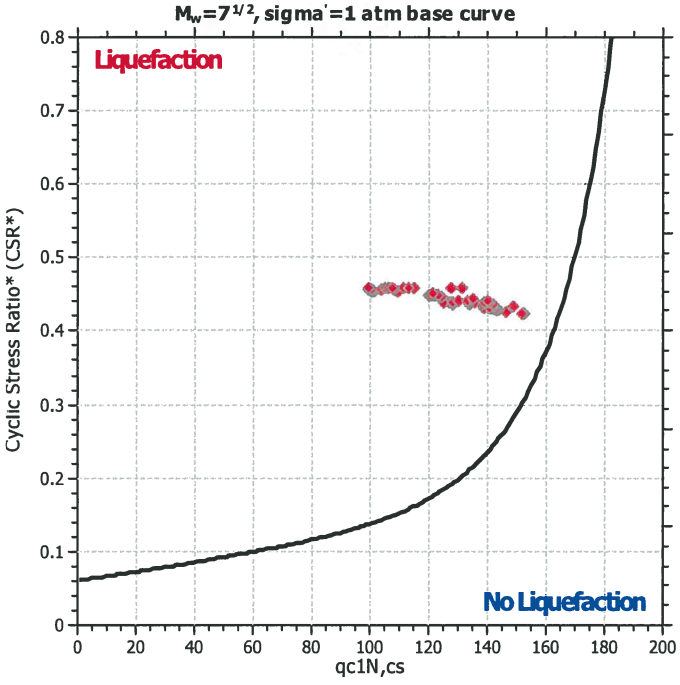
Project title : Bouquet Canyon **Location : Santa Clarita, California**

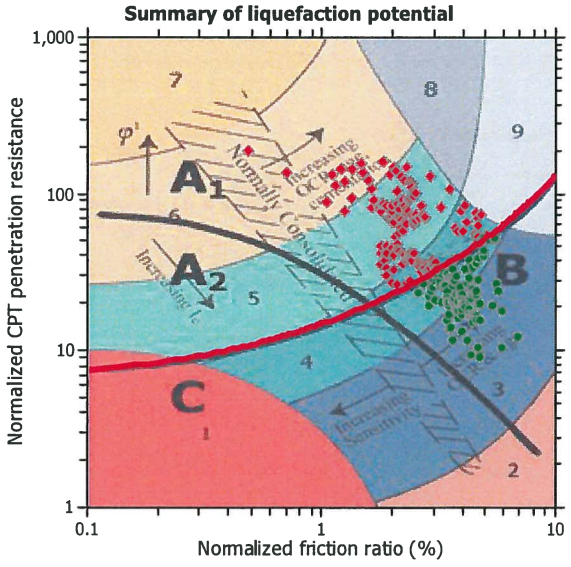
CPT file : CPT-6

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	90.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	44.00 ft	Fill height:	34.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

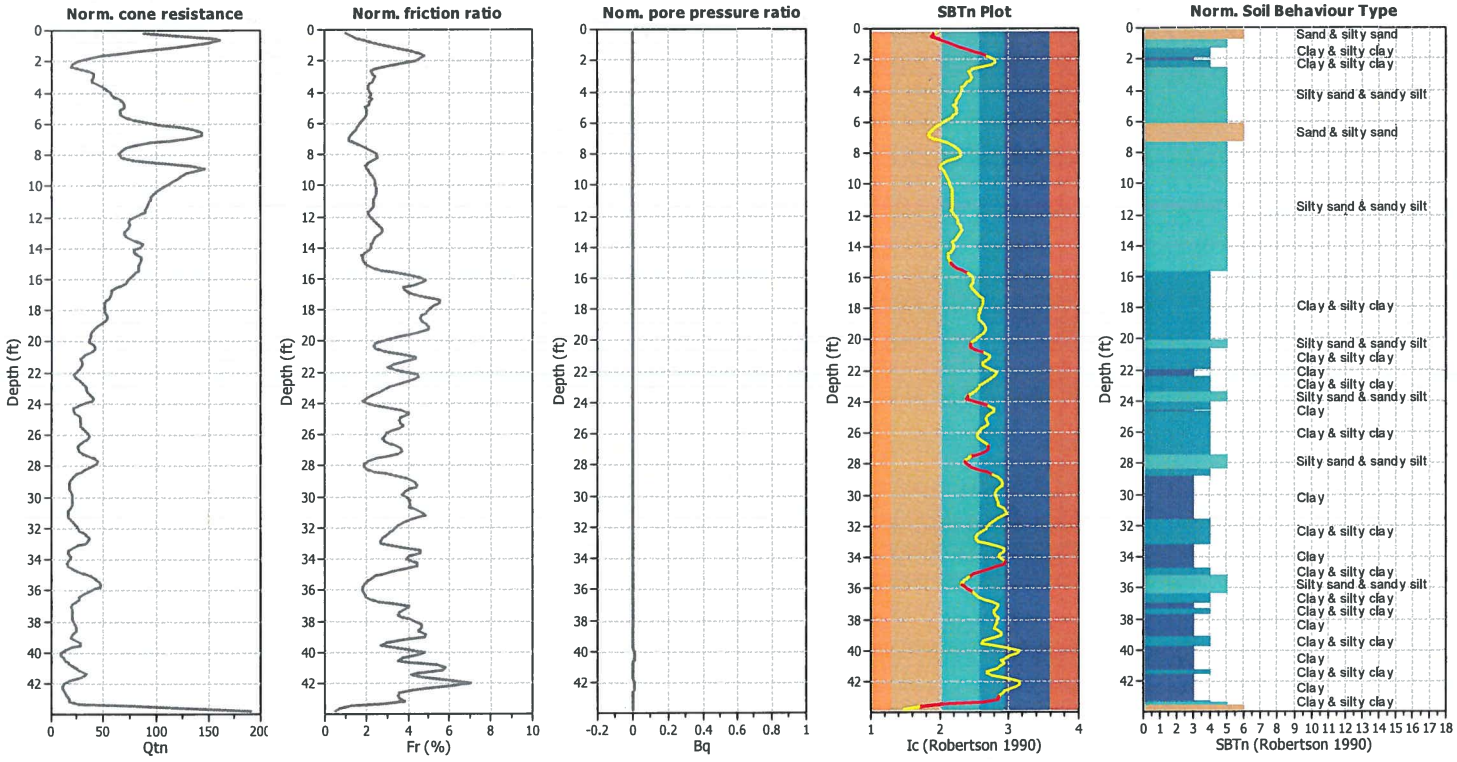






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



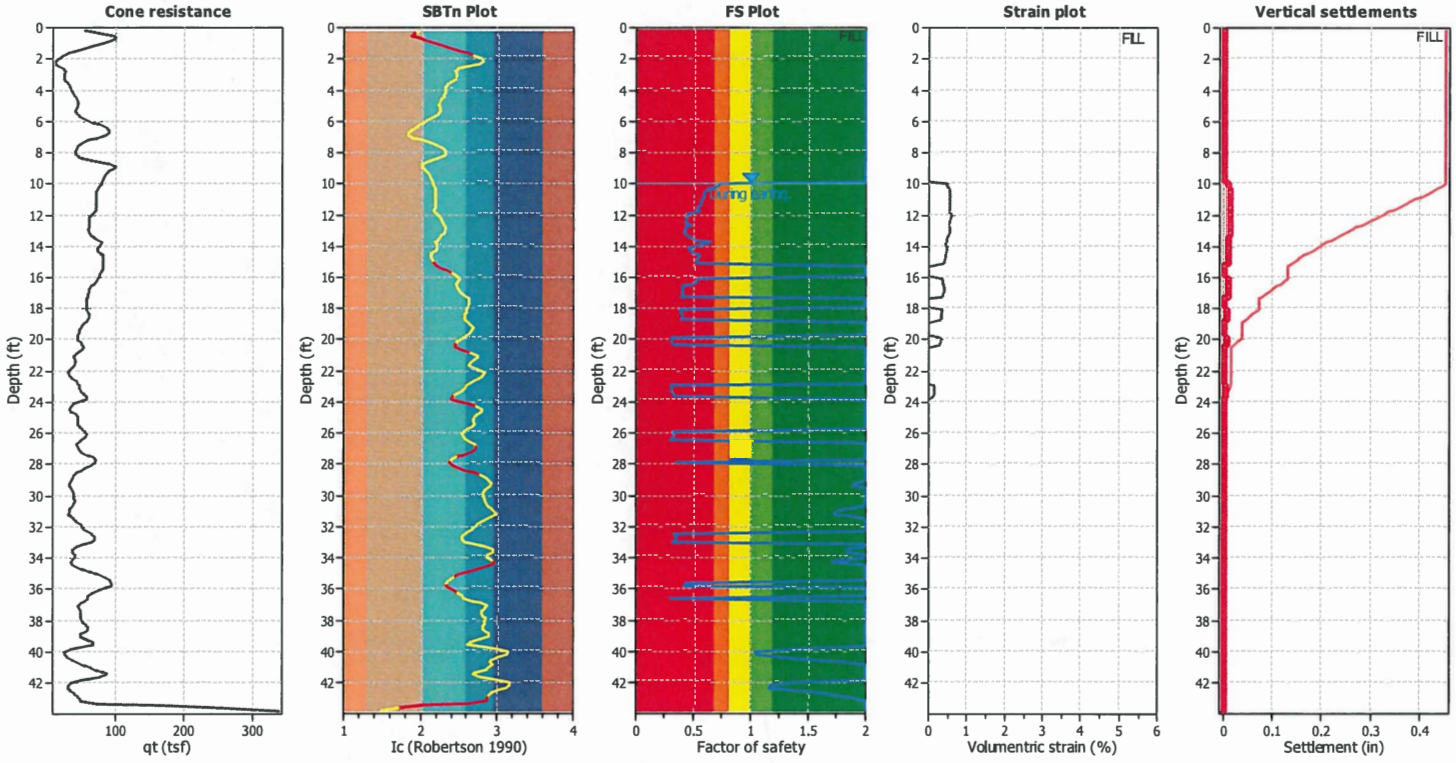
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	44.00 ft	Fill weight:	120.00 lb/ft³		
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes		
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes		
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay		
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No		
Depth to water table (insitu):	90.00 ft	Fill height:	34.00 ft	Limit depth:	N/A		

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_t corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
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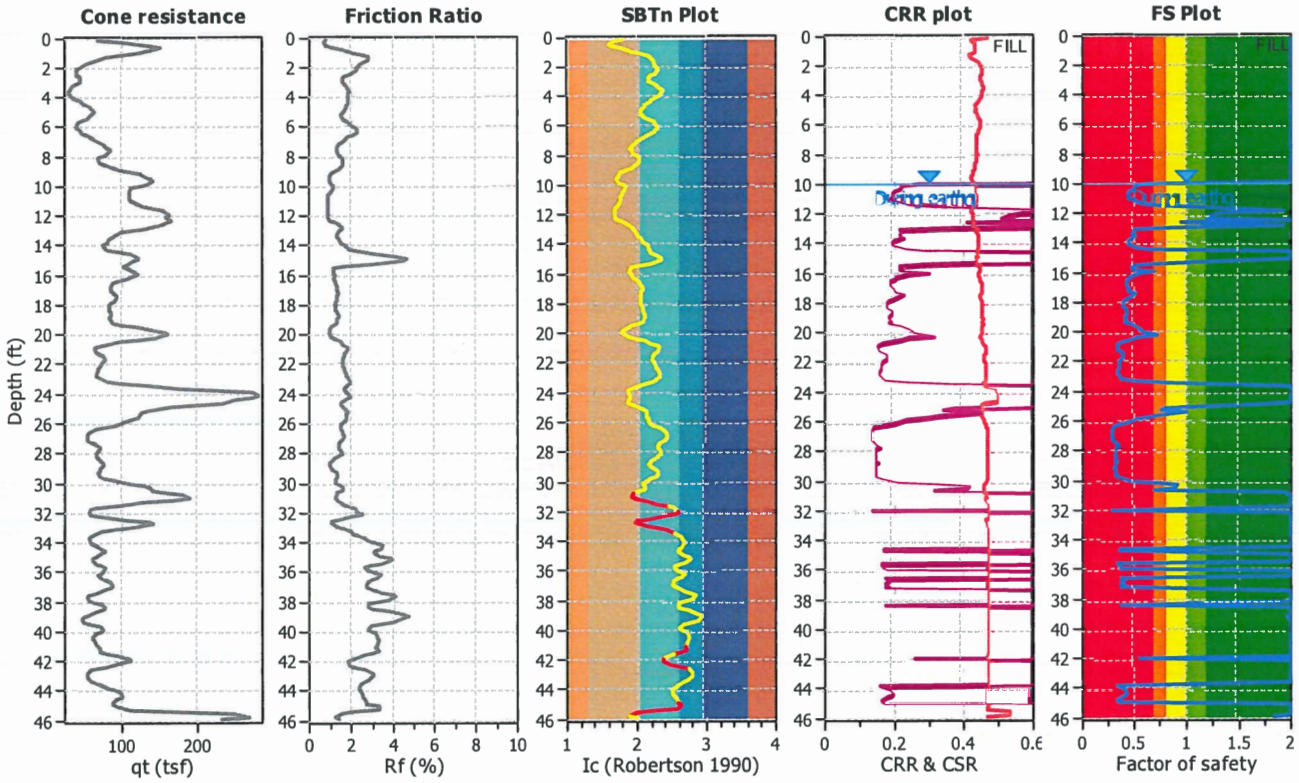
LIQUEFACTION ANALYSIS REPORT

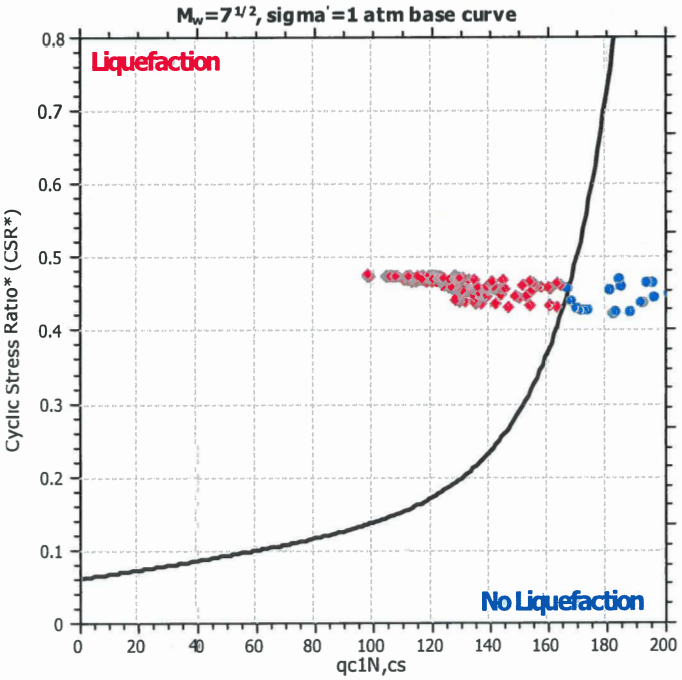
Project title : Bouquet Canyon **Location : Santa Clarita, California**

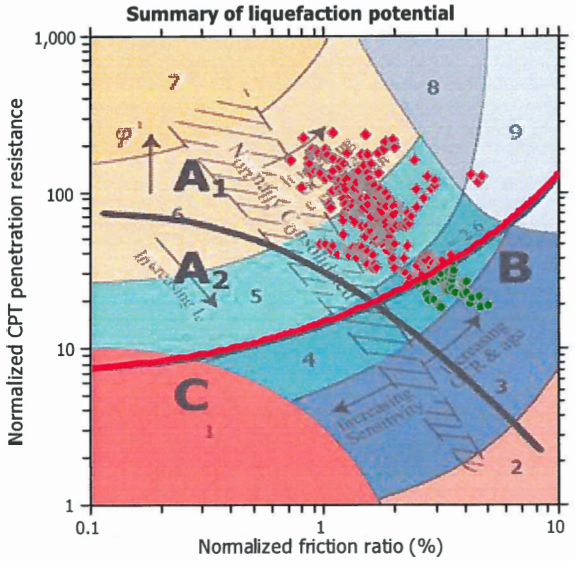
CPT file : CPT-7

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	75.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	40.00 ft	Fill height:	30.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

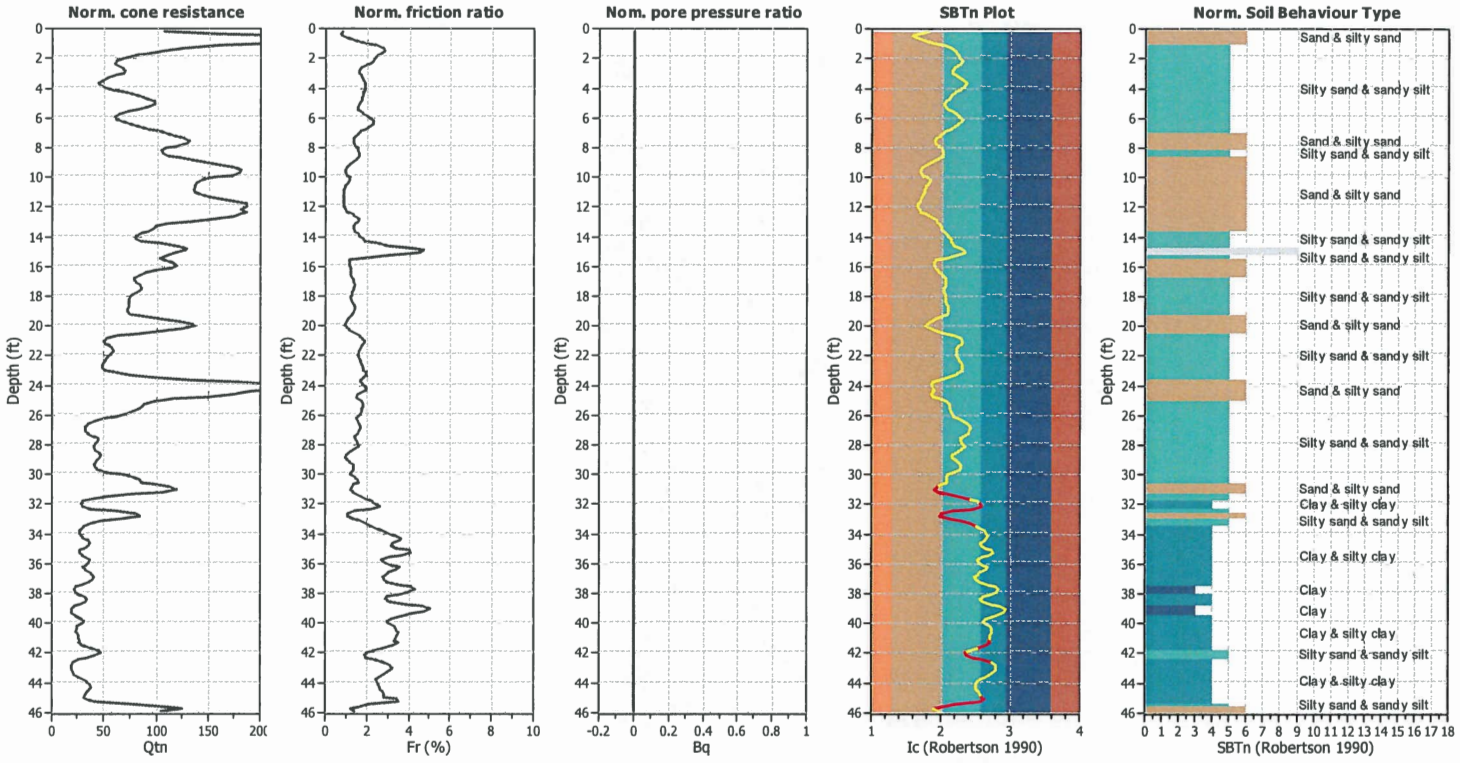






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely ,check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



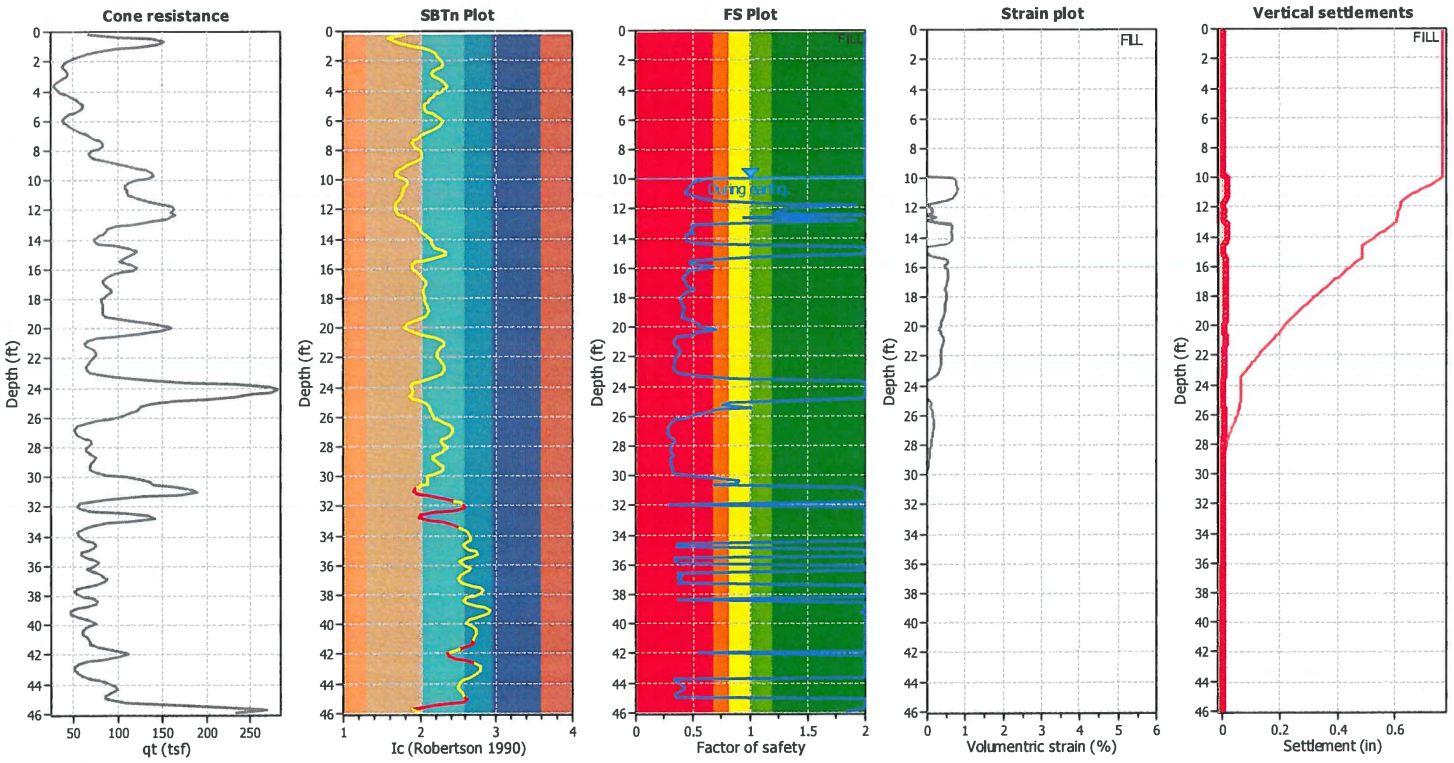
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	40.00 ft	Fill weight:	120.00 lb/ft³		
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes		
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes		
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay		
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No		
Depth to water table (insitu):	75.00 ft	Fill height:	30.00 ft	Limit depth:	N/A		

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
http://www.petra-inc.com/

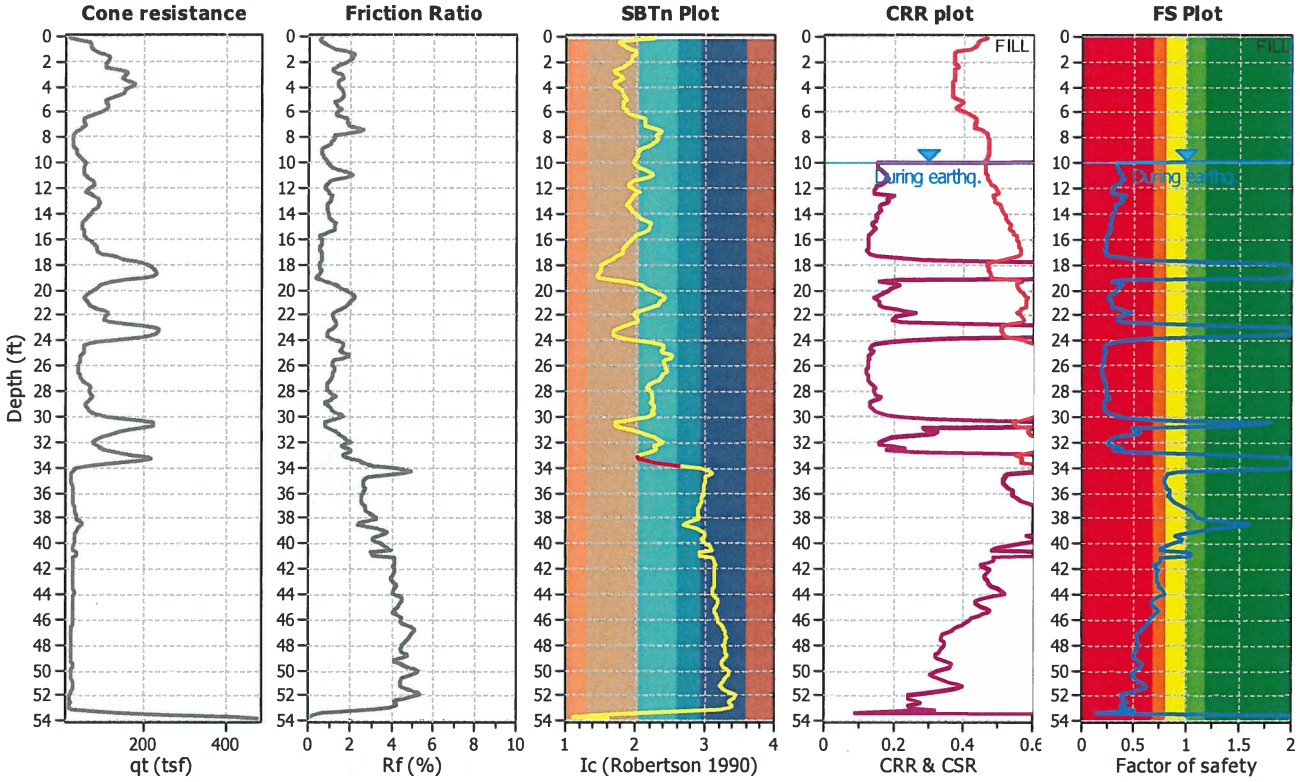
LIQUEFACTION ANALYSIS REPORT

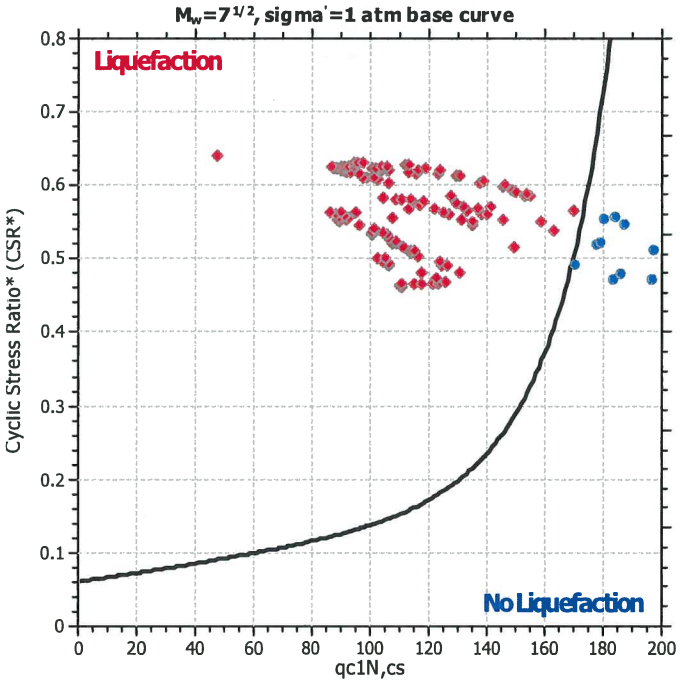
Project title : Bouquet Canyon **Location : Santa Clarita, California**

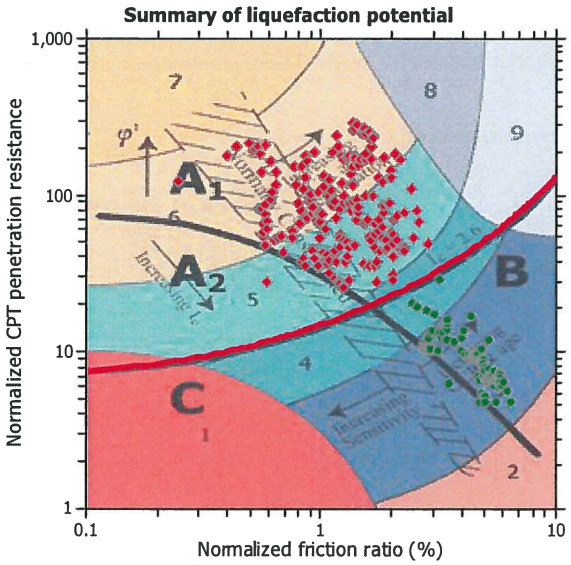
CPT file : CPT-P1

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	60.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	14.00 ft	Fill height:	4.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

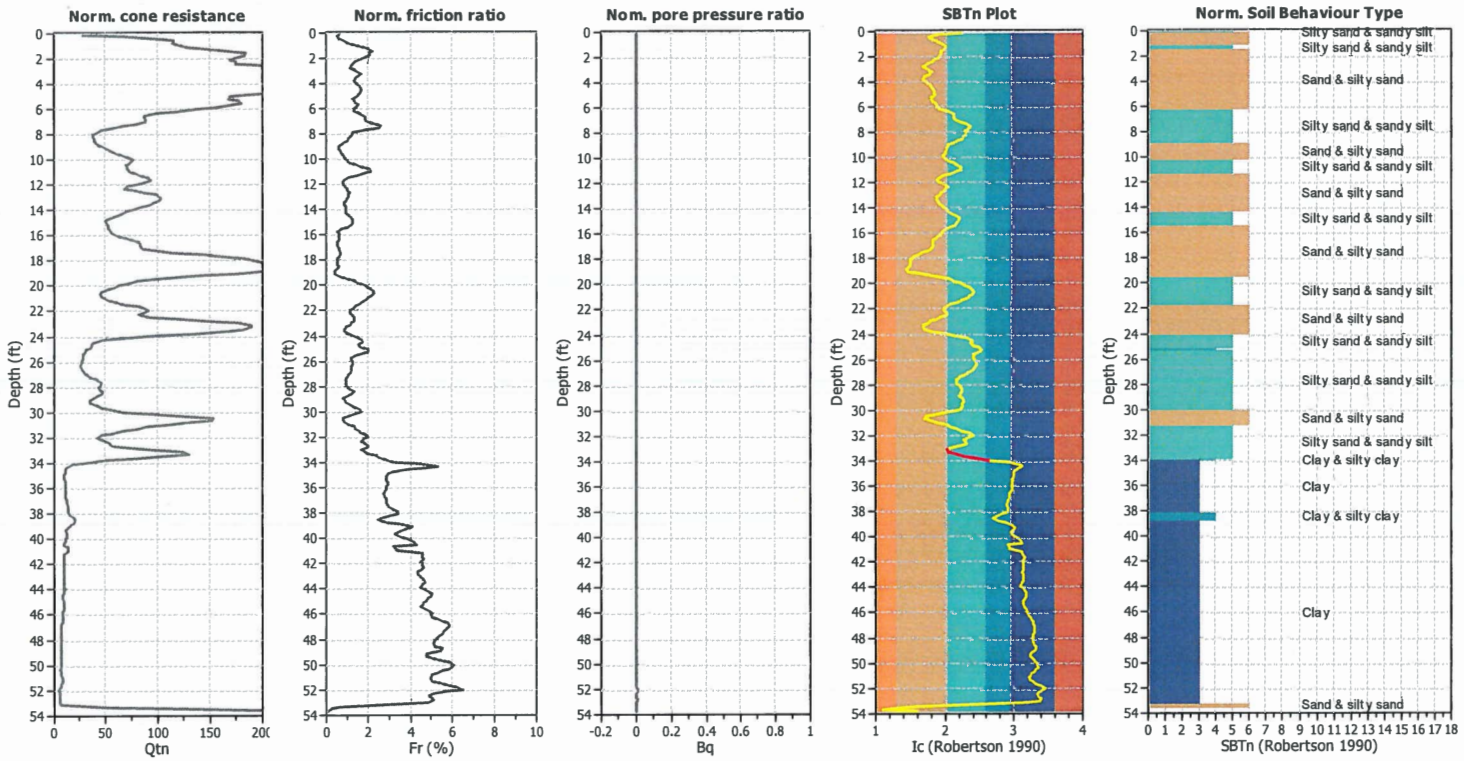






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



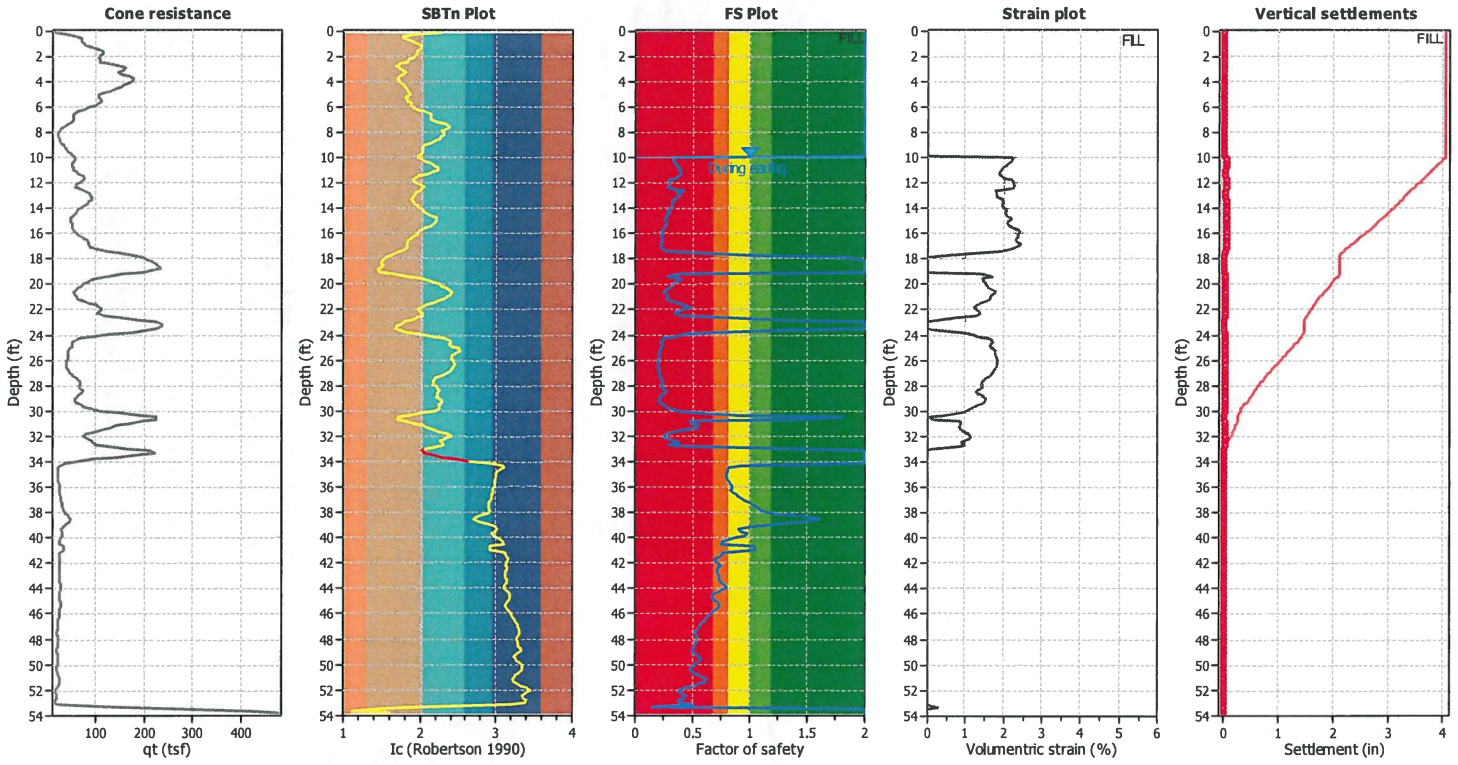
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	14.00 ft	Fill weight:	120.00 lb/ft³		
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes		
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes		
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay		
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No		
Depth to water table (insitu):	60.00 ft	Fill height:	4.00 ft	Limit depth:	N/A		

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
http://www.petra-inc.com/

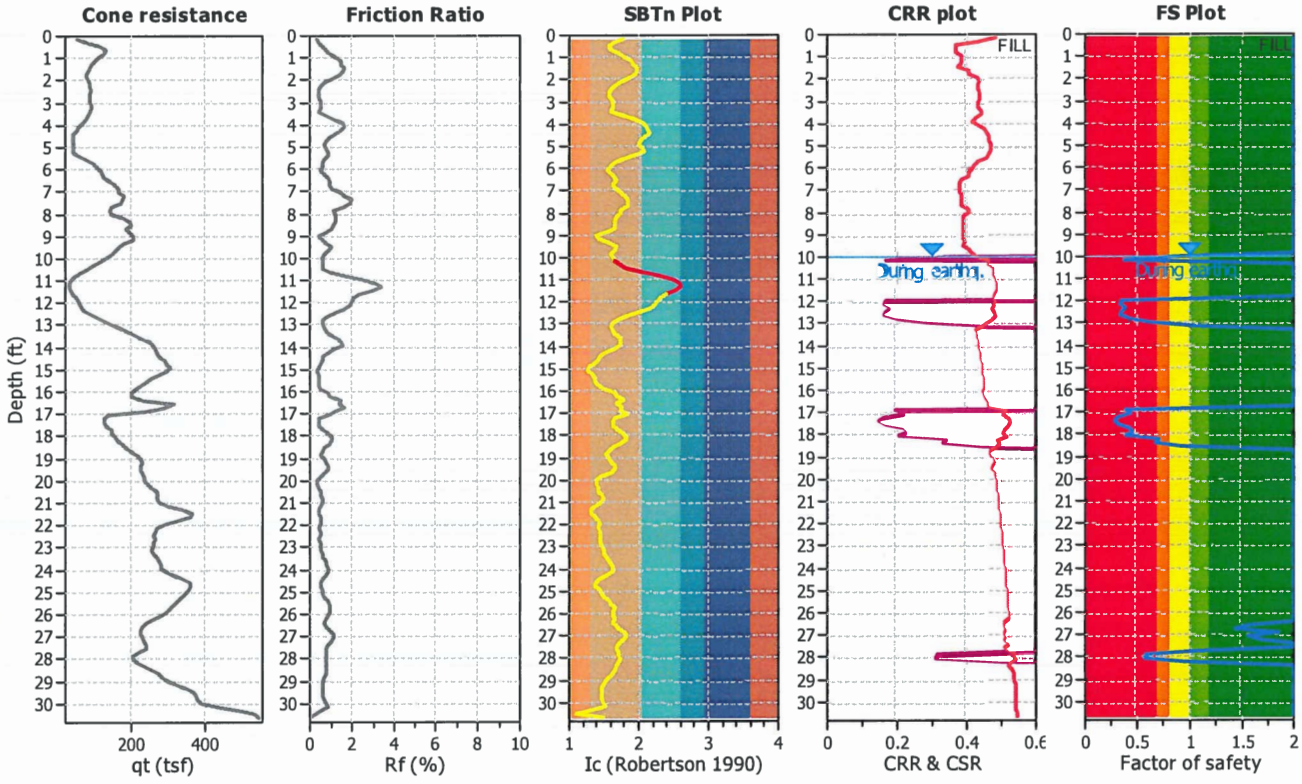
LIQUEFACTION ANALYSIS REPORT

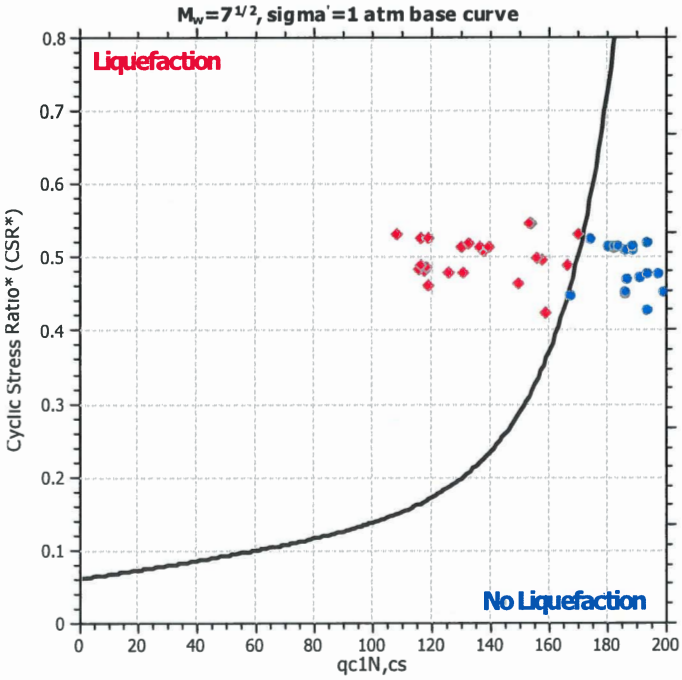
Project title : Bouquet Canyon **Location : Santa Clarita, California**

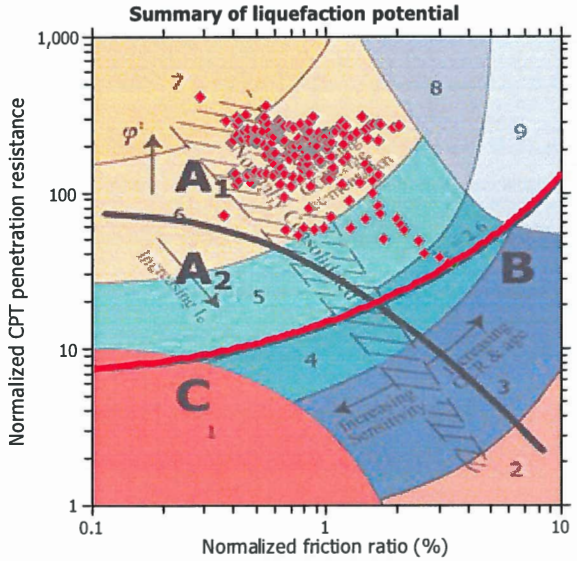
CPT file : CPT-P2

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	60.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	19.00 ft	Fill height:	9.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

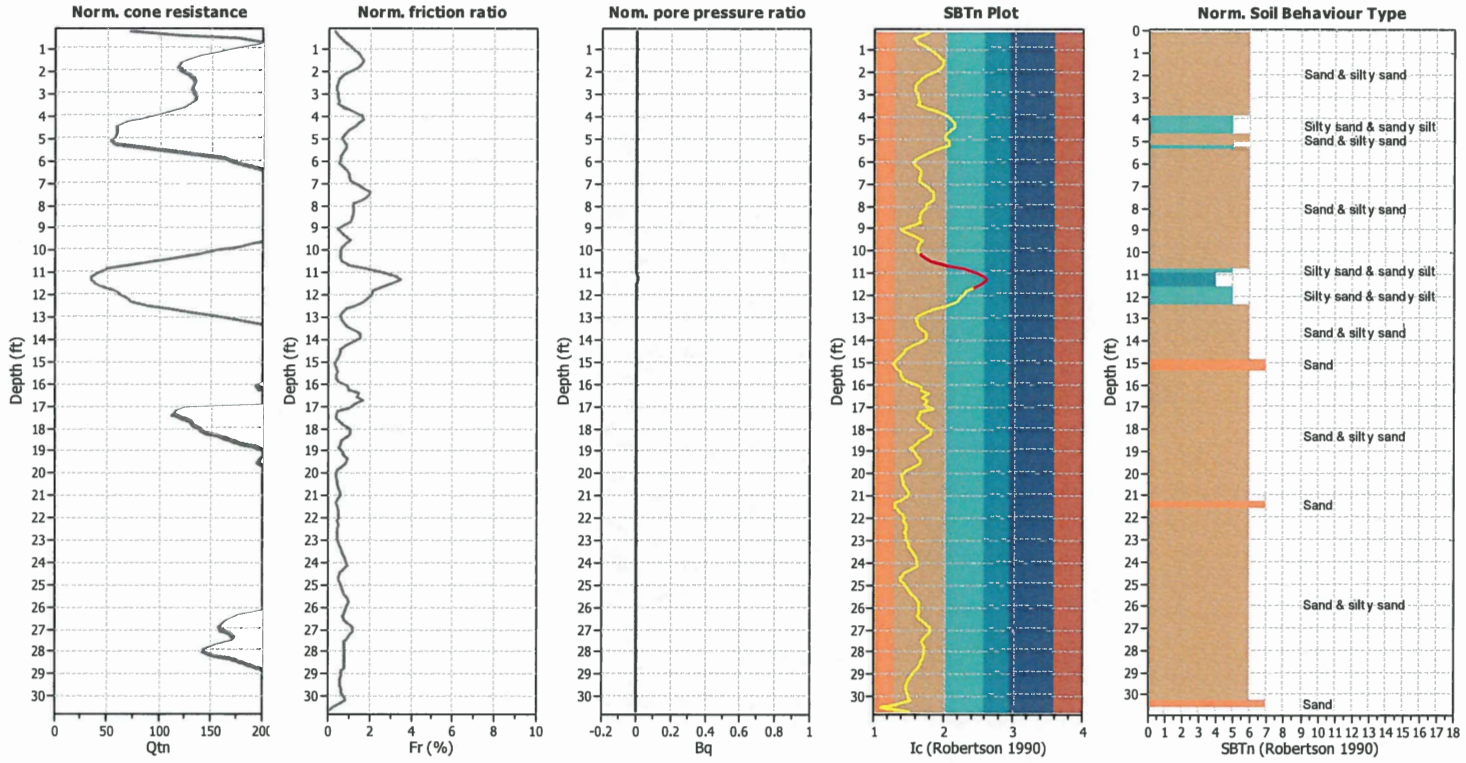






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



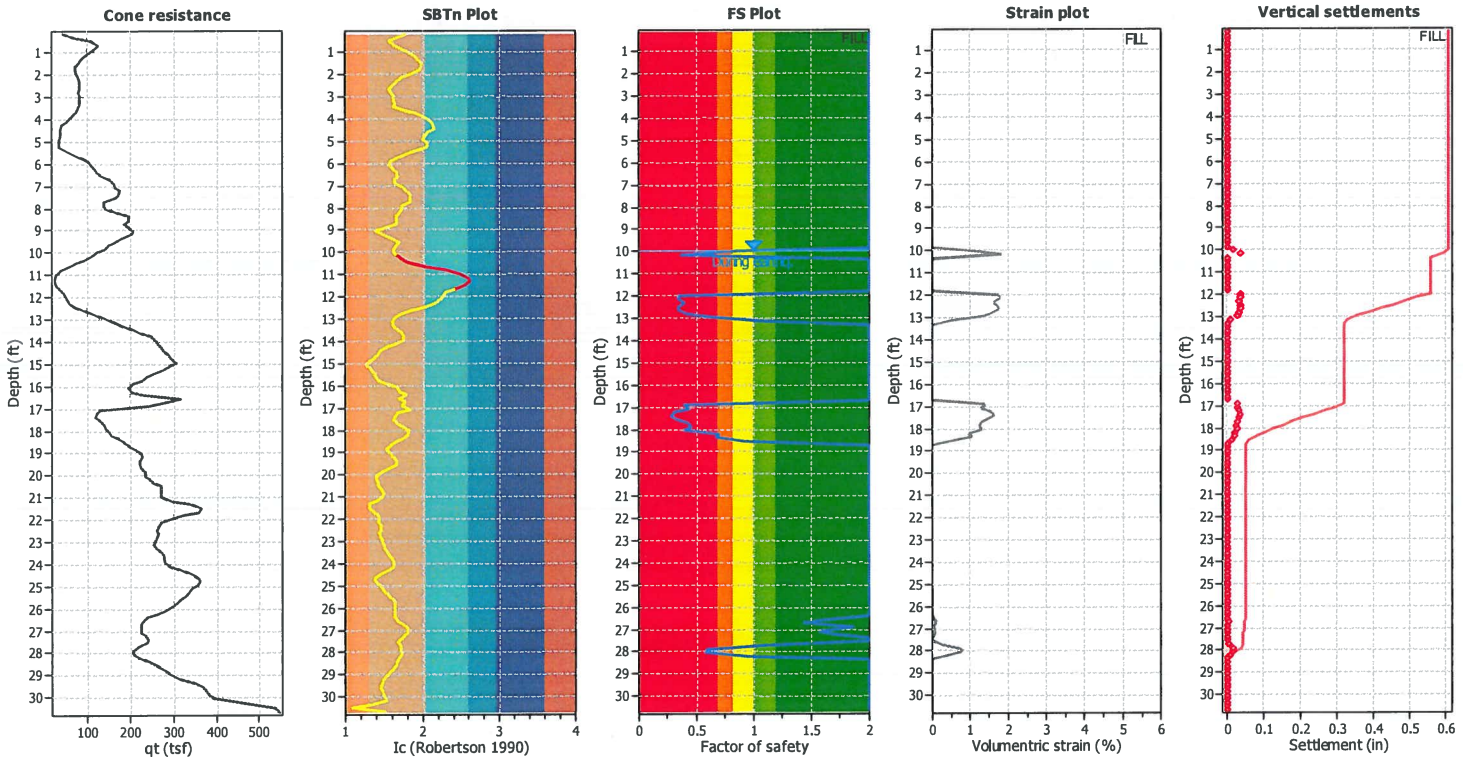
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	19.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	60.00 ft	Fill height:	9.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
http://www.petra-inc.com/

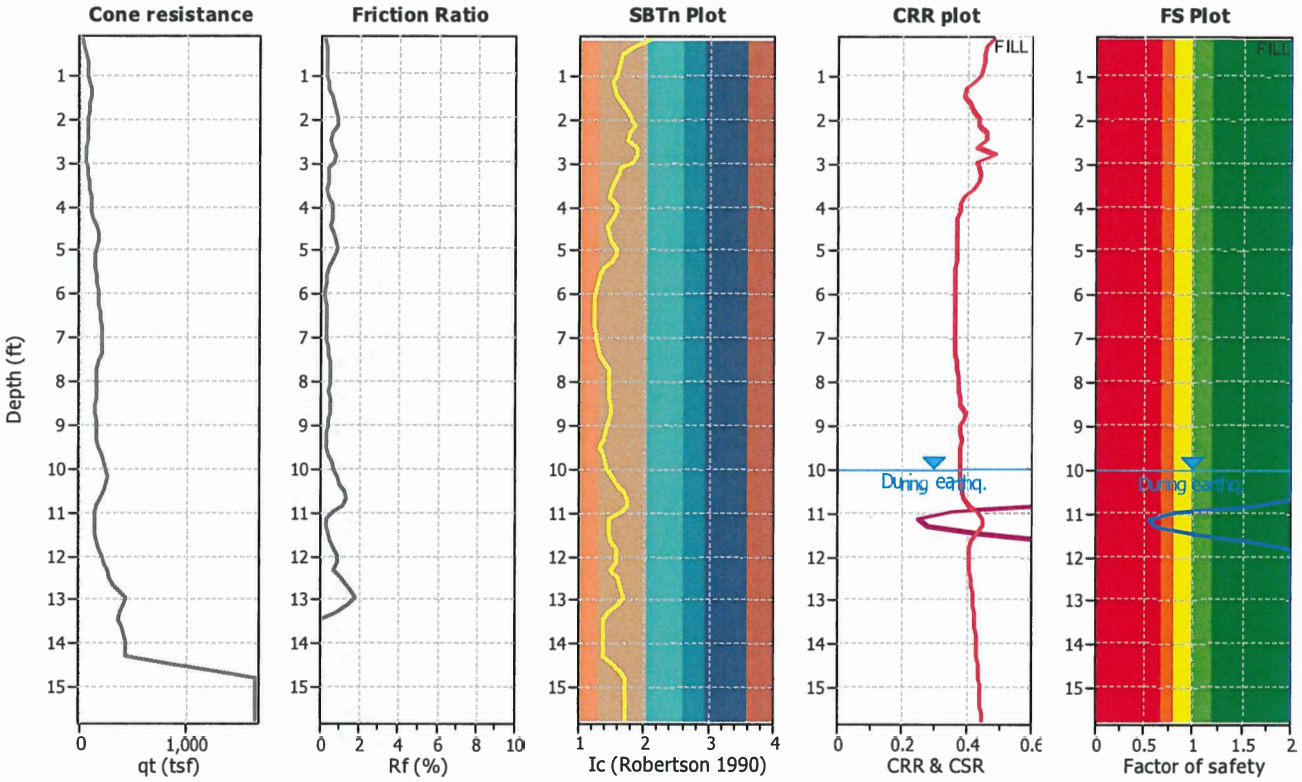
LIQUEFACTION ANALYSIS REPORT

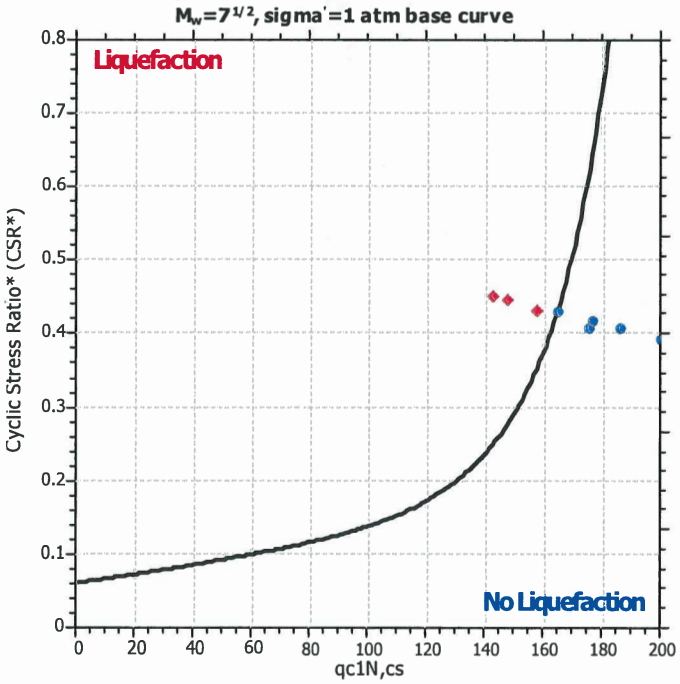
Project title : Bouquet Canyon **Location : Santa Clarita, California**

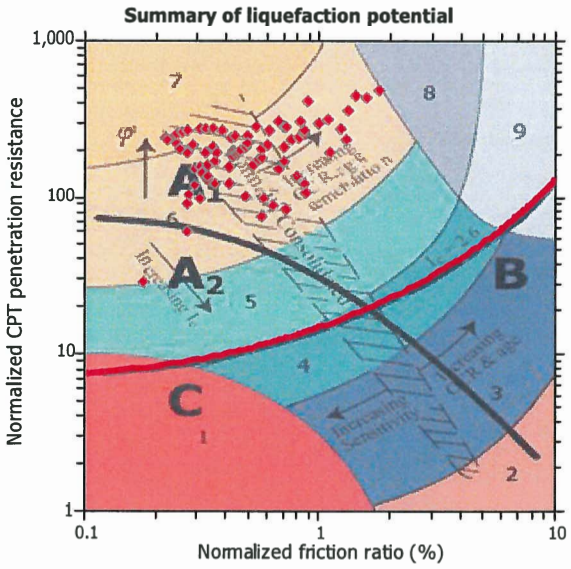
CPT file : CPT-P3

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	58.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	16.00 ft	Fill height:	6.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

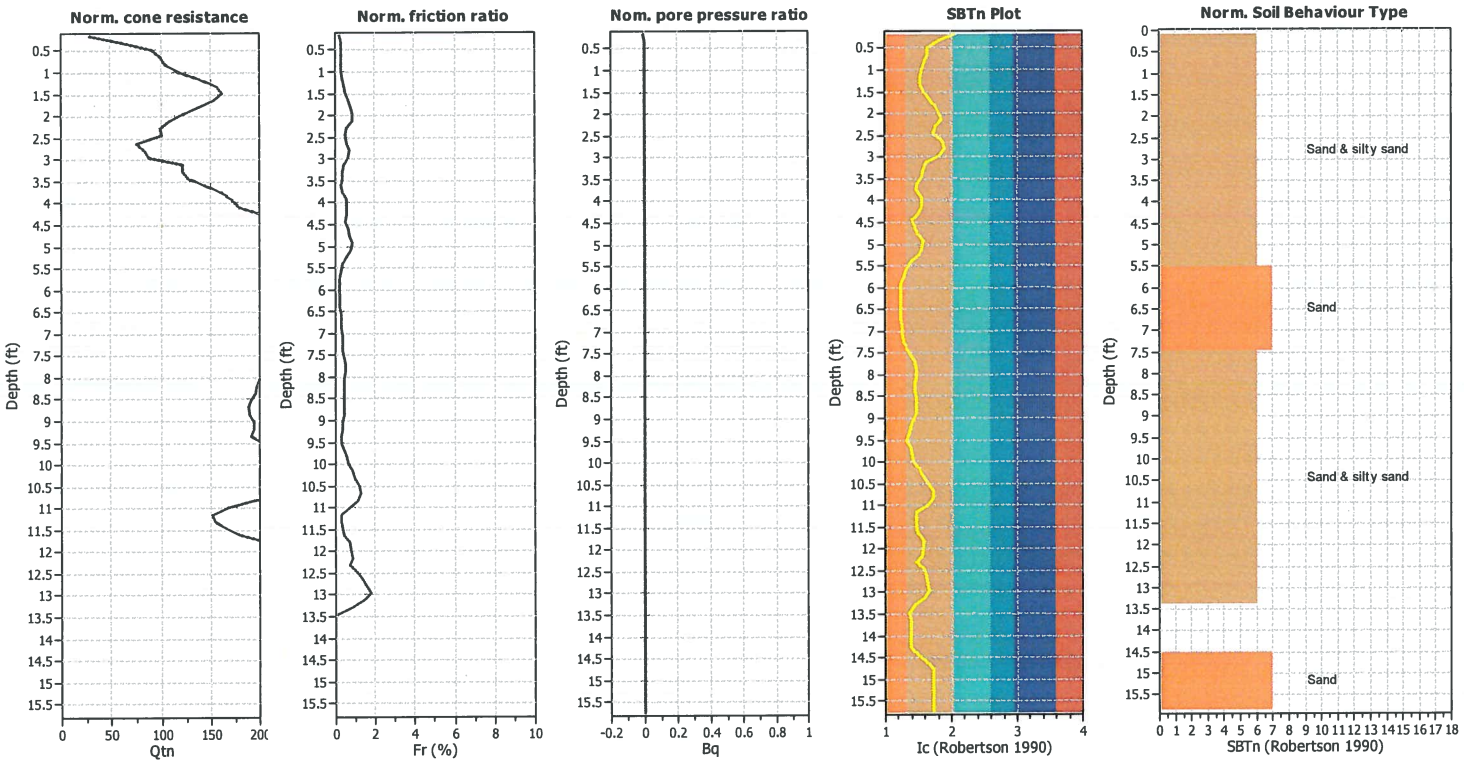






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



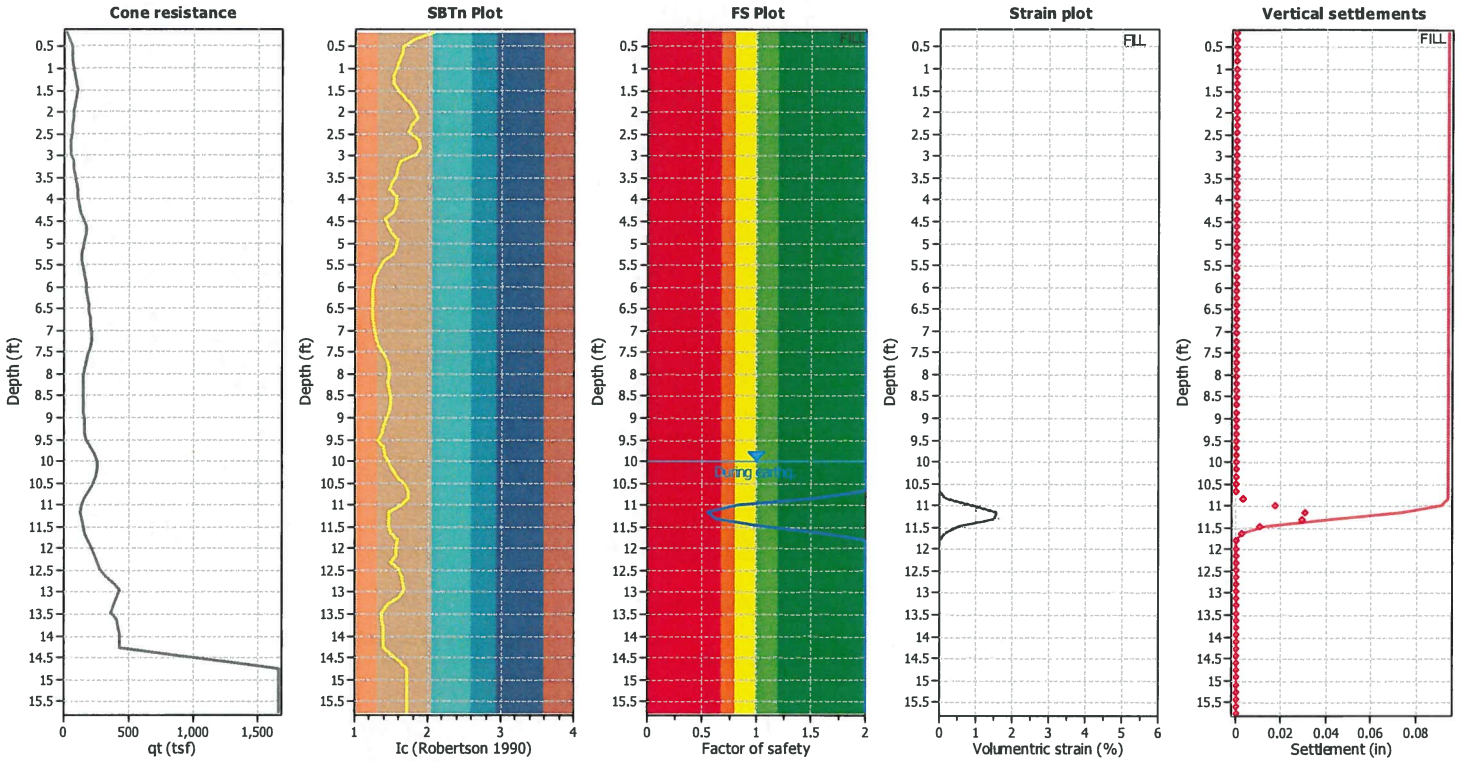
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	16.00 ft	Fill weight:	120.00 lb/ft³		
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes		
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes		
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay		
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No		
Depth to water table (insitu):	58.00 ft	Fill height:	6.00 ft	Limit depth:	N/A		

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
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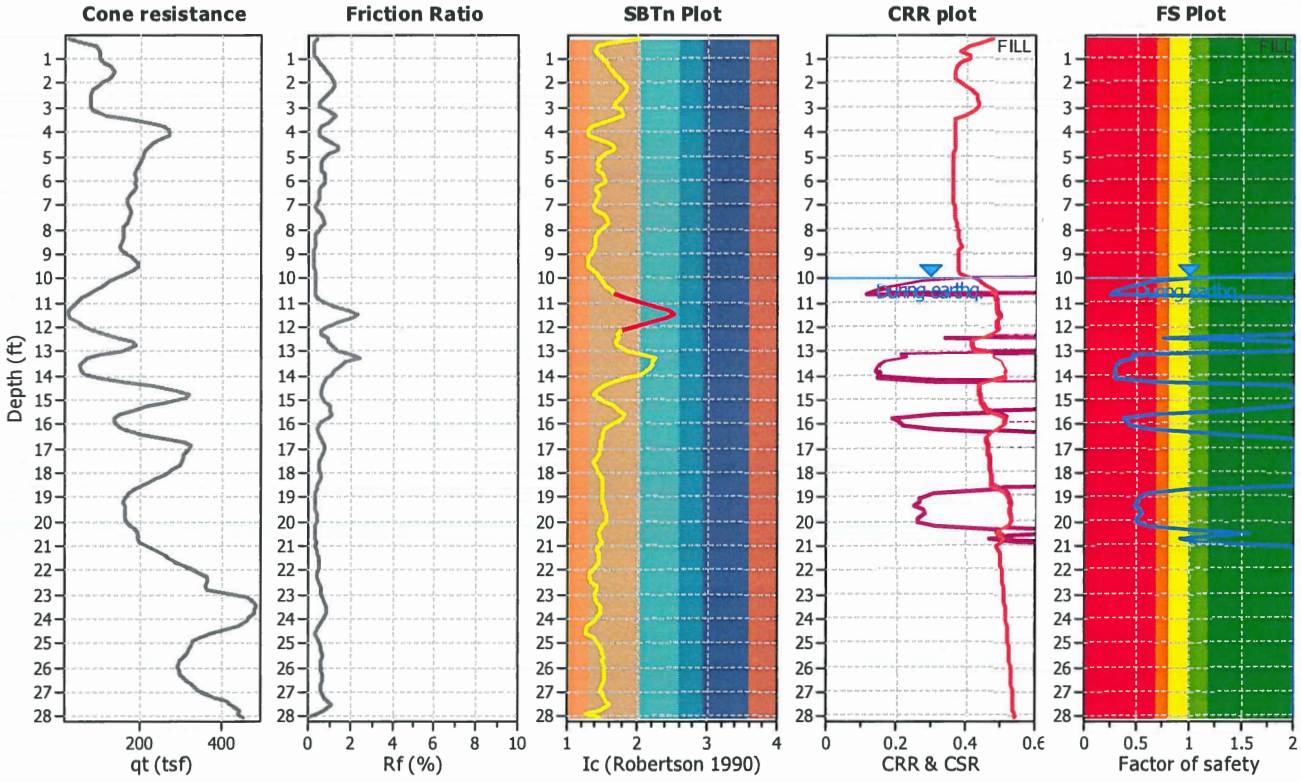
LIQUEFACTION ANALYSIS REPORT

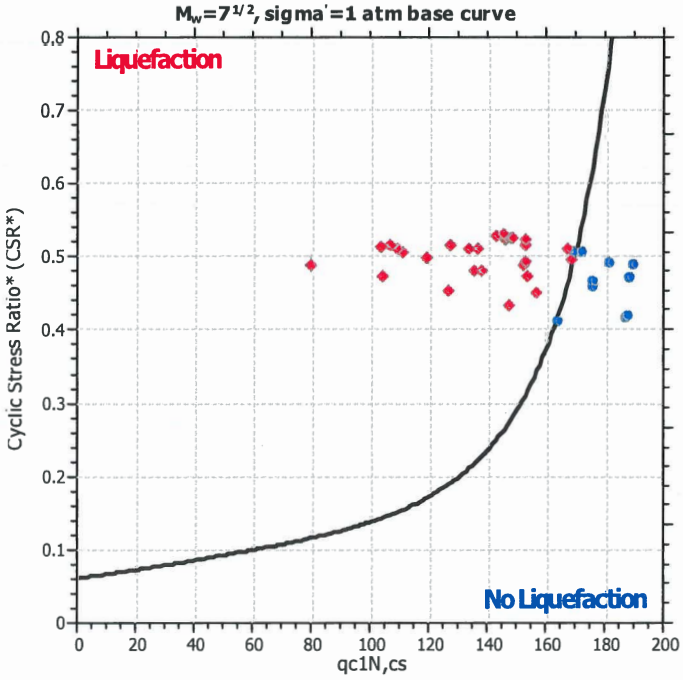
Project title : Bouquet Canyon **Location : Santa Clarita, California**

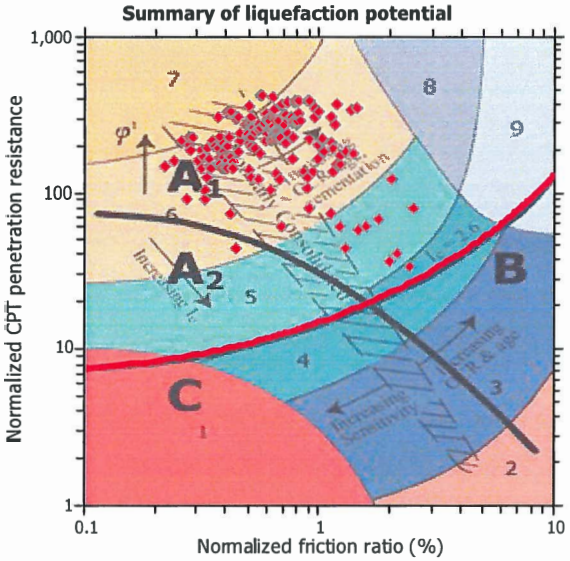
CPT file : CPT-P3B

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	58.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	16.00 ft	Fill height:	6.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

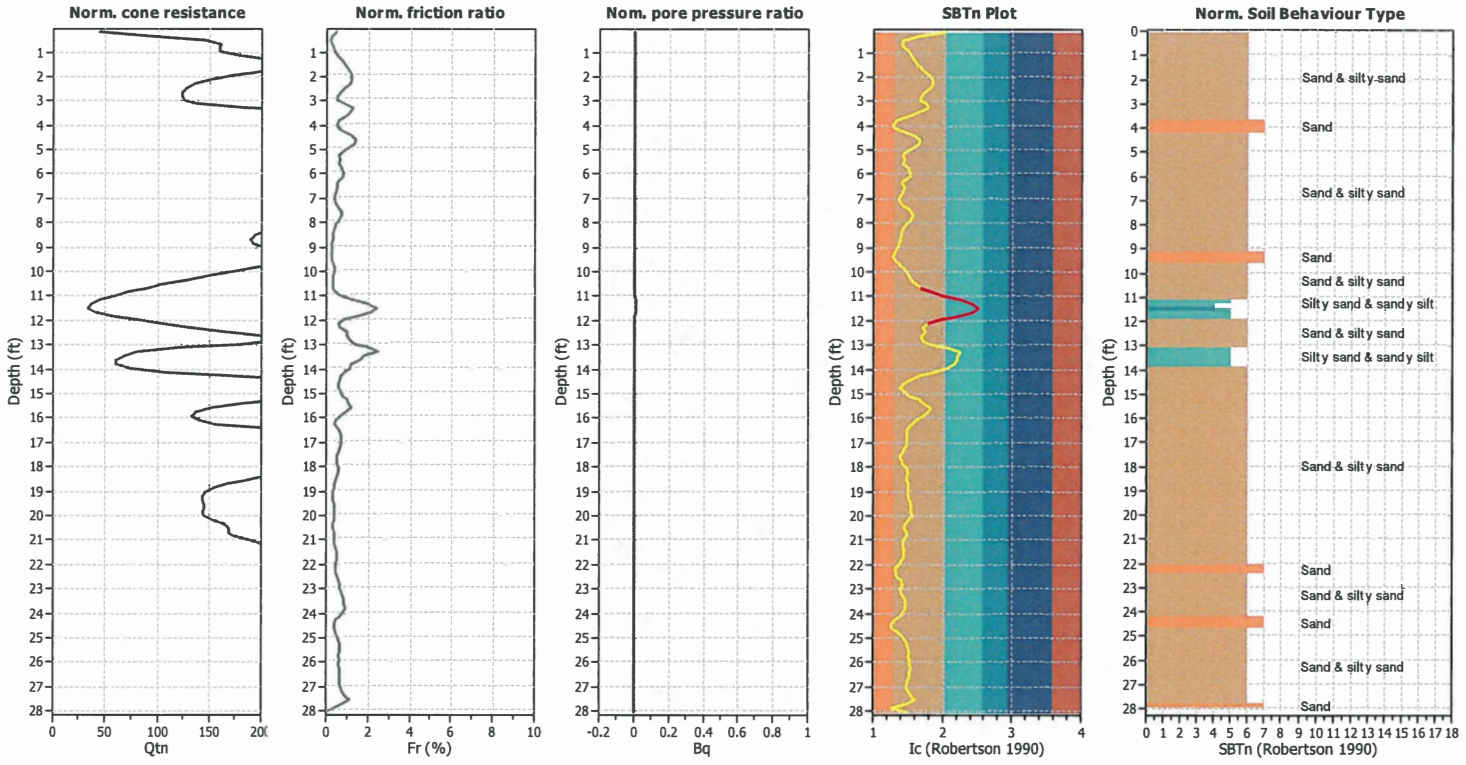






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



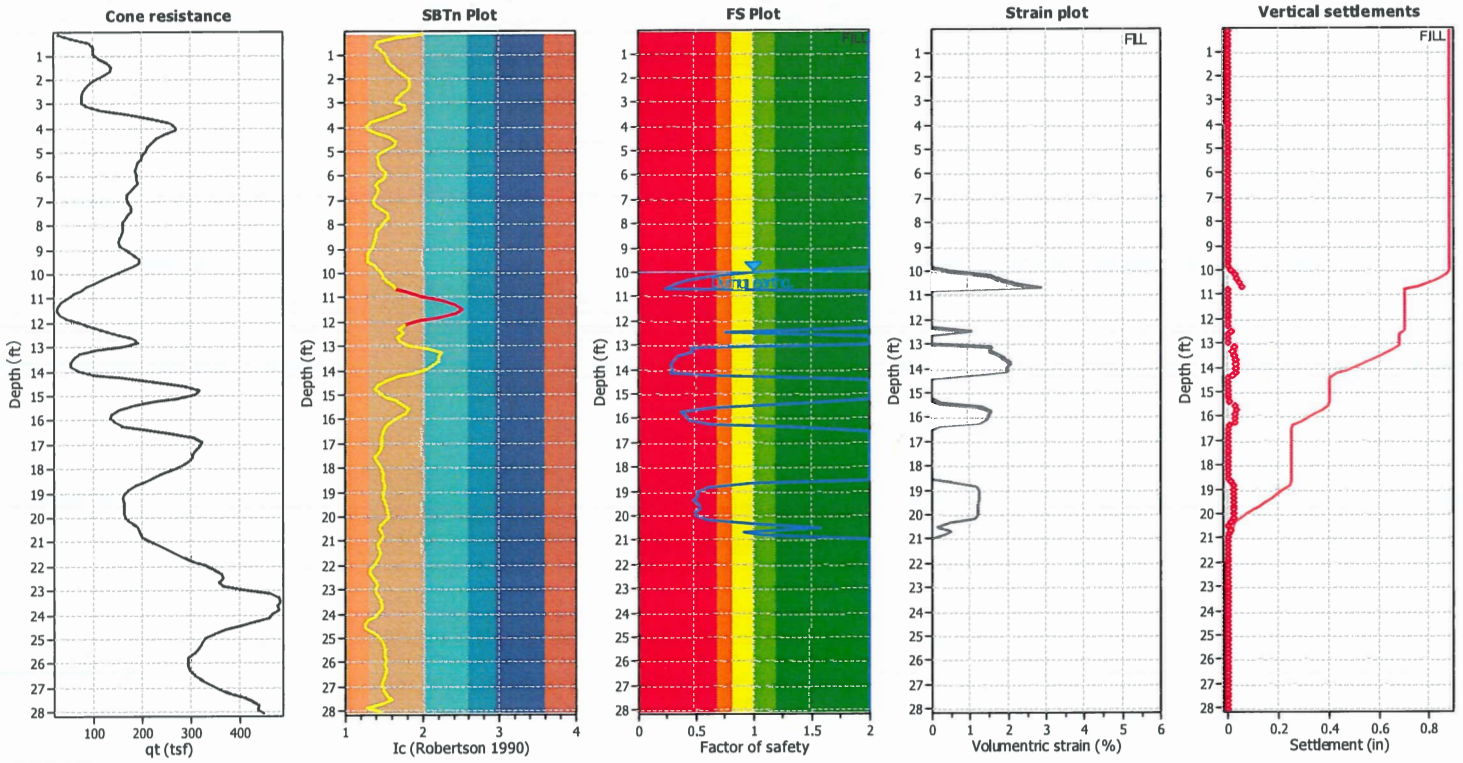
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	16.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	58.00 ft	Fill height:	6.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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3186 Airway Avenue, Suite K
Costa Mesa, CA 92626
http://www.petra-inc.com/

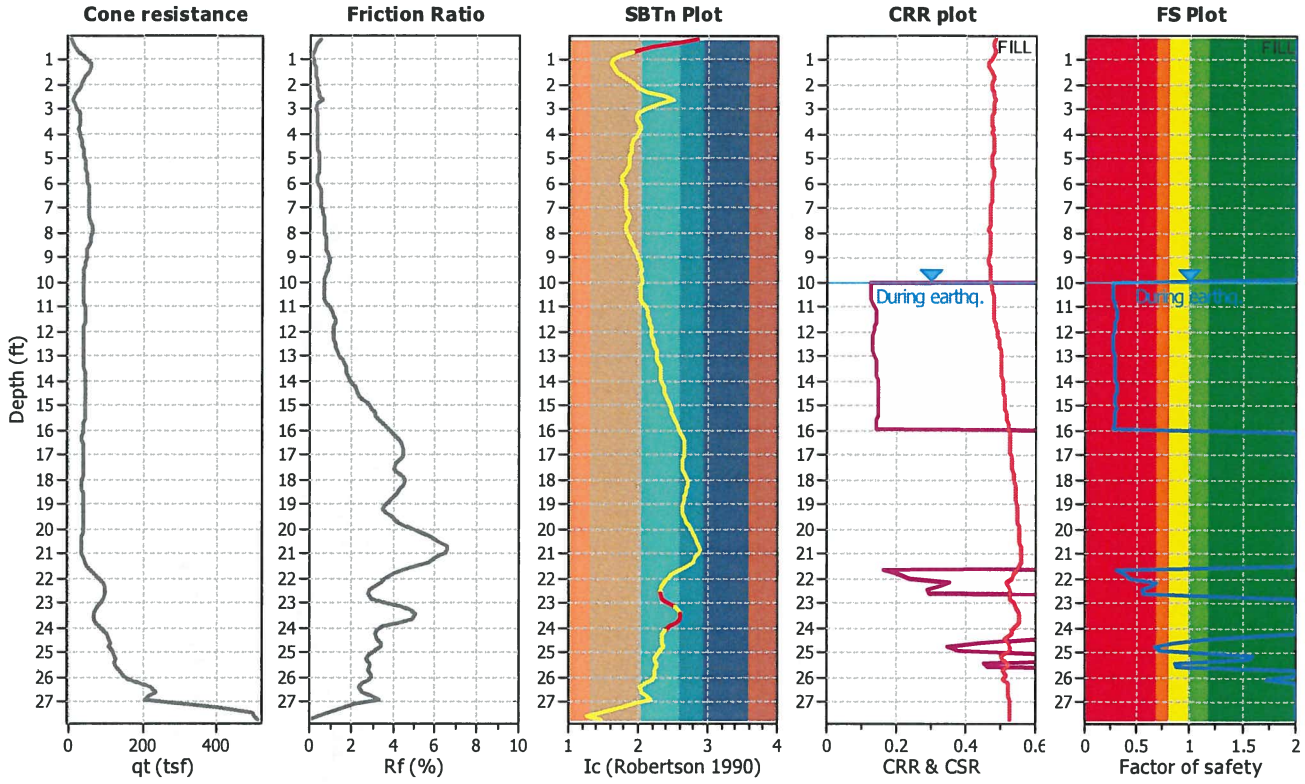
LIQUEFACTION ANALYSIS REPORT

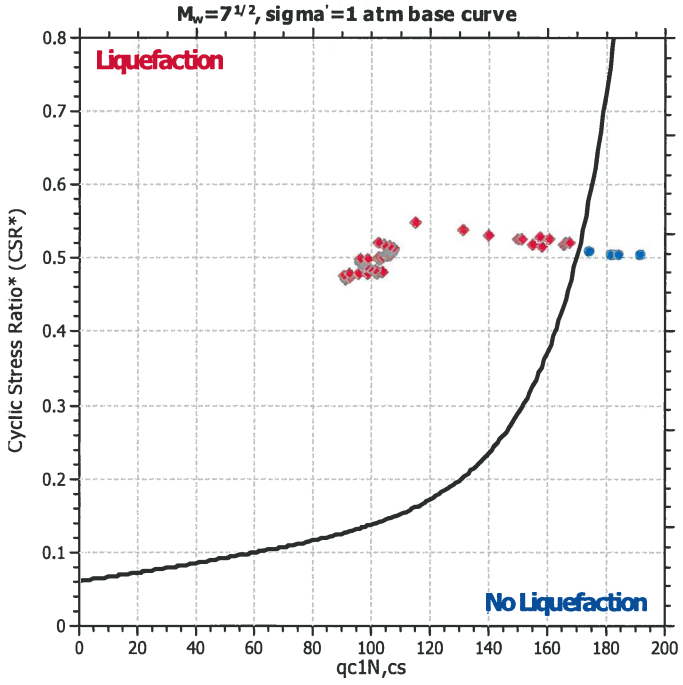
Project title : Bouquet Canyon **Location : Santa Clarita, California**

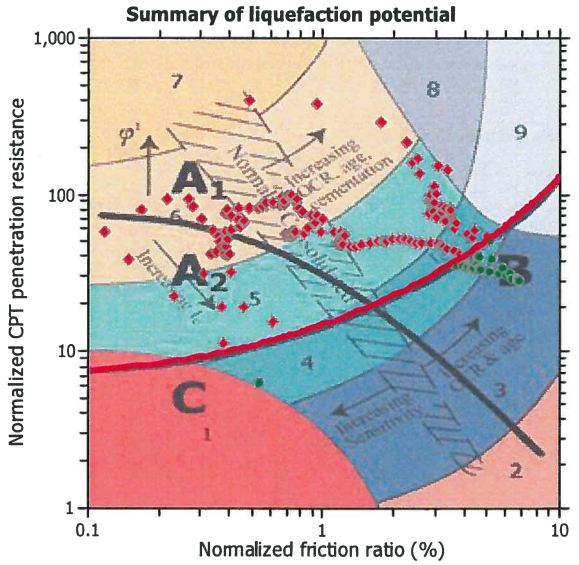
CPT file : CPT-P4

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	50.00 ft	Use fill:	Yes	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	20.00 ft	Fill height:	10.00 ft	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	120.00 lb/ft³	Limit depth:	N/A
Earthquake magnitude M_w:	6.85	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.63	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

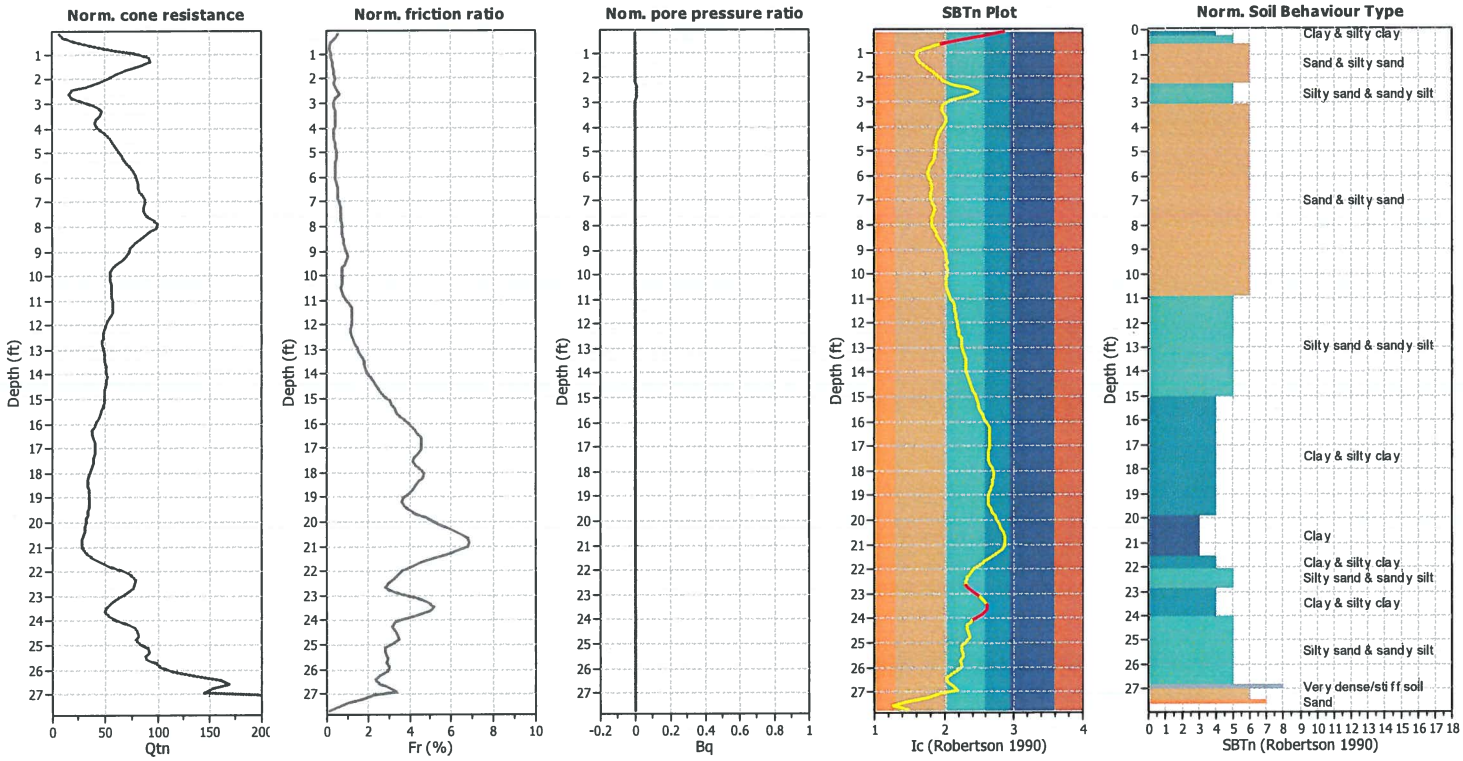






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	20.00 ft	Fill weight:	120.00 lb/ft³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.85	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.63	Use fill:	Yes	Limit depth applied:	No
Depth to water table (insitu):	50.00 ft	Fill height:	10.00 ft	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
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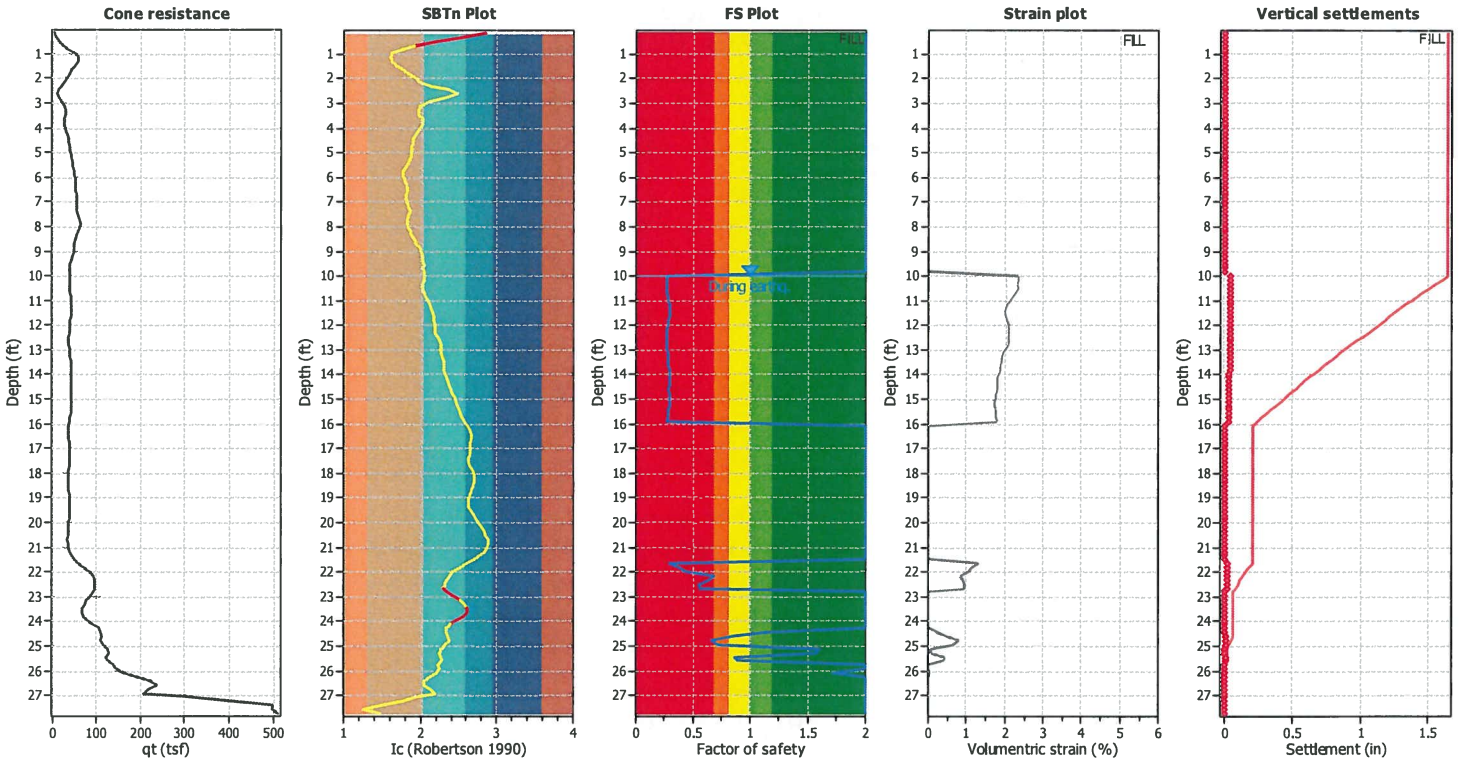
9. Very stiff fine grained

Estimation of post-earthquake settlements

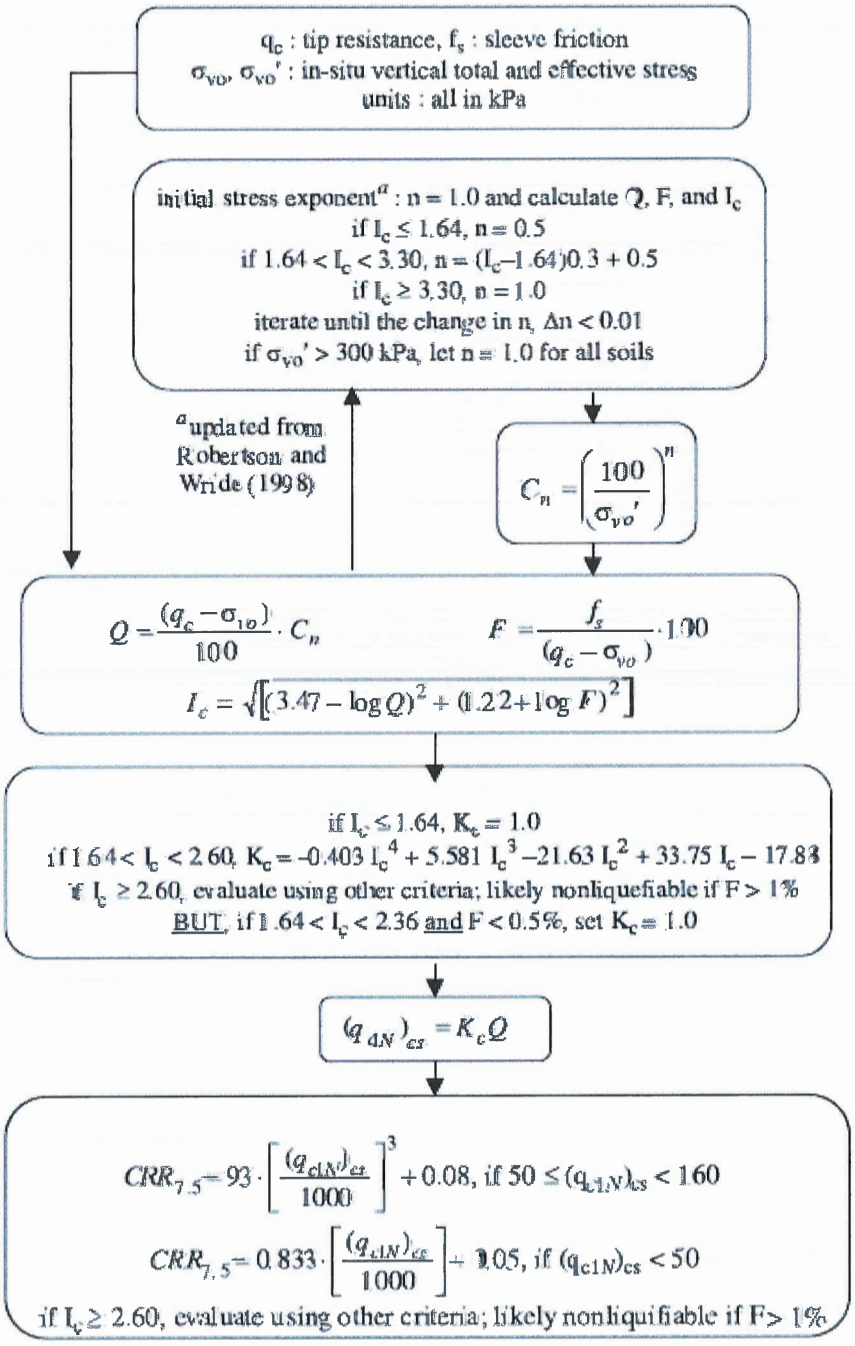


Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

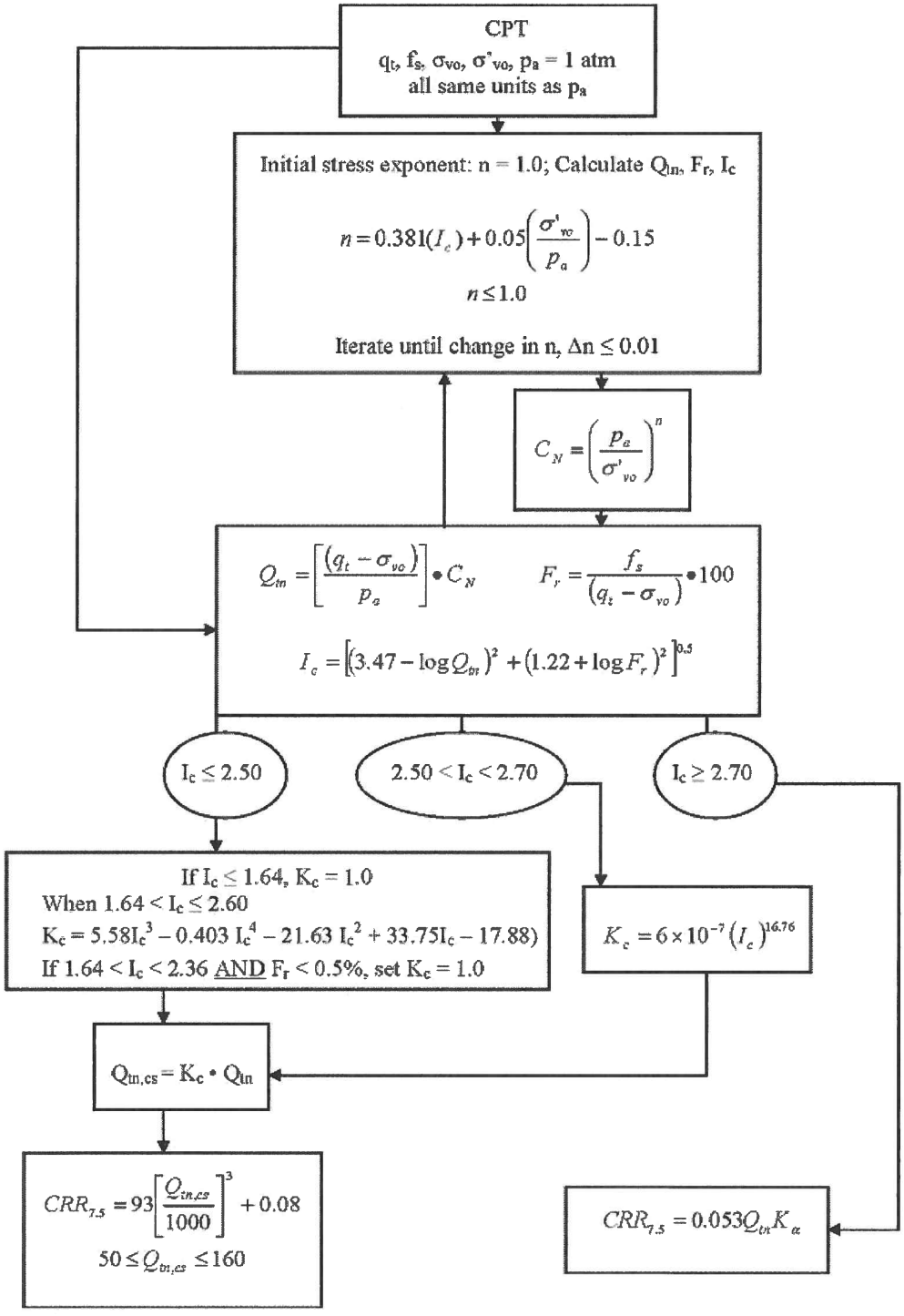
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

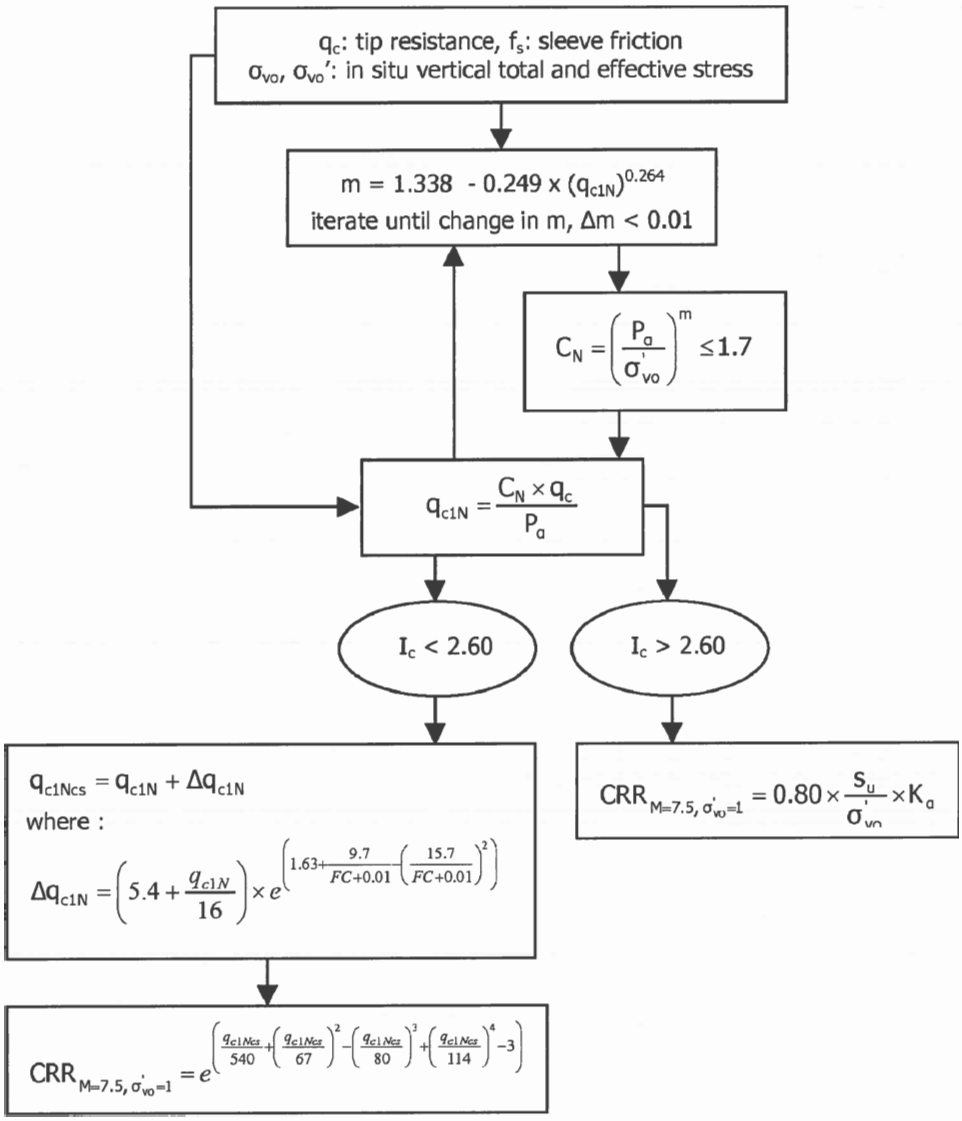
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

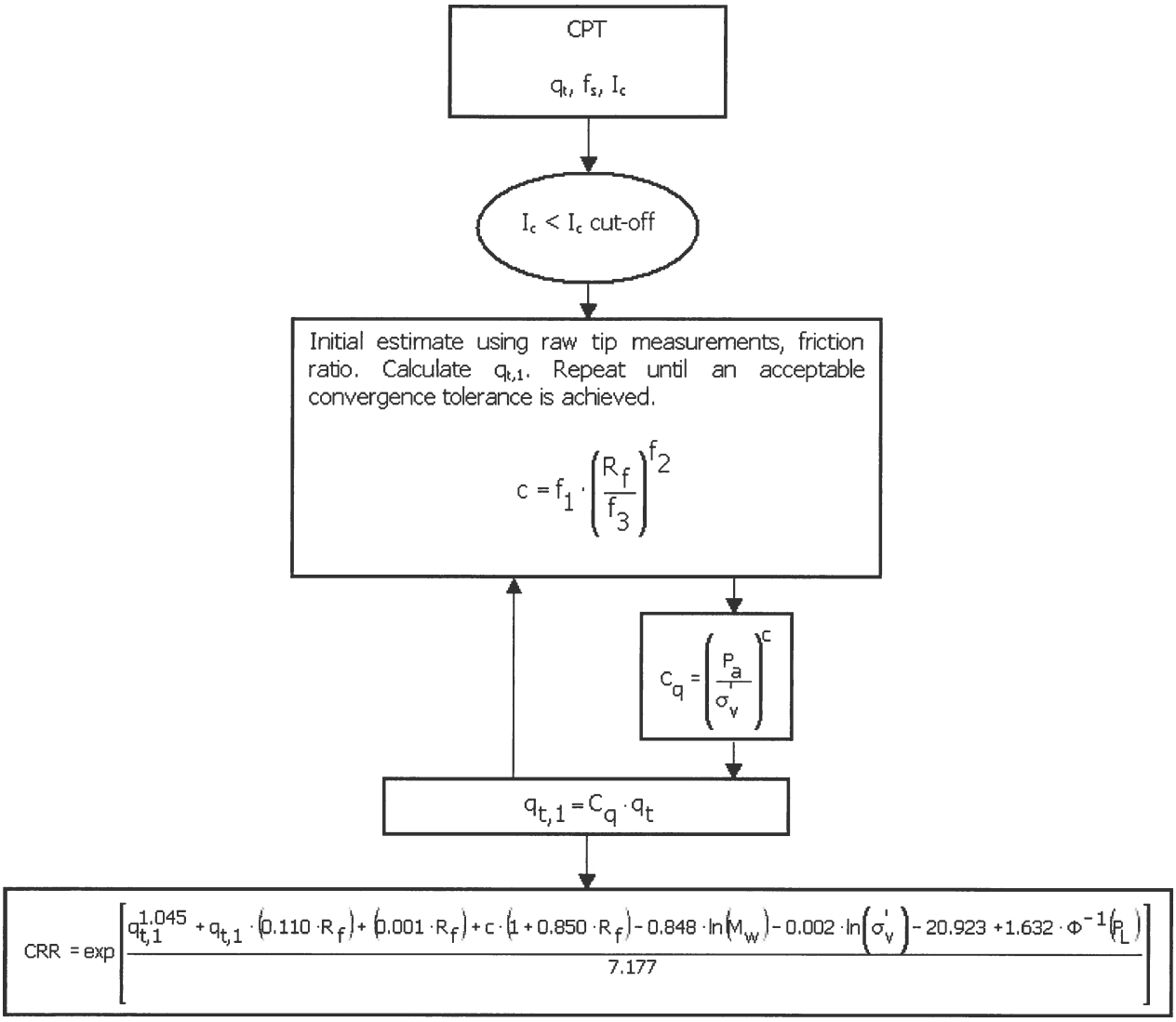


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

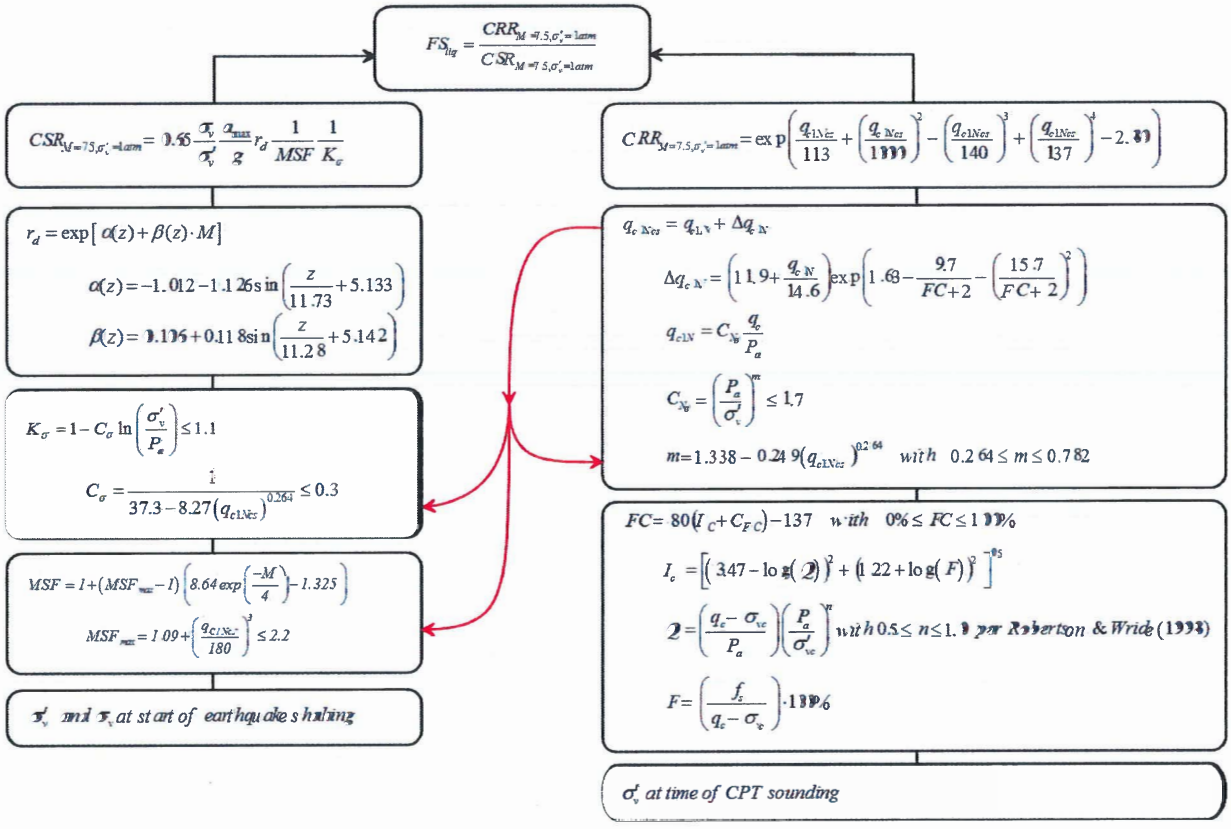
Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



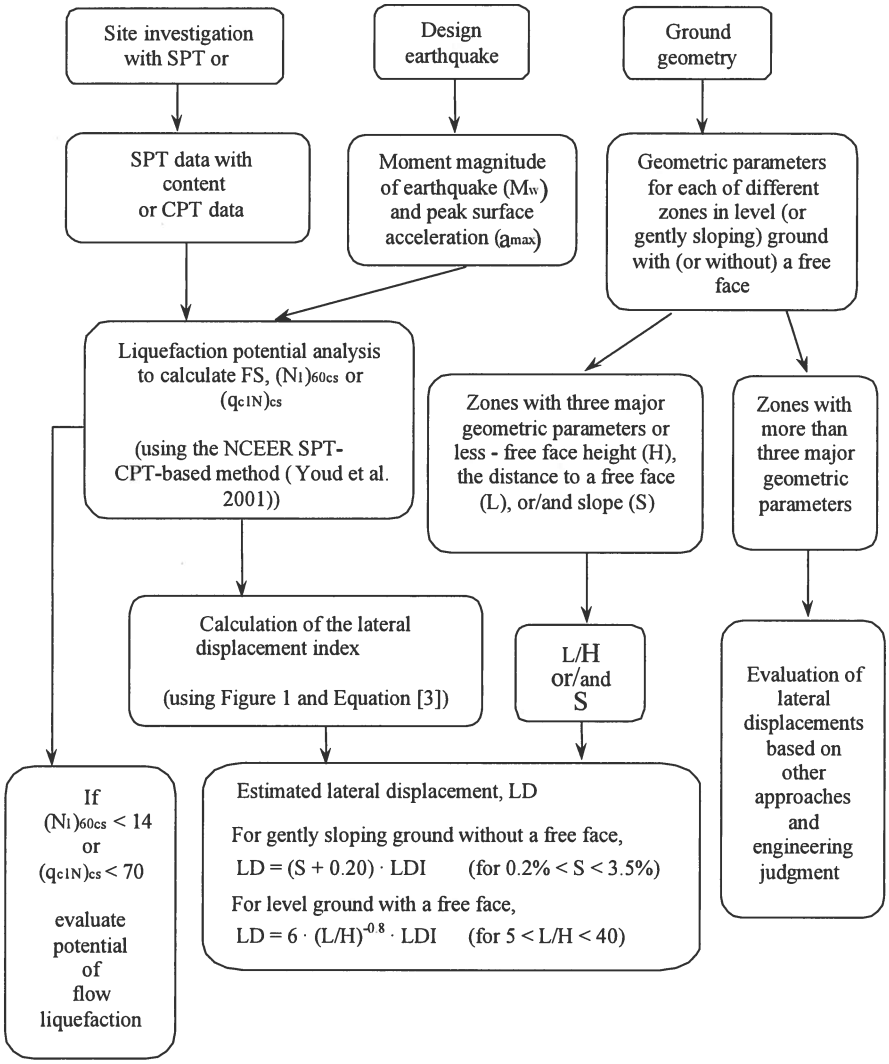
Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



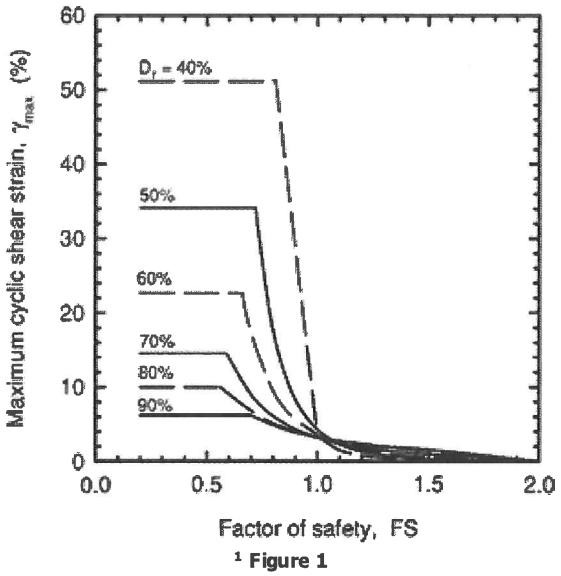
Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)



Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



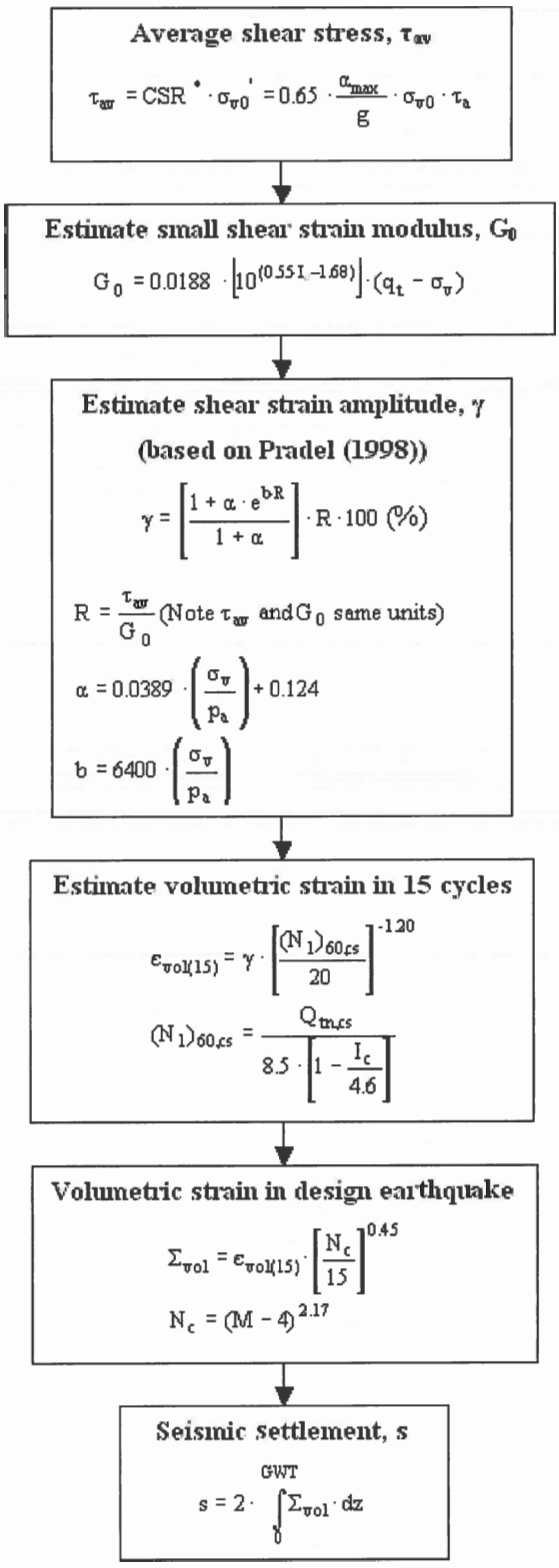
[1] **Figure 1**

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] **Equation [3]**

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

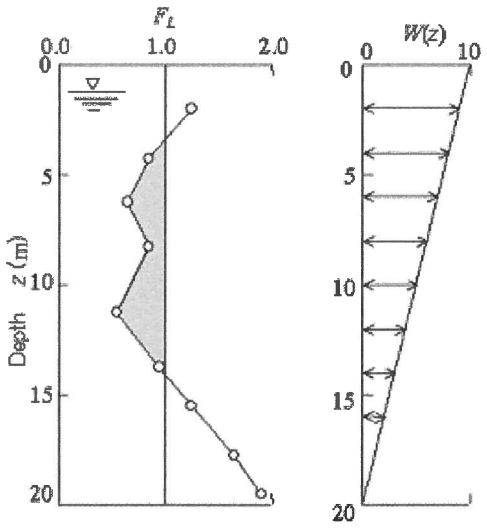
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5z) \times F_L \times dz$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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- Papathanassiou G., 2008, LPI-based approach for calibrating the severity of liquefaction-induced failures and for assessing the probability of liquefaction surface evidence, Eng. Geol. 96:94–104
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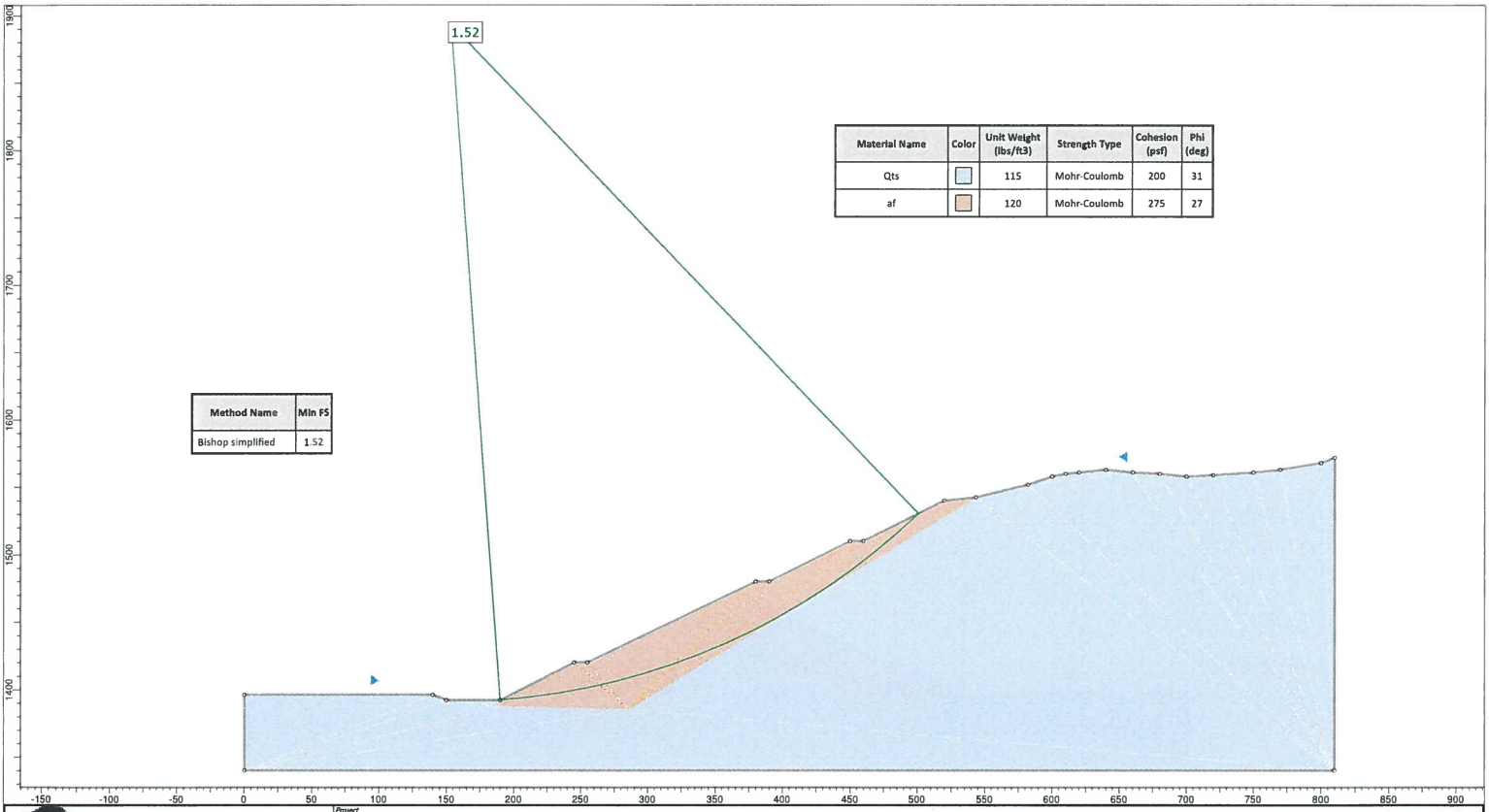
- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 8, August 1, 2006
- I. M. Idriss and R. W. Boulanger, 2008. Soil liquefaction during earthquakes, Earthquake Engineering Research Institute MNO-12
- Jonathan D. Bray & Jorge Macedo, Department of Civil & Environmental Engineering, Univ. of California, Berkeley, CA, USA, Simplified procedure for estimating liquefaction -induced building settlement, *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering, Seoul 201*

APPENDIX C

SLOPE STABILITY ANALYSES



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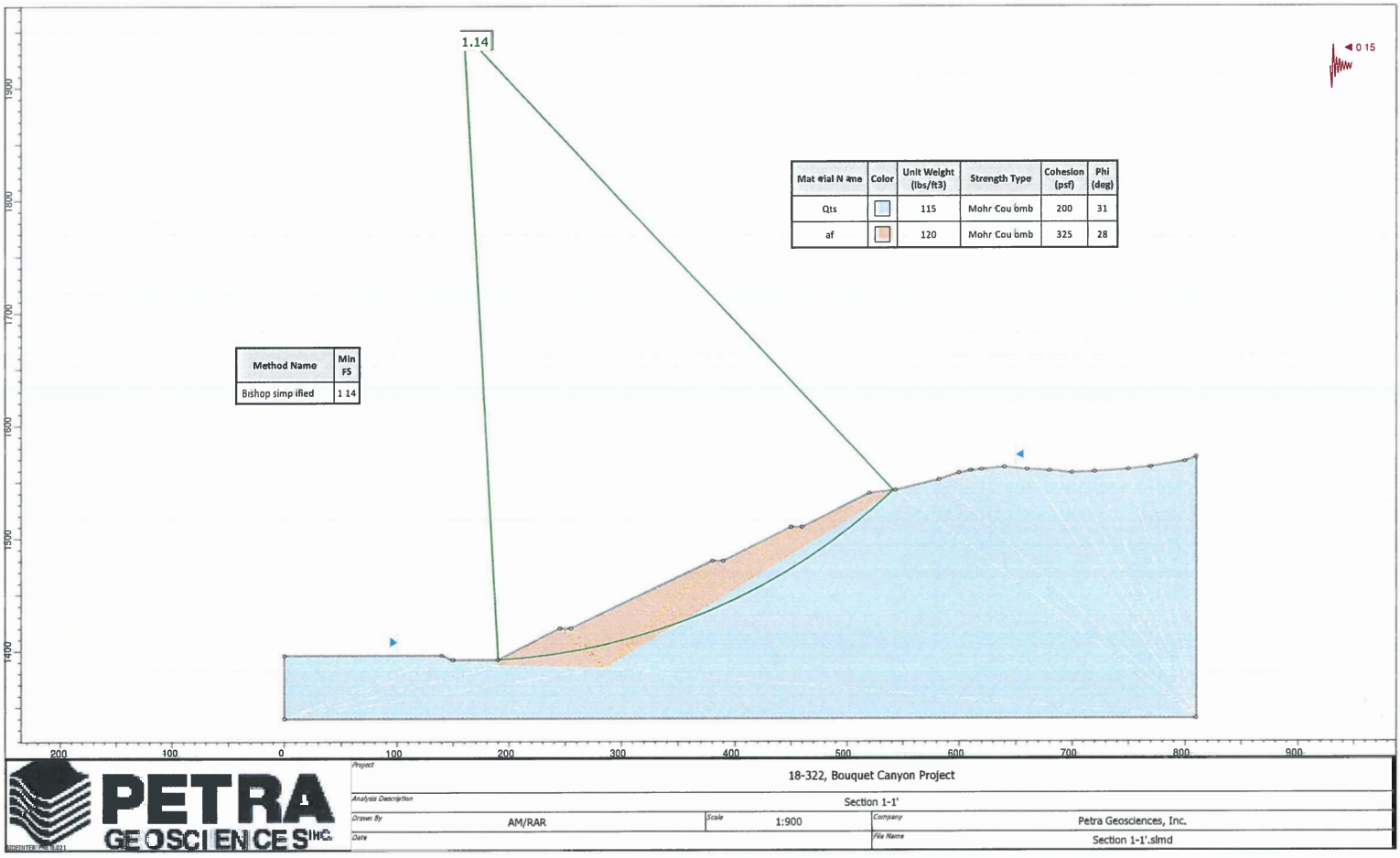

PETRA GEOSCIENCES INC.

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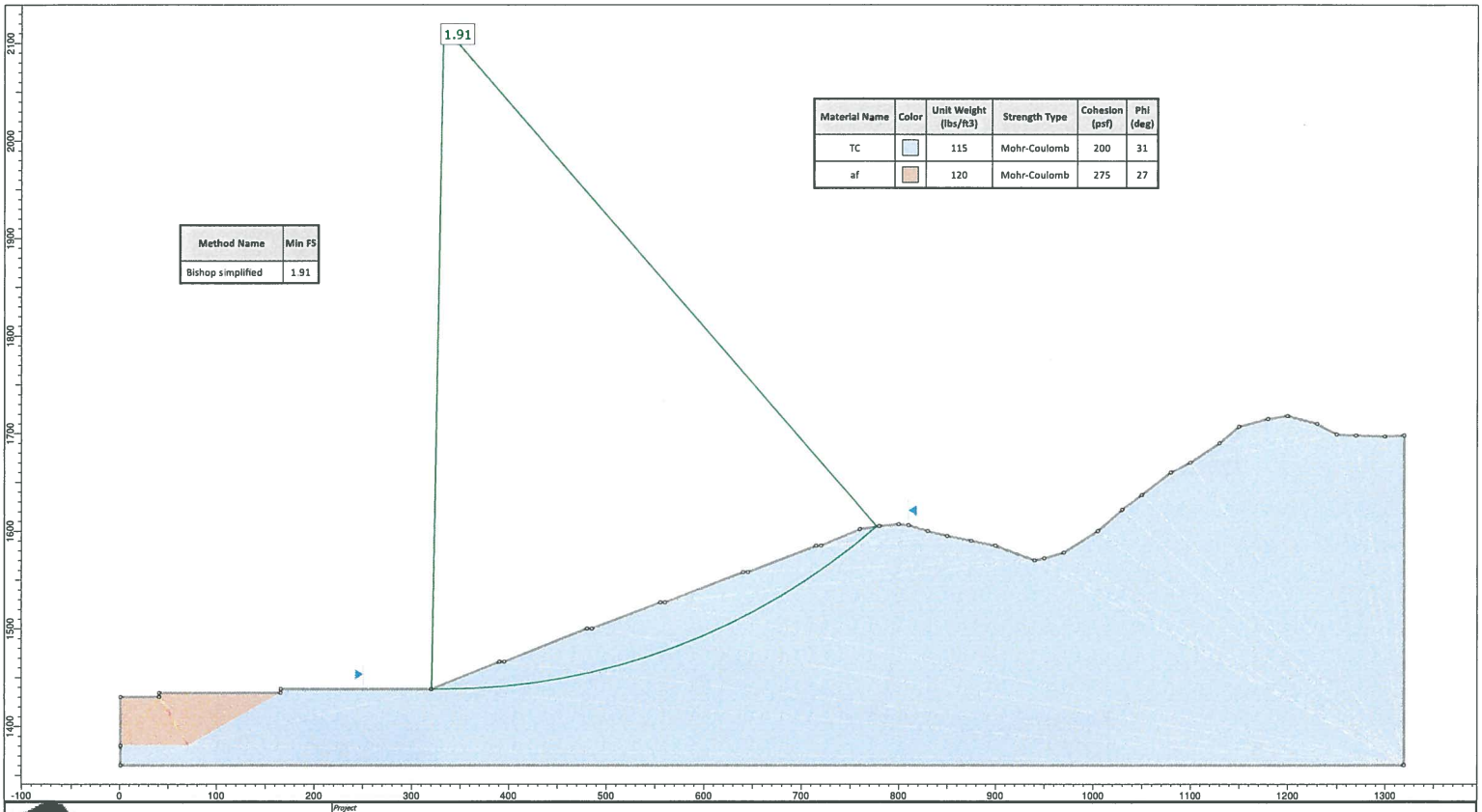

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SLIDEINTERPRET 8.021

Project	18-322, Bouquet Canyon Project				
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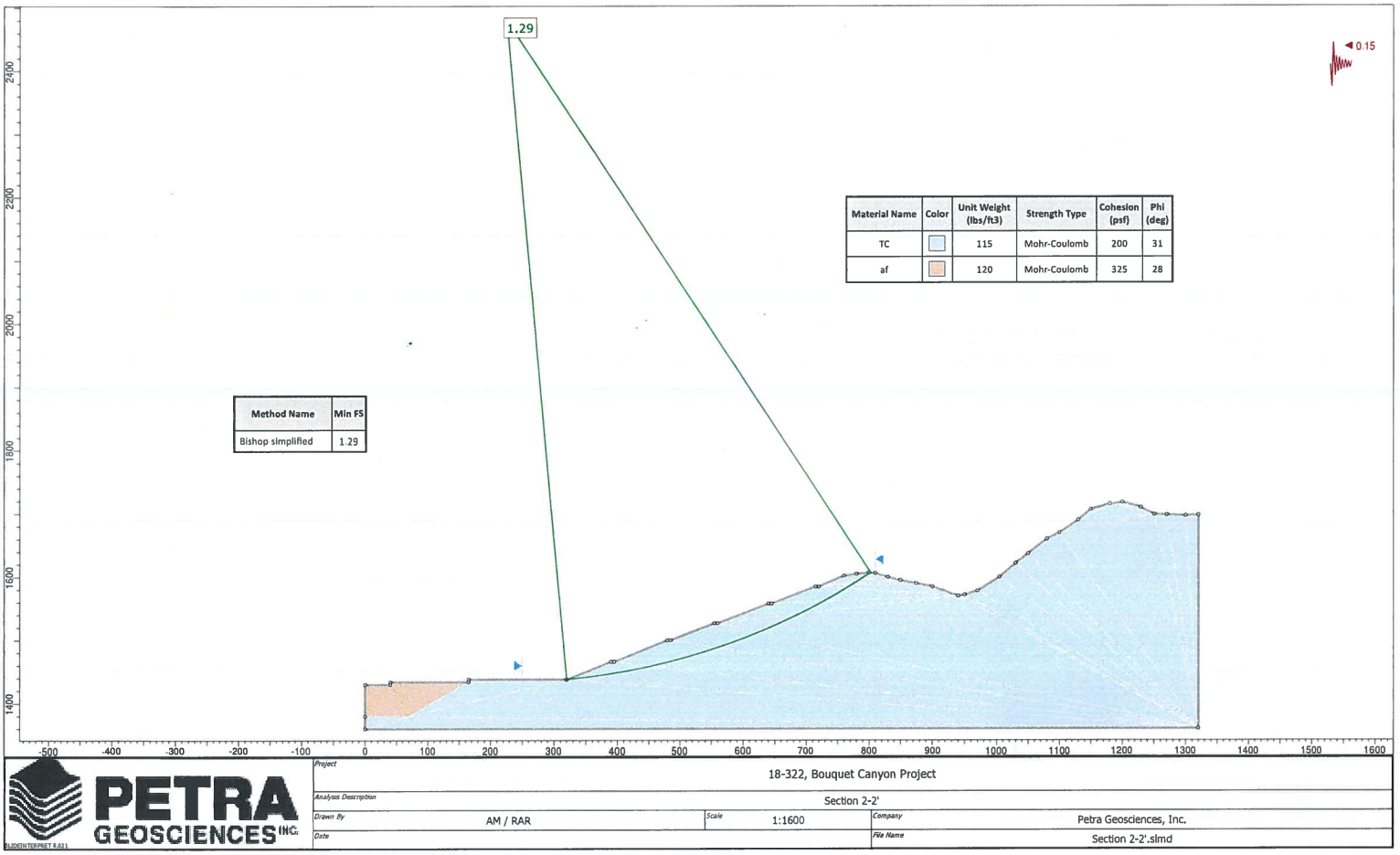

PETRA GEOSCIENCES INC.

SLIDEINTERPRET 8.021

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Appendix E:
Geotechnical Report and Paleontological Resources Record Check

Part 2: Paleontological Resources Records Check

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

30 January 2019

Michael Baker International
2729 Prospect Park Drive, Suite 220
Rancho Cordova, CA 95670

Attn: Nichole Jordan Davis, Senior Cultural Resources Manager

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed Bouquet Canyon Road Project, in the City of Santa Clarita, Los Angeles County, project area

Dear Nichole:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Bouquet Canyon Road Project, in the City of Santa Clarita, Los Angeles County, project area as outlined on the portion of the Mint Canyon USGS topographic quadrangle map that you sent to me via e-mail on 16 January 2019. We have no vertebrate fossil localities that lie directly within the proposed project area, but we do have localities nearby from the same sedimentary deposits that occur in the proposed project area.

About the northeastern half of the proposed project area has surficial deposits composed of younger Quaternary Alluvium, derived from the Bouquet Canyon drainage that currently flows through this portion of the proposed project area. These deposits usually do not contain significant vertebrate fossils, at least in the uppermost layers, but they are probably underlain at relatively shallow depth by older sedimentary deposits. In the southwestern portion of the proposed project area there are exposures of the terrestrial Pliocene Saugus Formation. Our closest fossil vertebrate localities in the Saugus Formation are LACM 7988-7989, almost due south of the very western-most portion of the proposed project area north of the Santa Clara River and south of the mouth of Plum Canyon. These localities produced fossil specimens of finch, Fringillidae, deer mouse, *Peromyscus hagermanensis*, wood rat, *Neotoma*, pocket gopher,

Thomomys, pocket mouse, Heteromyidae, and squirrel, Sciuridae. Further to the southwest of the proposed project area, in Saugus near Bouquet Junction, our Saugus Formation localities LACM 6803-6804 produced fossil specimens of horse, *Equus*, and camel, Camelidae.

In the northwestern portion of the proposed project area there are exposures of the marine late Miocene Castaic Formation. North-northwest and due north of the proposed project area, on the first and third ridges east of Haskell Canyon respectively, our Castaic Formation localities LACM 7772-7773 produced fossil specimens of sea turtle, Cheloniidae, carnivore, Carnivora, and baleen whale, Mysticeti. Further to the southeast of the proposed project area, just south of Humphreys, our Castaic Formation locality LACM 7656 produced a rare nearly complete carapace of a fossil leatherback turtle, *Psephophorus*.

Shallow excavations in the uppermost layers younger Quaternary Alluvium as exposed in the northeastern half of the proposed project area are unlikely to uncover significant vertebrate fossils. Deeper excavations there that extend down into older sedimentary deposits, as well as any excavations in the exposures of the Saugus Formation or the Castaic Formation in the southwestern half of proposed project area may well uncover significant fossil vertebrate remains. Any substantial excavations in the proposed project area, therefore should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Sediment samples should also be collected and processed to determine the small fossil potential in these rock units. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

Appendix F:
Phase I Environmental Site Assessment

Part 1: Phase I Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

ASSESSORS PARCEL NUMBERS 2812-008-002, 2812-008-003, 2812-008-013, 2812-008-021, 2812-008-022, 2812-008-031, 2812-008-900, AND 2812-038-002,
SANTA CLARITA, CALIFORNIA

On Behalf Of:
The Bouquet Canyon Project Owner, LLC
Newport Beach, California

Prepared By:
Ramboll US Corporation
Irvine, California

Date
October 2018

Project Number
1690009953

RAMBOLL

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1.1	Site Summary	1
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1. SUMMARY OF CONCLUSIONS

Ramboll US Corporation (Ramboll) was retained by The Bouquet Canyon Project Owner, LLC (the Client) to perform a Phase I Environmental Site Assessment (ESA) of the property located at Assessor Parcel Numbers (APNs) 2812-008-002, 2812-008-003, 2812-008-013, 2812-008-021, 2812-008-022, 2812-008-031, 2812-008-900, and 2812-038-002, located in Santa Clarita, California (herein referred to as the "facility" or the "site;" Figures 1 and 2). Ramboll's assessment was conducted in connection with a potential purchase of the site, which is to be redeveloped as a residential neighborhood (Figure 3). It is noted that APNs 2812-008-900, 2812-038-002, and 2812-008-002 are not part of the pending purchase, but portions may be part of the redevelopment project. The objective of the Phase I ESA, which was conducted in conformance with the scope and limitations of ASTM International's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E1527-13 (the "ASTM Standard"), was to identify Recognized Environmental Conditions (RECs), as defined in the ASTM Standard (see Section 2.1).

1.1 Site Summary

As indicated above, all eight listed APNs were reviewed for the Phase I ESA. Parcel ownership is as follows:

- Moshe Gedalia and Susan Gedalia own APNs 2812-008-003, 2812-008-013, 2812-008-022, and 2812-008-31 (undeveloped land).
- Ruth Z. Vasquez owns APN 2812-008-021 (undeveloped land).
- Plum Canyon Master LLC owns APN 2812-038-002 (undeveloped land) (this parcel is not part of the pending purchase but portions may be part of the redevelopment project).
- The County of Los Angeles owns APN 2812-008-900, which is occupied by the Joseph Scott Juvenile Detention Center (this parcel is not part of the pending purchase but portions may be part of the redevelopment project).
- Linda L Flake and Charles Suraco, et al. own APN 2812-008-002, with the address 28402 Bouquet Canyon Road (a private residence) (this parcel is not part of the pending purchase but portions may be part of the redevelopment project).

The approximately 124-acre site (including all the parcels) is undeveloped land except for a private residence located along the western portion of the site (APN 2812-008-002), and a juvenile detention center (APN 2812-008-900) located in the eastern portion of the site.

A portion of the site (APN 2812-008-022) was used for cultivated cropland purposes from the early 1920s through the 1980s and a portion of the site (APN 2812-008-022) was used for oil field operations in the late 1960s. The approximately 1,321-square foot residence was constructed in 1954 and the juvenile detention center was constructed in 1965.

1.2 Recognized Environmental Conditions

Ramboll performed a Phase I ESA of eight parcels comprising APNs 2812-008-002, 2812-008-003, 2812-008-013, 2812-008-021, 2812-008-022, 2812-008-031, 2812-008-900, and 2812-038-002 in Santa Clarita California in conformance with the scope and limitations of the ASTM Standard. Any exceptions to, or deletions from, this practice are described in Section 6.2 of this report. This assessment has revealed no RECs in connection with the site.

1.3 Other Findings

Although not considered to be RECs, Ramboll identified the following other findings. The term "other finding" is not defined by ASTM; rather, Ramboll uses the term to connote areas of contingent risk that are not clearly defined by the ASTM Standard.

- **Abandoned Oil/Gas Well.** According to the State of California Department of Oil Gas and Geothermal Resources (DOGGR) website, in July 1967, one oil/gas well was drilled in the central portion of the site (APN 2812-008-022; see Figure 2). According to DOGGR records, the well was drilled to approximately 3,500 feet below ground surface (bgs). The well showed poor production of oil and gas and was abandoned in July 1967. Based on documents reviewed on the DOGGR website, various mechanical complications occurred during well installation. It is possible that drilling fluids, drilling muds, drilling cuttings, and/or well-treatment chemicals utilized during the well drilling process may have impacted the subsurface of the site in proximity to the well. As such, Ramboll cannot rule out the possibility that impacts to the subsurface may have resulted from installation and/or abandonment of the well. However, it is noted that Ramboll saw no indication of well field or drilling activities in the aerial photographs reviewed, nor was any information provided in the DOGGR records reviewed pertaining to the potential for subsurface impacts to the site associated with well installation or abandonment activities.
- **Historical Use of the Site for Cultivated Cropland.** According to aerial photographs reviewed as part of this Phase I ESA, **a** portion of the site (APN 2812-008-022) previously was used for cultivated cropland purposes from at least 1928 until the 1980s. During this time period, a few scattered residences and associated outbuildings were present on the site. The residences and outbuildings may have used aboveground or underground fuel oil tanks for heating purposes and for farm vehicle fueling. Ramboll was not provided with any specific information regarding historical cultivated cropland chemical use, but pesticides or other agricultural chemicals may have been applied on the site. It is possible that residual concentrations of agricultural chemicals may be present in the subsurface of the site in the area previously used for cultivated cropland. Site personnel reported no knowledge of past subsurface testing for any pesticides. Based on the lack of known subsurface investigation at the site, the potential presence of these compounds in the site subsurface in the area previously used for cultivated cropland cannot be ruled out. Based on the redevelopment plan for this area, shallow soil sampling is warranted.

A discussion of *de minimis* conditions identified during this review is presented in Section 6.1 of this report.

1.4 Non-scope Considerations

Although not included in the original scope of work based on our understanding that the site was vacant undeveloped land, Ramboll identified the following findings that relate to non-scope considerations (as discussed in Section 2.2), as detailed below:

- **Asbestos-Containing Materials (ACMs).** The residence at the site (APN 2812-008-002), was constructed in 1954 and the juvenile detention center (APN 2812-008-900) was constructed in 1965, before asbestos was generally phased out of use in many building material applications during the early 1980s. It is unknown if formal asbestos

surveys have been conducted at either structure. Based on the construction dates of the residence and detention center, it is possible that ACMs are present in building materials at the site. It is noted, however, that neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project.

- **Water Intrusion/Mold.** Ramboll was not allowed access to and did not perform mold surveys of either the residence or the detention center. Neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project.
- **Lead-Based Paint.** Lead was a major ingredient in paint pigment prior to and through the 1940s. While other pigments were used in the 1950s, the use of lead in paint continued until the early 1970s. In 1978, the Consumer Products Safety Commission banned paint and other surfacing coating materials that are "lead-containing paint." Based on the construction dates of the residence in 1954 and juvenile detention center in 1965, it is possible that lead-based paint was used historically on the buildings. Neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project
- **Radon.** Based on information included in the environmental database report, the site is located in an area categorized as Zone 2, which has average indoor basement radon levels between 2 and 4 picoCuries per liter (pCi/L). The United States Environmental Protection Agency's (USEPA's) continuous exposure limit, which is the limit at which further testing or remedial action is suggested, is 4.0 pCi/L for residential properties. According to the California Radon database, none of the 49 properties surveyed in Los Angeles County had a radon measurement above 0.0 pCi/L. A USEPA survey conducted in the same zip code as the site found that the average radon level of a first-floor room at 63 properties was 0.711 pCi/L.

2. INTRODUCTION

2.1 Purpose

Ramboll was retained by The Bouquet Canyon Project Owner, LLC to conduct a Phase I ESA of APNs 2812-008-002, 2812-008-003, 2812-008-013, 2812-008-021, 2812-008-022, 2812-008-031, 2812-008-900, and 2812-038-002 located in Santa Clarita, California. Ramboll's assessment was conducted in connection with a potential purchase of the site (with the exception of APNs 2812-008-002, 2812-038-002, and 2812-008-900, which are not part of the pending purchase but portions may be part of the redevelopment project). The purpose of the assessment was to identify RECs, which are defined in the ASTM Standard as:

> "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions."

2.2 Scope of the Assessment

Ramboll completed the following tasks, consistent with the ASTM Standard, during its Phase I ESA of the site:

- A visit to undeveloped portions of the site by Stephanie Eckelman of Ramboll on September 7, 2018 to observe the exterior features of the site and to identify the uses and conditions specified in the ASTM Standard. In addition, Ramboll observed the adjoining properties from the site or adjacent public thoroughfares. Photographs taken during the site visit are presented in Appendix A.
- An interview with the following individual: Roy Harel, Co-Founder of 3TEN Capital Group. The aforementioned individual was submitted to Ramboll by the client as having good knowledge of the uses and physical characteristics of the site.
- A review of information contained in federal and state environmental databases, as obtained from the sources noted below:
  - A radius report prepared by EDR, Inc. (EDR, see Appendix B), which presents the results of searches of federal and state databases for the site, as well as properties near the site. The radius searched for database, as well as the databases themselves, was selected in accordance with the ASTM Standard.
  - The USEPA's EnviroFacts database, which provides site information contained in multiple USEPA regulatory databases.
  - The State of California GeoTracker database (GeoTracker), and the Department of Toxic Substances Control (DTSC) EnviroStor websites.
- A review of standard historical sources (included as Appendix C) and local agency inquiries, as defined in the ASTM Standard. The following resources were reviewed:

  - Readily available historical sources, including (where available) historical topographic maps and aerial photographs, city directories, and Sanborn Maps, to develop a history of the previous uses of the site and surrounding area.
  - Historical and site-specific information obtained from the following local agencies: The Building Department, the Los Angeles County Office of the Assessor (Assessor), and the County of Los Angeles Fire Department (Fire Department). Ramboll also requested information from the Los Angeles County Fire Department-Health Hazardous Materials Division, but personnel from this agency reported having no information pertaining to the site.

- A review of physical setting sources, as defined in the ASTM Standard, including:
  - The current United States Geological Survey (USGS) 7.5-minute topographic map that shows the area on which the site is located.
  - Geologic, hydrogeologic, or hydrologic sources as provided in the environmental database report and a historical oil well field log.
- Facility personnel reported that, to their knowledge, no Phase I ESAs or Phase II site investigations, environmental compliance audits, or similar investigations have previously been conducted for the site.
- A review of records on the DOGGR website, including the following oil/gas well installation log, which is included as Appendix D:
  - *Oil Well Log*, prepared by Paul Benz, dated July 12, 1967 (the "Oil Well report");
- A review of any information provided by the User of this assessment, including information consistent with Appendix X3 of the ASTM Standard. Pertinent information, if any, is discussed in the appropriate sections of this report.

This assessment was conducted in accordance with the methodology specified in ASTM Standard E1527-13, as agreed upon by Ramboll and The Bouquet Canyon Project Owner, LLC in September 2018. The standard ASTM scope was expanded to include a limited review of the potential presence of radon, based solely on information provided in the EDR report. In addition, although not included in the original scope of work based on our understanding that the site was vacant undeveloped land, this review included a screening review of the potential presence of asbestos and lead-based paint, based solely on the date of construction of the buildings at the site (the residence and juvenile detention center).

2.3 Significant Assumptions

In conducting this review, no significant assumptions were made, except for the following:

- Site-specific field measurements or other detailed hydrogeological information was not publicly available or reasonably ascertainable. In the absence of such data, Ramboll has assumed that the flow direction of shallow groundwater beneath the site and in the local vicinity generally mimics surface topography. Therefore, in evaluating potential on-site impacts from off-site sources, those off-site facilities not located adjacent to or within one-quarter mile upgradient of the site are not considered to represent a significant environmental concern to the site. This interpretation is based on the assumption that a hazardous material released to the subsurface generally does not migrate laterally within

the unsaturated soil for a significant distance, although a hazardous material can migrate in the groundwater in a generally downgradient direction. There are, however, limits to this interpretation.

- Ramboll was not provided access to the residence located at APN 2812-008-002, the hillside associated with APN 2812-038-002, or the Joseph Scott juvenile detention center at APN 2812-008-900, as these parcels are not part of the pending purchase. In addition, Ramboll was not provided contact information for and did not interview the owners of these parcels.
- During the site visit, approximately 10 acres on the southern and eastern portions of the site were observed to be heavily wooded and overgrown with vegetation that limited visual and physical accessibility. Inspections of this portion of the site were limited to visual observations from perimeter areas.

2.4 Reliance and General Limitations

This report has been prepared for the exclusive use of The Bouquet Canyon Project Owner, LLC and may not be relied upon by any other person or entity without Ramboll's prior express written permission.

Under the ASTM Standard, this report is considered current only for a period of 180 days from the date of the site inspection. The conclusions presented in this report represent Ramboll's professional judgment based upon the information available and conditions existing as of the date of this report. In performing its assignment, Ramboll must rely upon publicly available information, information provided by the client, and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to Ramboll was accurate and complete. This review is not intended as legal advice, nor is it an exhaustive review of site conditions or facility compliance. Ramboll makes no representations or warranties, expressed or implied, about the conditions of the site.

Ramboll's scope of work for this assignment did not include collecting samples of any environmental media. As such, this review cannot rule out the existence of latent conditions including contamination not identified and defined by the data and information available for Ramboll's review; however, this report is intended, consistent with normal standards of practice and care, to assist the client in identifying the risks of such latent conditions.

Other issues considered outside the scope of the ASTM Standard and this review include regulatory compliance, polychlorinated biphenyls (PCBs) in building materials, lead in drinking water, wetlands, cultural and historic resources (except for information encountered during the course of this review for the potential Indian burial ground), ecological resources, endangered species, and high voltage power lines.

3. SITE DESCRIPTION

3.1 Site Setting

The site consists of eight parcels, owned by various individuals or entities. According to the Assessor's Office, the APNs that comprise the site include; 2812-008-002, 2812-008-003, 2812-008-013, 2812-008-021, 2812-008-022, 2812-008-031, 2812-008-900, and 2812-038-002, located in Santa Clarita, California. APN 2812-008-900 is owned by the County of Los Angeles and is occupied by a juvenile detention center. APN 2812-038-002 is a large vacant green space currently owned by Plum Canyon Master LLC. APN 2812-008-002 is occupied by a single-family residence built in 1954 and is owned by Linda L Flake and Charels J Suraco et al. The remaining parcels are owned by Moshe Gedalia and Susie Gedalia. The approximately 124-acre site is located approximately 38 miles northwest of the City of Los Angeles (Figure 1).

The site is accessed from Bouquet Canyon Road which curves around the site perimeter from the western to the northern site boundary. There is no access road to the majority of the site as most of the site is currently undeveloped land. One gravel road leads to a residence located along the western portion of the site. A second paved road provides access to the juvenile detention center along the eastern portion of the site. Bouquet Canyon Creek runs east to west through the northern portion of the site. The western, southern, and eastern portions of the site are hilly terrain. Housing developments are located south to southeast of the site and north of the site across Bouquet Canyon Road. A small retail center is located southwest of the site. There are no on-site surface water bodies other than the creek mentioned previously.

Table 1 provides an overview of physical setting and utility information for the site.

Table 1: Physical Setting and Utility Information

Conditions	Source	Description
Topography		
Elevation (above mean sea level)	USGS topographic map; Google Earth	Ranges from approximately 1,560 feet on a hill top along the southwestern portion of the site to 1,380 feet near the creek in the northwestern portion of the site.
Topographic Gradient	USGS topographic map; visual observations	The site is relatively flat near the central portion. The southern, southeastern, and western portions of the site are undulating terrain with relatively steep hills. The northern portion of the site appears relatively flat with a seasonal creek running east to west. Regional topography slopes gently downward to the west toward the Santa Clara River, which flows ultimately into the Pacific Ocean through the Santa Barbara Channel.

Table 1: Physical Setting and Utility Information

Conditions	Source	Description
Hydrology		
Surface Water Runoff	Visual observations	Percolates into the ground surface or enters the creek located along the northern portion of the site.
Nearest Surface Water Body to the Site	USGS topographic map; Visual observations	Bouquet Canyon Creek, located in the northern portion of the site. The Creek discharges to the Santa Clara River which ultimately discharges to the Pacific Ocean.
Flood Plain	FEMA*; Facility personnel	Facility personnel reported no known occurrences of flooding at the site. The site is located within a 500-year flood zone but outside of a 100-year flood zone.
Wetlands	NWI*	There are no federally-designated wetlands on-site.
Geology and Hydrogeology		
Presumed Direction of Shallow Groundwater Flow	USGS topographic map; [Mint Canyon 2012]	Based on the topographic gradient and the westerly flow direction of the Santa Clara River, shallow groundwater likely flows to the west.
Depth to Groundwater	Los Angeles DPW website	Specific information regarding depth to shallow groundwater was not readily available. According to the Los Angeles County Department of Public Works website, well 7113, last measured in October 2015, recorded a depth to water at 60.50 bgs. The well appears approximately one-half mile northeast of the site.
On-site Wells	Facility personnel; Visual observations; DOGGR website.	There are no production, monitoring, or injection water wells on-site. One oil/gas exploratory well was drilled in the central portion of the site, APN # 2812-008-022, in July 1967. The well was drilled to 3,457 feet bgs. The well was abandoned in July 1967 after producing a poor showing of oil and gas. See Section 5.2 for more information.
Nearest Groundwater Supply Wells	Database report	No federally registered wells are present within one mile of the site. Three private or municipal wells that may be used for water supply are located between one-quarter mile and one-half mile east, northeast, and southwest of the site.

Table 1: Physical Setting and Utility Information

Conditions	Source	Description
Geologic Conditions	DOGGR Well Field Logs	According to the 1967 onsite oil well installation logs, the first 50 feet of soil beneath the site consists mainly of buff clay with streaks of sandy conglomerate. From 60 to 140 feet bgs, the sticky buff clay with streaks of blue gray clay includes fine to very coarse sandstone. Deeper soils include increasing siltstone and sandstone.
Site Utility Information		
Heating and Cooling Equipment	Facility personnel	Heating and cooling equipment at the residence (APN 2812-008-002) and juvenile detention center (APN 2812-008-900) was unknown by facility personnel. Ramboll was not provided access to these buildings.
Electricity Supplier	City website	There are no buildings onsite other than the residence and the juvenile detention center buildings. Ramboll was not provided access to these buildings. Electricity is likely provided to the site by Southern California Edison.
Natural Gas Supplier	City website	There are no buildings onsite other than the residence and the juvenile detention center buildings. Ramboll was not provided access to these buildings. Natural Gas is likely provided to the site by The Gas Company.
Use of Fuel Oil for Building Heat	Facility personnel	No current use of fuel oil was reported.
Water Supplier	City of Santa Clarita website.	The residence and juvenile detention center water supplier was unknown by site personnel. Ramboll was not provided access to these buildings. The Santa Clarita Water Agency likely provides water to the site. The Santa Clarita Water Agency obtains water from the California aqueduct, Castaic lake, and local aquifers.
Sanitary Sewer	City website	No current sewer system was reported connected to the undeveloped portions of the site. Sewer service provided to the residence and juvenile detention center was unknown by site personnel and Ramboll was not provided access to these buildings; therefore, it is not known if the residence is connected to the City of Santa Clarita sewer system or if a septic system is in use. Similarly, it is not known if the detention center is connected to the City of Santa Clarita sewer system or if a septic system(s) is in use.

Table 1: Physical Setting and Utility Information

Conditions	Source	Description
Septic Systems	Facility personnel	No current septic systems were reported or known by site personnel and Ramboll was not provided access to these buildings. Therefore, it is not known if the residence or the detention center is/are connected to the City of Santa Clarita sewer system or if a septic system(s) is in use. However, given the rural location of the site, it is possible that historic septic systems may have been present at the site.

Notes:

Due to site access constraints, the site visit did not include a visit to the residence or the juvenile detention center.

FEMA = Federal Emergency Management Agency; NCSS = National Cooperative Soil Survey; NWI = National Wetlands Inventory

* - Source was provided in the environmental database report.

3.2 Current Use of Site

3.2.1 Current Operations

The majority of the site is currently vacant undeveloped land.

A residence is located onsite along the western portion of the site. The residence (APN 2812-008-002) appears constructed onsite in 1954. The juvenile detention center (APN 2812-008-900) was constructed onsite in 1965. Operations at the juvenile detention center appear to have remained essentially the same since 1965. The juvenile detention center typically houses approximately 100 female inmates. These parcels are not part of the pending purchase but portions of the parcels may be part of the redevelopment project. According to site personnel, onsite activity previously included cultivated cropland activities (APN 2812-008-022) and the drilling and subsequent abandonment of one oil/gas well in 1967 ((APN 2812-008-022).

According to facility personnel, no chlorinated solvents are currently used at the site and based on the nature of current site operations (undeveloped land, a residence, and a juvenile detention center), the use of chlorinated solvents would not be expected.

3.2.2 Waste Management

Hazardous wastes are not generated at the undeveloped portions of the site. Nonhazardous waste generated at the undeveloped portions of the site consists of dumped trash (at the time of the site visit, trash observed included four rusted 55-gallon metal drums observed near the single-family residence [APN 2812-008-002], a one-quart unlabeled black liquid container, a dishwasher, washing machine, dryer, and various articles of clothing).

Wastes (hazardous or nonhazardous) generated at the residence and the juvenile detention center are not known. However, the site is not listed on any databases indicative of hazardous waste generation. General trash containers were observed along Bouquet Canyon Road presumably associated with the residence.

3.2.3 Wastewater and Stormwater

No wastewater is generated at the undeveloped portions of the site.

Stormwater at the site infiltrates into the soil throughout the site or enters into the creek located along the northern portion of the site.

Sanitary wastewater discharge at the residence is unknown. Documents from the Department of Public Works indicated the juvenile detention center was connected to the sewer system in 1995; sanitary wastewater discharge prior to that time is unknown.

3.2.4 Air Emissions

There are no air pollution control devices at the undeveloped portions of the site.

It is unlikely that air pollution control devices are present at the residence; it is not known if air pollution control devices are present at the juvenile detention center.

3.3 Current Uses of Adjoining Properties

The site is located in a largely residential land use area. The nearest residential areas are located across Bouquet Canyon Road to the north and west of the site. A second juvenile detention center, Camp Kenyon Scudder, is located east of the site. Based on discussions with facility personnel, Ramboll's visual observations from the site boundary and public rights-of-way, and a limited review of publicly available information, a general evaluation of the current use of adjacent properties was developed, as described Table 2.

Table 2: Current Use of Adjacent Properties

Direction	Property/Land Use	Ramboll's Observations
North	Bouquet Canyon Road, beyond which are residences.	No apparent exterior manufacturing or chemical storage operations were observed. Residential areas consist of single family homes. No environmental concerns were noted.
East	The County of Los Angeles Kenyon Scudder Juvenile Detention Center.	
South	Undeveloped hills. A residential area is located further south and southeast.	
West	Bouquet Canyon Road curves to the west of the site. Residences are beyond.	

Notes:

During the site visit, Ramboll walked or drove by the borders of these properties that are adjacent to the site. Ramboll did not enter the neighboring properties.

4. REVIEW OF PUBLIC RECORDS AND OTHER INFORMATION SOURCES

4.1 Environmental Regulatory Database Review

Ramboll contracted with EDR in September 2018 to prepare of summary of listings in federal and state agency databases for the site and facilities within applicable radii of the site, as specified by the ASTM standard.[1] A copy of the environmental database search report is presented in Appendix B.

4.1.1 Database Review for Site

Ramboll reviewed the results of the state and federal environmental database searches performed by the third-party database provider (see Appendix B) and also searched the California GeoTracker database. The site was not listed on any of the databases for which the ASTM Standard specifies that a review of pertinent files or regulatory records be conducted. The site (as "LA Co Prob Camp Scott" [the juvenile detention center) is, however, listed on the following other databases related to regulatory compliance: Los Angeles County Hazardous Materials System (HMS) and the California Hazardous Material Incident Report System (CHMIRS). The CHMIRS listing is reported as completed on May 7, 1991. No other information is provided in the database report for either listing. Listings on these databases, by themselves, are not necessarily indicative of contamination. In addition, the juvenile detention center parcel is not part of the pending purchase.

4.1.2 Database Review for Surrounding Properties

There are several listings in the database report for off-site facilities within applicable ASTM search radii. These listings (i.e., Los Angeles County Hazardous Materials System (HMS), Statewide Environmental Evaluation and Planning System (SWEEPS UST), Facility Information Detail (FINDS), Enforcement and Compliance History Online (ECHO), underground storage tank (UST), School Sites (SCH), and Resourced Compliance and Recovery Act (RCRA) NonGenerator hazardous waste generators, and Historical Auto Stations), by themselves, are not necessarily indicative of a contamination concern and, therefore, are not discussed herein and were not further evaluated for purposes of this assessment. It is noted that the NonGenerator and Historical Auto Station listings are associated with a residence.

4.2 Historical Uses of the Site and Adjacent Properties

4.2.1 Past Uses of the Site

The central portion of the site appears as cultivated cropland from at least 1928 through 1981. One residence is present along the western portion of the site from 1954 to present day. The juvenile detention center appears along the eastern portion of the site from 1969 to present day. The remainder of the site appears as undeveloped land other than the residence. City Directories list the Suraco family at the residence since 1969.

A May 28, 1991 letter from the Native American Heritage Commission to the Building Department indicated that a portion of the site (APN 2812-008-002) potentially was used as

[1] EDR uses the term "radii" to refer to the ASTM terminology "approximate minimum search distance" in the environmental database report.

an Indian burial ground. According to the letter, the location was listed as "*approximately 500 feet from Bouquet Canyon Road. Location across from Benz Road and Fan Street and Fan Court.*" The onsite residence is associated with APN 2812-008-002, previously listed on the City Directories at 28402 Bouquet Canyon Road (this parcel is not part of the pending purchase but portions of the parcel may be part of the redevelopment project).

A summary of Ramboll's key observations from the available historical sources is presented in Table 3.

Table 3: Summary of Key Observations from Historical Sources for the Site

Historical Source	Key Observations Regarding Site History
Aerial Photographs (1928 to 2016) Satellite Imagery[1] (1994 to 2017)	Portions of the site appear as cultivated cropland from 1928 through 1981. A residence appears along the western portion of the site, and the juvenile detention center appears along the eastern portion of the site from at least 1969 through 2017. The 1989 and subsequent photographs show the site in its present configuration, with one residence located along the western portion of the site. No environmental concerns are noted.
Topographic Maps (1900 to 2012)	No development is depicted on the maps until 1940 when four small structures are noted along the western portion of the site off Bouquet Canyon Road, three small structures appear at the end of a small road in the center portion of the site and six small structures appear along the eastern portion of the site at the end of a small road. The small structures appear to potentially be associated with farming activities. By 1960, only three structures remain, two along Bouquet Canyon Road and one at the center of the site at the end of the small road. One of these structures appears in the general vicinity of the current day residence. Both structures remain depicted through 1995. Neither of the structures appear in the 2012 map. Six additional larger building appear along the eastern portion of the site in the present-day location of the juvenile detention center. The buildings are labeled as Joe Scott Boys Camp. An additional building appears within the Joe Scott Boys Camp in 1995.
City Directory Abstracts (1969-2014)	The occupants of the site are listed as: Charles Suraco at 28402 Bouquet Canyon and Probation Department at 2700 Bouquet Canyon (1969, 1971, 1974, 1980, 1985, 1992, 2000, and 2005). In 2010, the occupant at 28402 Bouquet Canyon is listed as unknown. The Probation Department is relisted as a portion of the Los Angeles Unified School district. Charles Suraco reappears listed at 28402 Bouquet Canyon in the 2014 directory.

Table 3: Summary of Key Observations from Historical Sources for the Site

Historical Source	Key Observations Regarding Site History
County of Los Angeles Office of the Assessor website	Tax assessor records available online indicate that the majority of the site is vacant land. The site is located in Section 6, Township 4 North, and range 15 West. The site consists all of the APN parcels listed below. A financial transaction was listed for the 2812-008-021 parcel in April 2008. Three of the parcels, 2812-008-003, -013, and -022 listed a financial transaction in February 2010. The parcel 2812-008-031 reported a financial transaction in September 2011 and the parcel at 2812-038-002 listed a financial transaction in August 2013. The single-family residence at 2812-008-002 listed a financial transaction in December 2014. The County government parcel, 2812-008-900, last reported a financial transaction in 1965.
City of Santa Clarita Building Department	Building Department files include records for the residence to demolish a shed onsite and to install a water heater. In addition, records indicated a possible Native American burial ground located adjacent to the residence. See Section 4.2.1 for more information.
Los Angeles County Public Works-Waste Management Division	The Department of Public Works files include reports pertaining to the juvenile detention facility. Reports indicate violations in the early 1960s with regards to water softener system effluent entering a leach field. The violations were resolved once the detention center diverted the effluent to a concrete holding tank which was pumped out periodically. Septic tanks were used for sanitary wastewater. Two private water wells at depths of approximately 150 feet bgs were reported onsite and reportedly sampled for chloride by the Health Department every 2 months from 1959 through 2002. No other information was contained in the records pertaining to the wells, such as depth to groundwater. A September 1995 letter from the DWP to the juvenile detention center provided instructions to properly close the holding tank that held the former water softener system liquid and to apply for an industrial wastewater discharge permit for the wastewater discharges that were not hauled away and instead would enter the sewer system. The permit was issued in October 2002. No other records were provided for the site.

[1] In addition to aerial photographs provided by the third-party provider, Ramboll viewed historical satellite imagery provided via Google Earth. Printed copies were not obtained, and imagery dates were not independently verified.

The third-party provider reported that Sanborn fire insurance map coverage is not available for the site.

4.2.2 Past Uses of Adjacent Properties

The properties in the vicinity of the site have been used as residences or undeveloped land, since as early as the 1920s. A second juvenile detention center, Camp Kenyon Scudder, appears east of the site since 1958. No environmental concerns were noted.

4.3 Review of Local and State Agency Information

Ramboll visited or otherwise contacted local governmental agencies and regulatory bodies for information relating to the site. An overview of the findings of this review is presented in Table 4.

Table 4: Local Agency Information for the Site

Agency Contacted/ Document Reviewed	Information Obtained
Title Search Report & the City of Santa Clarita website	According to a title insurance document provided by Client, APNs 2812-008-003, 2812-008-013, 2812-008-022, and 2818-008-031 are owned by Moshe Gedalia and Susie Gedalia. The following owner information was obtained from the City of Santa Clarita Building Department: 2812-008-021 is owned by Ruth Vazquez Z, 2812-008-002 is owned by Linda L Flake and Charles J Suraco et al, 2812-008-900 is owned by the County of Los Angeles, and 2812-038-002 is owned by Plum Canyon Master LLC.
Lien and Activity and Use Limitation (AUL) Search Report	As it is a User requirement, and at the Client's direction, Ramboll did not conduct a review of records to identify whether any environmental liens or activity and use limitations (AULs) have been imposed on the site.
Los Angeles County-Public Health Inspector	The Public Health Inspector reported no information for the site. All public information requests for Hazardous Materials Business Plans, Inventory, Hazardous Waste Generator License, California Accidental Release Prevention Program information as well as spills and site remediation information are to be requested from the Los Angeles County Fire Department-Health Hazardous Materials Division.
Los Angeles County Fire Department-Health Hazardous Materials Division	The Los Angeles County Fire Department Health Hazards Division indicated it had no records for the site.

Table 4: Local Agency Information for the Site

Agency Contacted/ Document Reviewed	Information Obtained
Los Angeles County Public Works (DPW)-Waste Management Division	The Department of Public Works files include reports pertaining to the juvenile detention facility. Reports indicate violations in the early 1960s with regards to water softener system effluent entering a leach field. The violations were resolved once the detention center diverted the effluent to a concrete holding tank which was pumped out periodically. Records indicated the juvenile detention center used a water softener from 1958 through 1995. A regeneration system discharged brine to a concrete pit located on the site which then bypassed the septic tank and entered a leach field. The juvenile detention center received a violation for improperly discharging the brine water to a leach field instead of according to permit requirements of a septic tank. In 1959, the juvenile detention center reported using a 1,000-gallon concrete holding tank for the backwash brine water. In 1969, records indicate the backwash water was removed from site and disposed of in an injection well offsite. By February 1972, a grease interceptor was located outside the kitchen to filter effluent discharges to the leach field. Septic tanks were used for sanitary wastewater. Two private water wells at depths of approximately 150 feet bgs were reported onsite and reportedly sampled for chloride by the Health Department every 2 months from 1959 through 2002. A September 1995 letter from the DWP to the juvenile detention center provided instructions to properly close the holding tank that held the former water softener system liquid and to apply for an industrial wastewater discharge permit for the wastewater discharges that were not hauled away and instead would enter the sewer system. The permit was issued in October 2002. No other records were provided for the site.
State of California Department of Oil Gas and Geothermal Resources (DOGGR)	According to the State of California DOGGR website, in July 1967, one oil/gas well was drilled in the central portion of the site (APN 2812-008-022; see Figure 2). According to DOGGR records, the well was drilled to approximately 3,500 feet bgs. The well showed poor production of oil and gas and was abandoned in July 1967. The closure of the well was inspected and approved by the DOGGR in 1967. Based on documents reviewed on the DOGGR website, various mechanical complications occurred during well installation.

4.4 Previous Environmental Assessments and Activities

Based on a review of historical site documents and interviews with facility personnel, no prior Phase I environmental assessments, UST closures, environmental sampling, or remediation activities are known to have been conducted at the site.

4.5 User-Provided Information

Ramboll provided The Bouquet Canyon Project Owner, LLC with a User Questionnaire (consistent with Appendix X3 of the ASTM Standard) that requested information relating to environmental liens, activity use limitations (AULs), specialized knowledge of the site, property value diminution, chain-of-title, or any other commonly known or obvious indications of site contamination, that was not otherwise provided to Ramboll. The User did not provide any information not otherwise obtained by Ramboll.

5. SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

Ramboll conducted a visit to the site on September 12, 2018. During the site visit, observations of the exterior portions of the site were made to evaluate if any RECs, as defined in Section 2, are present.

5.2 General Site Setting and Observations

Ramboll made observations concerning the exterior issues specified in Sections 9.4.2 through 9.4.4 of the ASTM E1527-13 Standard. The presence or absence of each issue of environmental interest or concern is noted in Table 5. Additional information regarding observed and historical items is provided in the sections following the table.

Table 5: Summary of Site Reconnaissance Observations

ASTM Section	Issue	Observation
Interior and Exterior Issues		
9.4.2.1	Current use(s) of the property	See Section 3.2
9.4.2.2	Past use(s) of the property	See Section 4.2
9.4.2.3	Hazardous substances and petroleum products used, treated, stored, disposed of, or generated on the property in connection with identified present or past uses	**Present** (see Section 5.2.1)
9.4.2.4	Storage tanks: Underground storage tanks (fill ports, vent pipes, manholes) Aboveground storage tanks	Absent*
9.4.2.5	Odors (strong, pungent, or noxious)	Absent*
9.4.2.6	Pools of liquid, standing surface water or sumps	Absent*
9.4.2.7	Drums of hazardous substances or petroleum products (five-gallon, 55-gallon, or totes)	Absent*
9.4.2.8	Hazardous substance and petroleum product containers (not necessarily in connection with identified uses)	Absent*
9.4.2.9	Unidentified substance containers suspected of containing hazardous substances or petroleum products	**Present** (see Section 5.2.1)

Table 5: Summary of Site Reconnaissance Observations

ASTM Section	Issue	Observation
9.4.2.10	Polychlorinated biphenyls (PCBs) Electrical equipment on-site (e.g., transformers, capacitors) Electrical equipment known or likely to contain PCBs Hydraulic equipment on-site (e.g., elevators, truck dock lifts) Hydraulic equipment known or likely to contain PCBs	**Potentially Present** (see Section 5.2.2)
Interior Issues		
9.4.3.1	Heating/cooling systems	Absent*
9.4.3.2	Stains or corrosion on interior floors, walls, or ceilings (except for staining from water)	Absent*
9.4.3.3	Floor drains and interior sumps	Absent*
Exterior Issues		
9.4.4.1	Pits, ponds or lagoons on property or adjacent sites	Absent*
9.4.4.2	Stained soil or pavement	**Present** (see Section 5.2.1)
9.4.4.3	Stressed vegetation (from other than insufficient water)	Absent*
9.4.4.4	On-site solid waste disposal; areas apparently filled or graded by non-natural causes; or mounds or depressions suggesting solid waste disposal	**Present** (see Section 5.2.3)
9.4.4.5	Wastewater or other liquid (including stormwater) or any discharge into a drain, ditch, underground injection system or stream on or adjacent to the property	**Present** (see Section 3.2.3)
9.4.4.6	Wells (including dry wells, irrigation wells, injection wells, abandoned wells, or other wells)	**Present** (see Section 5.2.4)
9.4.4.7	Septic systems or cesspools	Absent*
Non-Scope Considerations		
N/A	Asbestos Containing Materials	(see Section 5.2.5)
N/A	Lead-Based Paint	(see Section 5.2.6)
N/A	Water Intrusion	(see Section 5.2.7)

Table 5: Summary of Site Reconnaissance Observations

ASTM Section	Issue	Observation
N/A	Radon	(see Section 5.2.8)

Notes:

*Site visit observations did not include the residence or juvenile detention center due to access restrictions.

Observations noted in this table and discussed further below are based on information obtained during the site visit and from a review of the sources summarized in Section 4.

See the ASTM Standard for a detailed description of the issues included in each referenced ASTM section.

N/A – Not applicable

5.2.1 Hazardous Substances and Petroleum Products

Chemical use at the site historically potentially included petroleum products, lubricants, and hydraulic fluids associated with the oil/gas well installed on the site in 1967.

During the site visit, one quart-sized container of a black oily liquid was noted disposed of in the northern portion of the site. Minor soil staining was noted around the abandoned container. Facility personnel were not aware of any significant spills or releases of materials onsite.

5.2.2 Polychlorinated Biphenyls

Site personnel were not aware of historical on-site equipment that is known to contain PCBs. However, activities associated with the installation of oil/gas wells frequently utilized drilling lubricants including hydraulic oils which may contain PCBs. Ramboll saw no visual indication of significant leaks or releases onsite during the site visit. Because oil/gas well drilling activities were conducted in the 1960s, before the 1979 federal ban on the manufacture of PCBs, it is possible that the former drilling oils contained PCBs.

5.2.3 Solid Waste Disposal Areas or Areas Filled by Non-Natural Causes

Solid waste, including a dishwasher, a dryer, and a washing machine were observed during the site visit disposed of along the northern portion of the site. Various other solid waste clothing articles were observed around the site. Four rusted 55-gallon metal drums were observed along the southern edge of the residence parcel. Two of the drums appeared empty. The other two drums appeared intact. No labels were observed on the drums. No visible significant staining was observed in the vicinity of the drums.

Site personnel were unaware of the disposal of solid waste onsite.

5.2.4 Wells

According to the DOGGR website, one abandoned oil/gas well is located in the central portion of the site (APN 2812-008-022) and was installed, operated, and abandoned by Paul Benz. According to the DOGGR database, the well is classified as a plugged and abandoned dry hole, and the closure of the well was inspected and approved by the DOGGR in 1967.

Historically, drilling fluids, drilling muds, well cuttings, and/or well-treatment chemicals potentially were used/generated in association with installation/abandonment of an oil/gas well.

In addition, according to DPW records, two private water wells were installed on the juvenile detention center portion of the site at depths of approximately 150 feet bgs; the wells reportedly were sampled for chloride by the Health Department every 2 months from 1959 through 2002. The disposition of these wells is unknown. However, it is noted that this parcel is not part of the pending purchase but portions of the parcel may be part of the redevelopment project

5.2.5 Asbestos Containing Materials

The residence at the site (APN 2812-008-002), was constructed in 1954 and the juvenile detention center (APN 2812-008-900) was constructed in 1965, before asbestos was generally phased out of use in many building material applications during the early 1980s. It is unknown if formal asbestos surveys have been conducted at either structure. Based on the construction dates of the residence and detention center, it is possible that ACMs are present in building materials at the site. Neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project

5.2.6 Lead-Based Paint

Lead was a major ingredient in paint pigment prior to and through the 1940s. While other pigments were used in the 1950s, the use of lead in paint continued until the early 1970s. In 1978, the Consumer Products Safety Commission banned paint and other surfacing coating materials that are "lead-containing paint." Based on the construction dates of the residence in 1954 and juvenile detention center in 1965, it is possible that lead-based paint was used historically on the buildings. Neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project

5.2.7 Water Intrusion

Ramboll did not perform a mold survey at the site; and due to access restrictions, was unable to view the site or speak with the residence or the juvenile detention center.

5.2.8 Radon

Based on information included in the environmental database report, the site is located in an area categorized as Zone 2, which has average indoor basement radon levels between 2 and 4 pCi/L. The USEPA's continuous exposure limit, which is the limit at which further testing or remedial action is suggested, is 4.0 pCi/L for residential properties. According to the California Radon database, none of the 49 properties surveyed in Los Angeles County had a radon measurement above 0.0 pCi/L. A USEPA survey conducted in the same zip code as the site found that the average radon level of a first-floor room at 63 properties was 0.711 pCi/L.

6. FINDINGS, OPINION, AND CONCLUSIONS

Ramboll performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of The Bouquet Canyon Project Owner, LLC site located at APNs 2812-008-002, 2812-008-003, 2812-008-013, 2812-008-021, 2812-008-022, 2812-008-031, 2812-008-900, and 2812-038-002 Santa Clarita, California in September 2018. The objective of the ESA was to identify RECs, as defined in the ASTM Standard. A list of key definitions presented in the ASTM Standard is provided in Section 8 at the end of this report. Any exceptions to, or deletions from, this practice are described in Section 6.2.

6.1 Findings, Opinions, and Conclusions

Ramboll performed a Phase I ESA of eight parcels identified by APNs 2812-008-002, 2812-008-003, 2812-008-013, 2812-008-021, 2812-008-022, 2812-008-031, 2812-008-900, and 2812-038-002 in Santa Clarita California in conformance with the scope and limitations of the ASTM Standard. Any exceptions to, or deletions from, this practice are described in Section 6.2 of this report. This assessment has revealed no RECs in connection with the site.

6.2 Other Findings

Although not considered to be RECs, Ramboll identified the following other findings. The term "other finding" is not defined by ASTM; rather, Ramboll uses the term to connote areas of contingent risk that are not clearly defined by the ASTM Standard.

- **Abandoned Oil/Gas Onsite Well.** According to the State of California DOGGR website, in July 1967, one oil/gas well was drilled in the central portion of the site (APN 2812-008-022; see Figure 2). According to DOGGR records, the well was drilled to approximately 3,500 feet bgs. The well showed poor production of oil and gas and was abandoned in July 1967. Based on documents reviewed on the DOGGR website, various mechanical complications occurred during well installation. It is possible that drilling fluids, drilling muds, drilling cuttings, and/or well-treatment chemicals utilized during the well drilling process may have impacted the subsurface of the site in proximity to the well. As such, Ramboll cannot rule out the possibility that impacts to the subsurface may have resulted from installation and/or abandonment of the well. However, it is noted that Ramboll saw no indication of well field or drilling activities in the aerial photographs reviewed, nor was any information provided in the DOGGR records reviewed pertaining to the potential for subsurface impacts to the site associated with well installation or abandonment activities.
- **Historical Use of the Site for Cultivated Cropland Use.** According to aerial photographs reviewed for this Phase I ESA, the site, specifically, APN# 2812-008-022, was previously used for cultivated cropland purposes from at least 1928 until the 1980s. During this time period, a few scattered residences and associated outbuildings were present on the site. The residences and outbuildings may have used aboveground or underground fuel oil tanks for heating purposes and for farm vehicle fueling. Ramboll was not provided with any specific information regarding historical cultivated cropland chemical use, but pesticides or other agricultural chemicals may have been applied on the site. It is possible that residual concentrations of agricultural chemicals may be present in the subsurface of the site in the area previously used for cultivated cropland.

Site personnel reported no knowledge of past subsurface testing for any pesticides. Based on the lack of known subsurface investigation at the site, the potential presence of these compounds in the site subsurface in the area previously used for cultivated cropland cannot be ruled out. Based on the redevelopment plan for this area, shallow soil sampling is warranted.

6.2.1 De Minimis Conditions

De minimis conditions are those that do not represent a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies. Ramboll identified the following *de minimis* conditions related to the site:

- **Evidence of Dumping Activities.** During the site visit, dumping of household appliances, four rusted 55-gallon metal drums, black oily liquid in a one-quart container, and general trash was noted onsite. Additional information was unavailable regarding the frequency of dumping on the site. While Ramboll cannot rule out the possibility that contamination is present due to the dumping onsite, no specific concerns were identified (e.g. stained soil, large mounds of trash debris). As such, Ramboll considers this matter to represent a *de minimis* condition.

6.2.2 Non-scope Considerations

Ramboll identified the following findings that relate to non-scope considerations (as discussed in Section 2.2), as detailed below:

- **ACMs.** The residence at the site (APN 2812-008-002) was constructed in 1954 and the juvenile detention center (APN 2812-008-900) was constructed in 1965, before asbestos was generally phased out of use in many building material applications during the early 1980s. It is unknown if formal asbestos surveys have been conducted at either structure. Based on the construction dates of the residence and detention center, it is possible that ACMs are present in building materials at the site. It is noted, however, that neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project.
- **Water Intrusion/Mold.** Ramboll was not allowed access to and did not perform mold surveys of either the residence or the detention center. Neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project
- **Lead-Based Paint.** Lead was a major ingredient in paint pigment prior to and through the 1940s. While other pigments were used in the 1950s, the use of lead in paint continued until the early 1970s. In 1978, the Consumer Products Safety Commission banned paint and other surfacing coating materials that are "lead-containing paint." Based on the construction dates of the residence in 1954 and juvenile detention center in 1965, it is possible that lead-based paint was used historically on the buildings. Neither building is part of the pending purchase but portions of the parcels on which the buildings are located may be part of the redevelopment project.
- **Radon.** Based on information included in the environmental database report, the site is located in an area categorized as Zone 2, which has average indoor basement radon

levels between 2 and 4 pCi/L. The USEPA's continuous exposure limit, which is the limit at which further testing or remedial action is suggested, is 4.0 pCi/L for residential properties. According to the California Radon database, none of the 49 properties surveyed in Los Angeles County had a radon measurement above 0.0 pCi/L. A USEPA survey conducted in the same zip code as the site found that the average radon level of a first-floor room at 63 properties was 0.711 pCi/L.

6.3 Analysis of Data Gaps

The ASTM Standard defines a data gap as "a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information." A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

Limiting conditions and deviations to the ASTM Standard for the assessment are discussed below.

- Due to confidentiality considerations, interviews with prior site owners, occupants, tenants, and former site personnel were not conducted. However, Ramboll conducted interviews with representatives of 3TEN with knowledge of the site and reviewed other historical sources regarding former uses of the site.
- During the site visit, approximately 10 acres on the southern and eastern portions of the site were observed to be heavily wooded and overgrown with vegetation that limited visual and physical accessibility. Inspections of this portion of the site were limited to visual observations from perimeter areas.
- Ramboll was not provided access to the residence located at APN 2812-008-002, the hillside associated with APN 2812-038-002, or the Joseph Scott juvenile detention center at APN 2812-008-900, as these parcels are not part of the pending purchase. In addition, Ramboll was not provided contact information for and did not interview the owners of these parcels.
- As it is a User requirement, and as directed by the Client, Ramboll did not conduct a review of records to identify whether any environmental liens or AULs have been imposed on the site.

None of the exceptions, deletions, deviations, or site reconnaissance limitations noted above are considered to represent significant data gaps.

7. REFERENCES

7.1 Documents

Environmental Data Resources (EDR). 2018. "Certified Sanborn® Map Report." September 5.

EDR. 2018. "EDR Historical Topographic Map Report." September 5.

EDR. 2018. "The EDR Aerial Photo Decade Package." September 6.

EDR. 2018. "The EDR-City Directory Abstract." September 11.

EDR. 2018. "The EDR Radius Map™ Report with GeoCheck®" September 5.

DOGGR. 1967. Oil and Gas Well Report.

7.2 Interviews

Roy Harel, 3TEN Capital Group. 2018. Personal interview. September 27.

8. ASTM DEFINITIONS

The following definitions are presented in the ASTM Standard:

REC - Recognized Environmental Condition:

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment.

CREC - Controlled Recognized Environmental Condition:

A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

HREC - Historical Recognized Environmental Condition:

A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

De minimis Condition:

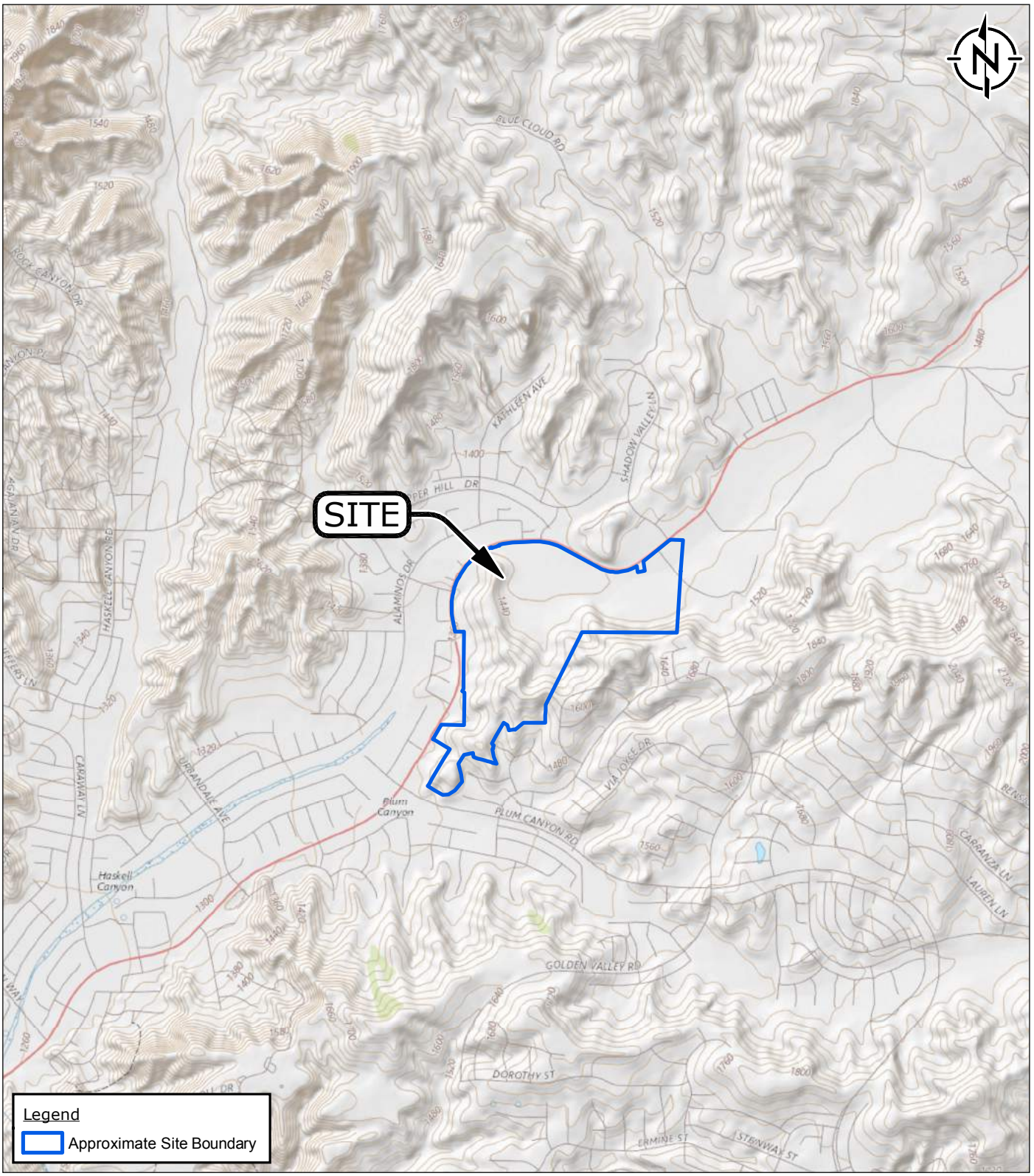
A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Data Gap/Significant Data Gap:

A lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information. A data gap is significant if other information and/or professional experience raises concerns involving the data gap.

Please note that the term "other finding" is not defined by ASTM; rather, Ramboll uses the term to connote areas of contingent risk that are not clearly defined by the ASTM Standard.

FIGURES



NOTES:
APN - Assessor's Parcel Number
Contour Interval 20 feet
*Included APNs: 2812-008-031, 2812-008-021, 2812-008-003, 2812-008-002, 2812-038-002, 2812-008-022, 2812-008-013, and 2812-008-900.

SOURCE:
The National Map, 2018.
Map Scale: 1:24,000 Spatial Reference: NAD 1983 UTM Zone 11N; Map Center: 118°29'34"W 34°27'28"N

0 0.5 1
Scale in Miles

0 2,000 4,000
Scale in Feet

KEY MAP

RAMBOLL

Site Location Map

Integral Communities

Multiple Assessor's Parcel Numbers (APNs)* on Bouquet Canyon Road

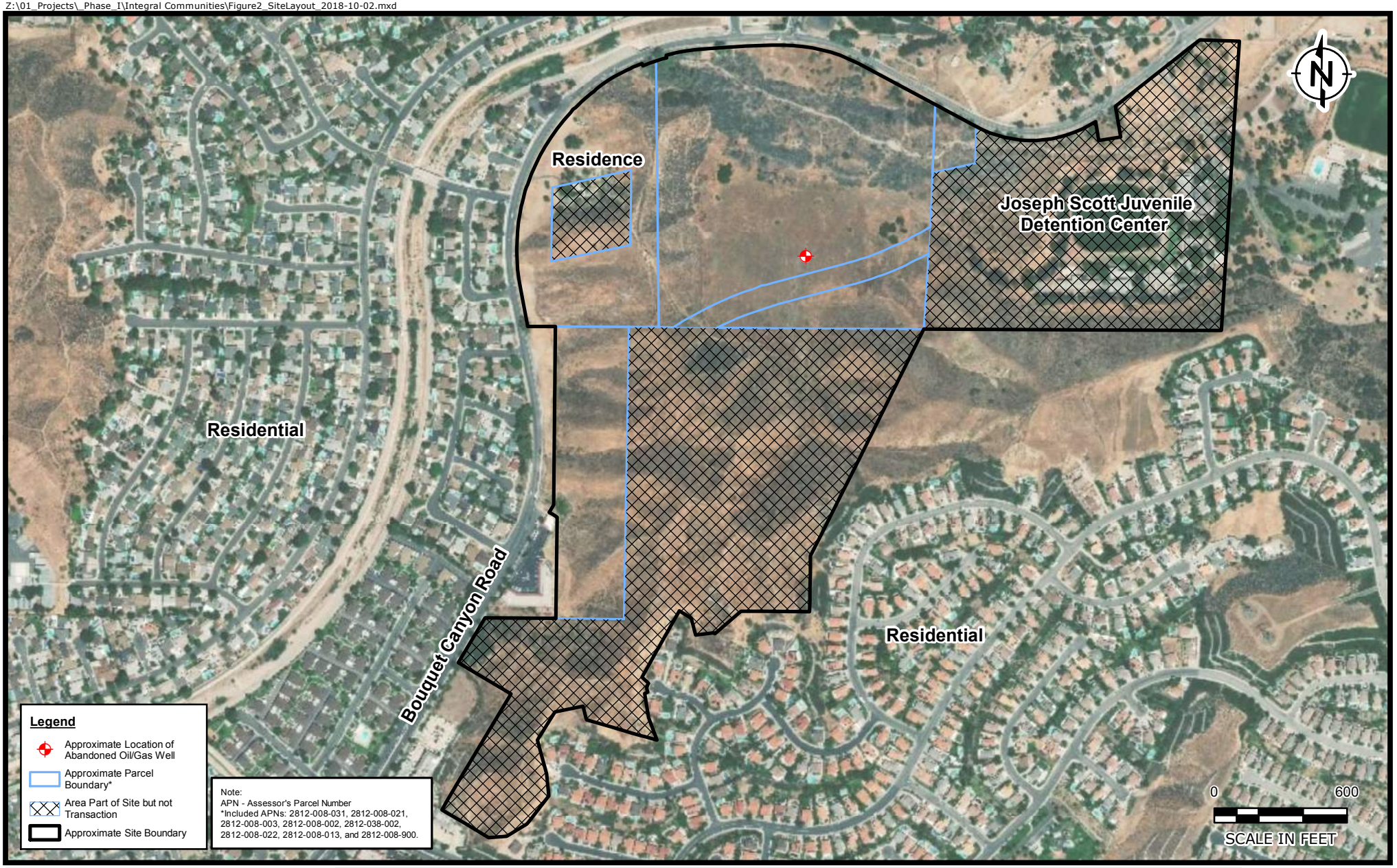
Santa Clarita, California

FIGURE 1

DRAFTED BY: J. KING | DATE: 10/3/2018 | PROJECT: 1690009953

Z:\01_Projects_Phase_I\Integral Communities\Figure1_LocationMap_2018-10-02.mxd

Z:\01_Projects_Phase_I\Integral Communities\Figure2_SiteLayout_2018-10-02.mxd



RAMBOLL

Site Layout

Integral Communities
Multiple Assessor's Parcel Numbers (APNs)* on Bouquet Canyon Road
Santa Clarita, California

FIGURE
2

DRAFTED BY: J. KING | DATE: 10/3/2018 | PROJECT: 1690009953

2812-008-013

2812-008-022

2812-008-002

Joseph Scott Juvenile
Detention Center

2812-008-003

2812-008-900

2812-008-021

Residential

2812-038-002

2812-008-031

Bouquet Canyon Road

Residential

0 400

SCALE IN FEET

Legend

- Approximate Site Boundary
- Proposed Development Plan Boundary
- Area Part of Site but not Transaction

Note:
1. APN - Assessor's Parcel Number
2. *Included APNs: 2812-008-031, 2812-008-021, 2812-008-003, 2812-008-002, 2812-038-002, 2812-008-022, 2812-008-013, and 2812-008-900 as shown in colors not mentioned in legend.

Reference: Site Plan from Integral Communities (May 1, 2018)

Site Layout and Development Plan

Integral Communities
Multiple Assessor's Parcel Numbers (APNs)* on
Bouquet Canyon Road
Santa Clarita, California

RAMBOLL

FIGURE
3

DRAFTED BY: C.Enslin | DATE: 1/10/2019 | PROJECT: 1690009953

Z:\01_Projects\Integral Partners Funding\Figure 3 - Site Layout with Development Plan 2019-01-10.mxd

APPENDIX A
SITE PHOTOGRAPHS

Photo 1: View of site looking southwest.

Photo 2: View of northern edge of the site and a pole mounted transformer.

Photo 3: View of one-quart size black liquid container with localized soil staining.

Photo 4: Photo of dumping, including a dryer.

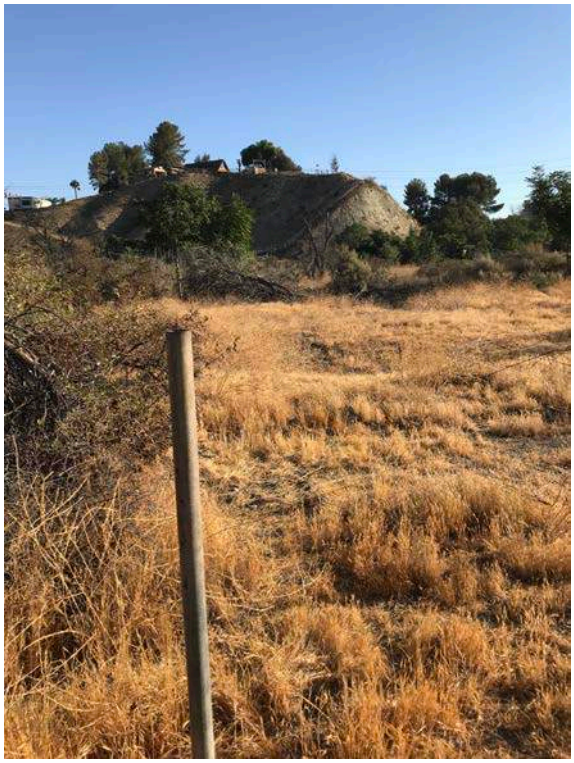


Photo 5: View of eastern portion of the site, likely the eastern edge of the juvenile detention center parcel.

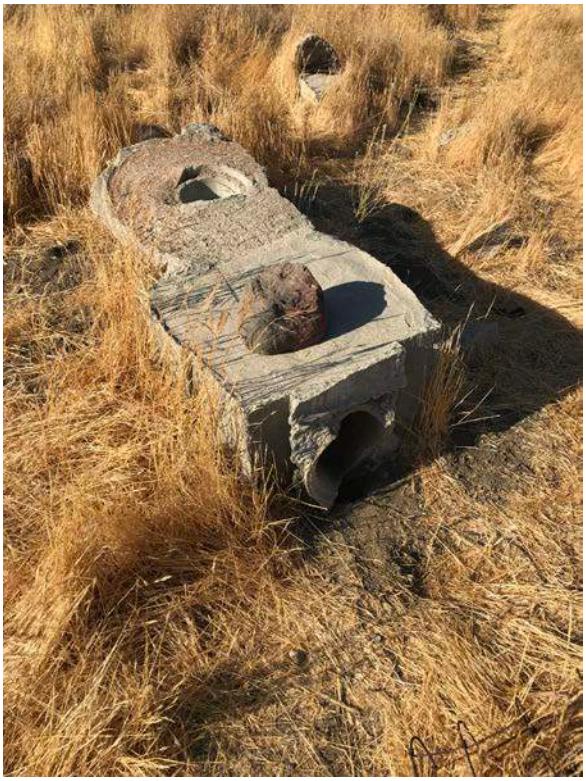


Photo 6: View of concrete and metal debris located west of the presumed oil/gas well location.

Photo 7: Additional likely well abandonment debris.

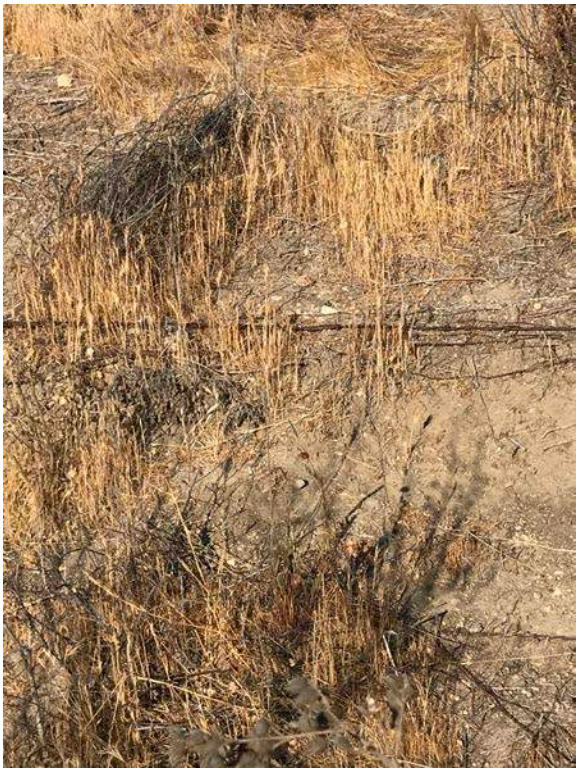


Photo 8: View of fence line and stone wall, possibly marking parcel demarcations.

Photo 9: View of the central portion of the site looking northeast towards the juvenile detention center.

Photo 10: View of north-western portion of the site including the likely well abandonment debris.

Photo 11: View of the onsite residence, looking west towards Bouquet Canyon Road.

Photo 12: View of utility pole located along hillside above the onsite residence, looking north.

Photo 13: View of southern portion of the site along the hilltop, looking east.

Photo 14: View of recently graded area of the western portion of the site along Bouquet Canyon Road looking north. Trash containers appear to be associated with the onsite residence.

Photo 15: View of rusty empty 55-gallon metal drums located along the southern edge of the residential parcel.

Photo 16: View of rusty empty 55-gallon drums looking south.

Photo 17: View of typical parcel stake located along the perimeter of the site and the northern portion of the residential parcel.

Photo 18: View of PVC piping found along the Bouquet Creek riverbed.

Photo 19: Additional PVC pipe entering into the Bouquet Creek riverbed.

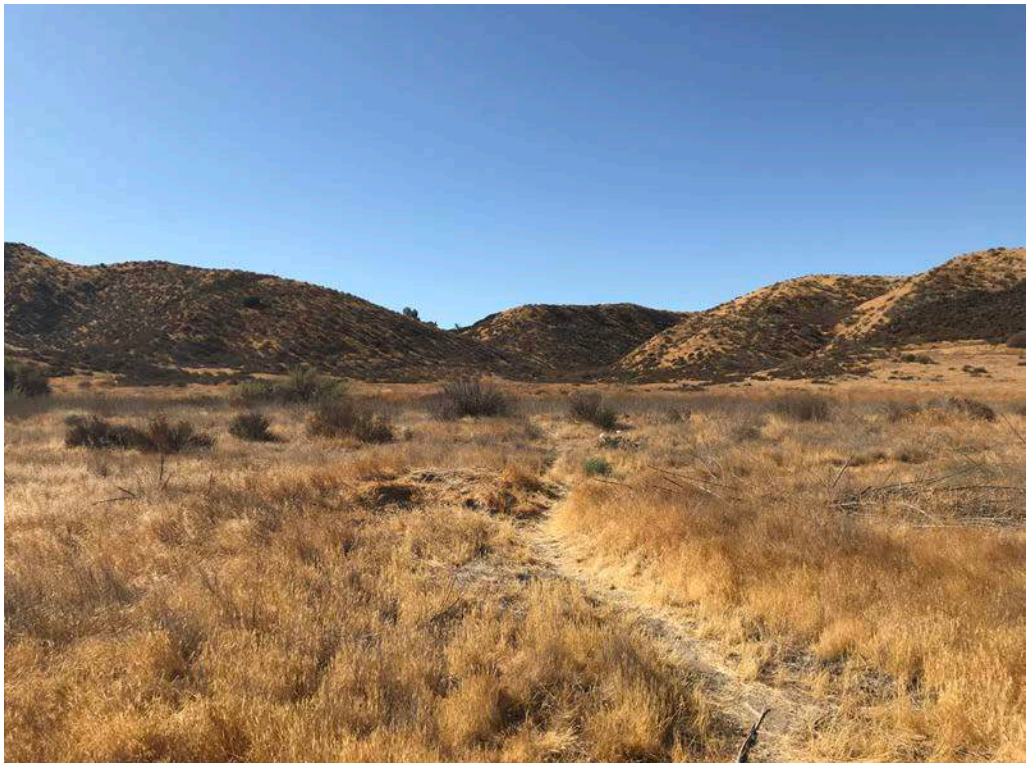


Photo 20: View of typical animal trails located around the site, looking southeast.

APPENDIX B
ENVIRONMENTAL DATABASE REPORT

NOTES ON ENVIRONMENTAL DATABASE REPORT

The third-party provider conducted its searches for the standard environmental record sources and the minimum search distances, as specified by the ASTM Standard. The ASTM Standard uses the terminology "approximate minimum search distance" to refer to the radii searched in the environmental database report.

The third-party provider conducted the search of environmental databases in September 2018. Because the environmental databases themselves are sometimes not updated by the specific regulatory agencies for periods of up to one year or more (depending on the database and the state), the database search conducted herein will not necessarily list any facility or site for which an environmental investigation/listing has been initiated subsequent to the last update.

Integral Communities-SCV
28402 Bouquet Canyon Road
Santa Clarita, CA 91350

Inquiry Number: 5414520.2s
September 05, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Detail Map	3
Map Findings Summary	4
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GEOCHECK ADDENDUM

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

28402 BOUQUET CANYON ROAD
SANTA CLARITA, CA 91350

COORDINATES

Latitude (North):	34.4573760 - 34° 27' 26.55''
Longitude (West):	118.4947910 - 118° 29' 41.24''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	362694.8
UTM Y (Meters):	3813688.5
Elevation:	1453 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5636825 MINT CANYON, CA
Version Date:	2012
West Map:	5636847 NEWHALL, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140531, 20140514
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
28402 BOUQUET CANYON ROAD
SANTA CLARITA, CA 91350

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	LA CO PROB CAMP SCOT	28700 BOUQUET CANYON	LOS ANGELES CO. HMS	Lower	1 ft.
2		27234 BONQUET CANYON	CHMIRS	Lower	1 ft.
A3	LA CO PROB CAMP SCOT	28700 BOUQUET CANYON	LOS ANGELES CO. HMS	Lower	1 ft.
4	MINNIE MAX CLEANERS	28200 BOUQUET CANYON	EDR Hist Cleaner	Lower	100, 0.019, South
5	FASCOV INC	28525 ROW CT	EDR Hist Auto	Lower	433, 0.082, NNE
B6	LA CO CAMP SCUDDER	28750 BOUQUET CANYON	UST	Higher	647, 0.123, East
B7	LA CO CAMP-SEE 00336	28750 BOUQUET CANYON	SWEEPS UST, CA FID UST, LOS ANGELES CO. HMS	Higher	647, 0.123, East
8	PLUM CLEANERS	28106 BOUQUET CANYON	EDR Hist Cleaner	Lower	658, 0.125, SSW
9	FAR WEST ENVIRONMENT	28609 KATHLEEN AVE	RCRA NonGen / NLR, FINDS, ECHO	Lower	1141, 0.216, North
C10	PACIFIC BELL SAGSCA1	20660 PLUM CANYON RD	UST	Lower	1315, 0.249, SSW
C11	PACIFIC BELL (1990 R	20660 PLUM CANYON RD	SWEEPS UST, CA FID UST	Lower	1315, 0.249, SSW
12	COPPER HILL ELEMENTA	WELSTON DRIVE/BOUQUE	ENVIROSTOR, SCH	Lower	2650, 0.502, SSW
13	MEADOWPEAK SCHOOL SI	HASKELL CANYON/BLUE	ENVIROSTOR, SCH	Higher	4513, 0.855, North

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

LUST ---------- Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ---------- Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing
VCP ---------- Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS ---------- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ---------- Waste Management Unit Database
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

AOCONCERN ---------- San Gabriel Valley Areas of Concern

US HIST CDL	Delisted National Clandestine Laboratory Register
HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
CDL	Clandestine Drug Labs
Toxic Pits	Toxic Pits Cleanup Act Sites
US CDL	National Clandestine Laboratory Register
CERS HAZ WASTE	CERS HAZ WASTE

Local Lists of Registered Storage Tanks

HIST UST	Hazardous Substance Storage Container Database
CERS TANKS	California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program

UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
DOCKET HWC	Hazardous Waste Compliance Docket Listing
ECHO	Enforcement & Compliance History Information
UXO	Unexploded Ordnance Sites
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
ICE	ICE
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
LA Co. Site Mitigation	Site Mitigation List
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
CERS	CERS
PROJECT	PROJECT (GEOTRACKER)
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
UIC GEO	UIC GEO (GEOTRACKER)
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)
CIWQS	California Integrated Water Quality System
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 04/30/2018 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MEADOWPEAK SCHOOL SI Facility Id: 70000143 Status: No Action Required	***HASKELL CANYON/BLUE***	***N 1/2 - 1 (0.855 mi.)***	***13***	***17***

Lower Elevation	Address	Direction / Distance	Map ID	Page
COPPER HILL ELEMENTA Facility Id: 19010034 Status: No Further Action	***WELSTON DRIVE/BOUQUE***	***SSW 1/2 - 1 (0.502 mi.)***	***12***	***15***

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within

approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LA CO CAMP SCUDDER	28750 BOUQUET CANYON	E 0 - 1/8 (0.123 mi.)	B6	10
Database: UST, Date of Government Version: 06/11/2018 Facility Id: 3478				

Lower Elevation	Address	Direction / Distance	Map ID	Page
PACIFIC BELL SAGSCA1	20660 PLUM CANYON RD	SSW 1/8 - 1/4 (0.249 mi.)	C10	14
Database: UST, Date of Government Version: 06/11/2018 Facility Id: LACoFA0021050 Facility Id: 15981				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 2 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LA CO CAMP-SEE 00336	***28750 BOUQUET CANYON***	***E 0 - 1/8 (0.123 mi.)***	***B7***	***11***
Status: A Tank Status: A Comp Number: 3478				

Lower Elevation	Address	Direction / Distance	Map ID	Page
PACIFIC BELL (1990 R	***20660 PLUM CANYON RD***	***SSW 1/8 - 1/4 (0.249 mi.)***	***C11***	***14***
Status: A Tank Status: A Comp Number: 15981				

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LA CO CAMP-SEE 00336	***28750 BOUQUET CANYON***	***E 0 - 1/8 (0.123 mi.)***	***B7***	***11***
Facility Id: 19015919 Status: A				

Lower Elevation	Address	Direction / Distance	Map ID	Page
PACIFIC BELL (1990 R	***20660 PLUM CANYON RD***	***SSW 1/8 - 1/4 (0.249 mi.)***	***C11***	***14***

Facility Id: 19055139
Status: A

Records of Emergency Release Reports

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 04/06/2018 has revealed that there is 1 CHMIRS site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported OES Incident Number: 100409 Date Completed: 07-MAY-91	27234 BONQUET CANYON	0 - 1/8 (0.000 mi.)	2	8

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FAR WEST ENVIRONMENT EPA ID:: CAD981423460	***28609 KATHLEEN AVE***	***N 1/8 - 1/4 (0.216 mi.)***	***9***	***12***

Los Angeles County Industrial Waste and Underground Storage Tank Sites.

A review of the LOS ANGELES CO. HMS list, as provided by EDR, and dated 04/12/2018 has revealed that there are 2 LOS ANGELES CO. HMS sites within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LA CO PROB CAMP SCOT Facility ID: 004324-043955 Facility ID: 004324-I04482	28700 BOUQUET CANYON	0 - 1/8 (0.000 mi.)	A1	8
LA CO PROB CAMP SCOT Facility ID: 004324-004482	28700 BOUQUET CANYON	0 - 1/8 (0.000 mi.)	A3	9

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FASCOV INC	28525 ROW CT	NNE 0 - 1/8 (0.082 mi.)	5	10

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

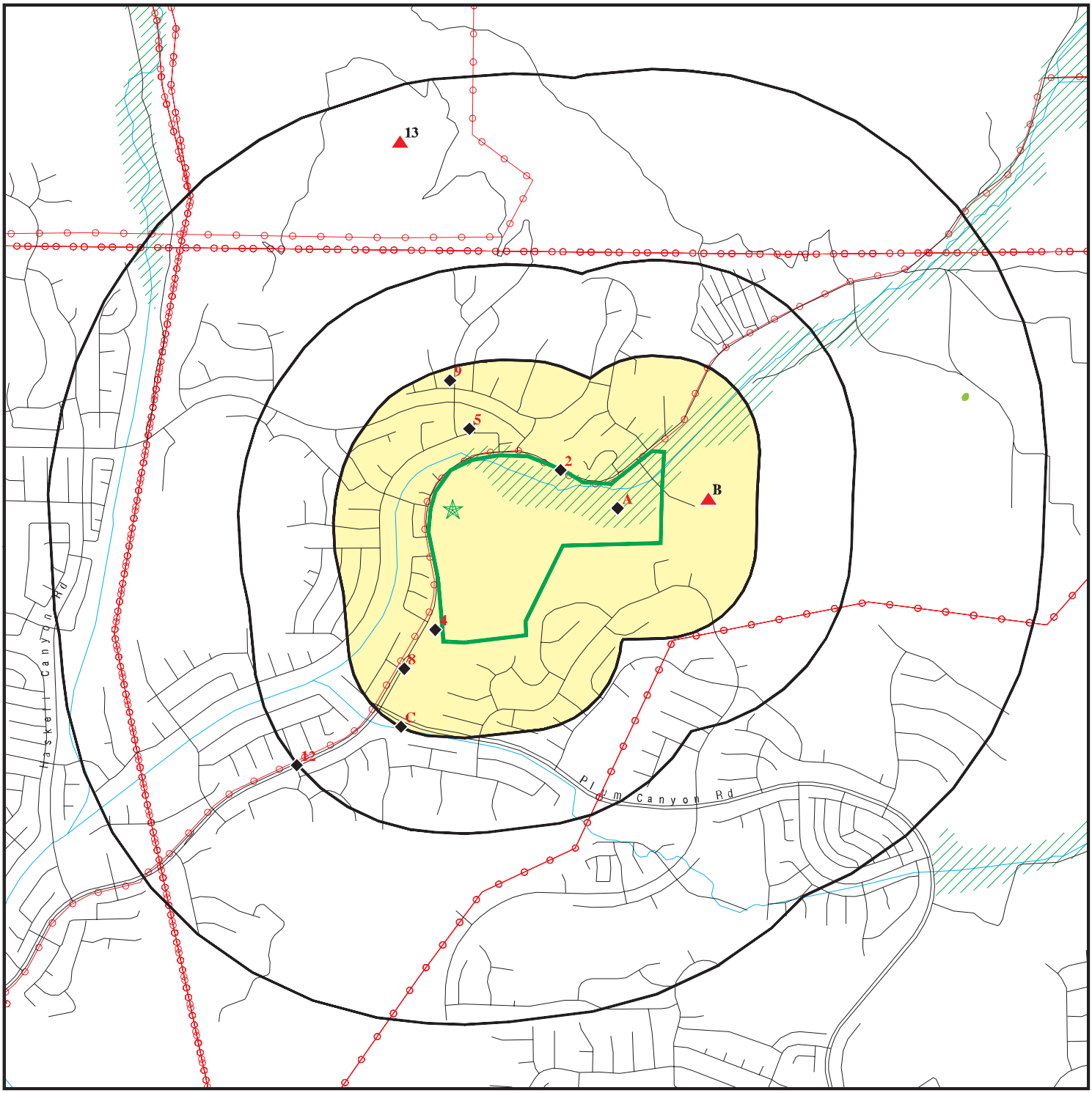
A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there are 2 EDR Hist Cleaner sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MINNIE MAX CLEANERS	28200 BOUQUET CANYON	S 0 - 1/8 (0.019 mi.)	4	10
PLUM CLEANERS	28106 BOUQUET CANYON	SSW 0 - 1/8 (0.125 mi.)	8	12

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 5414520.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Upgradient Area

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Integral Communities-SCV	CLIENT:	Ramboll
ADDRESS:	28402 Bouquet Canyon Road Santa Clarita CA 91350	CONTACT:	Stephanie Eckelman
LAT/LONG:	34.457376 / 118.494791	INQUIRY #:	5414520.2s
		DATE:	September 05, 2018 2:27 pm

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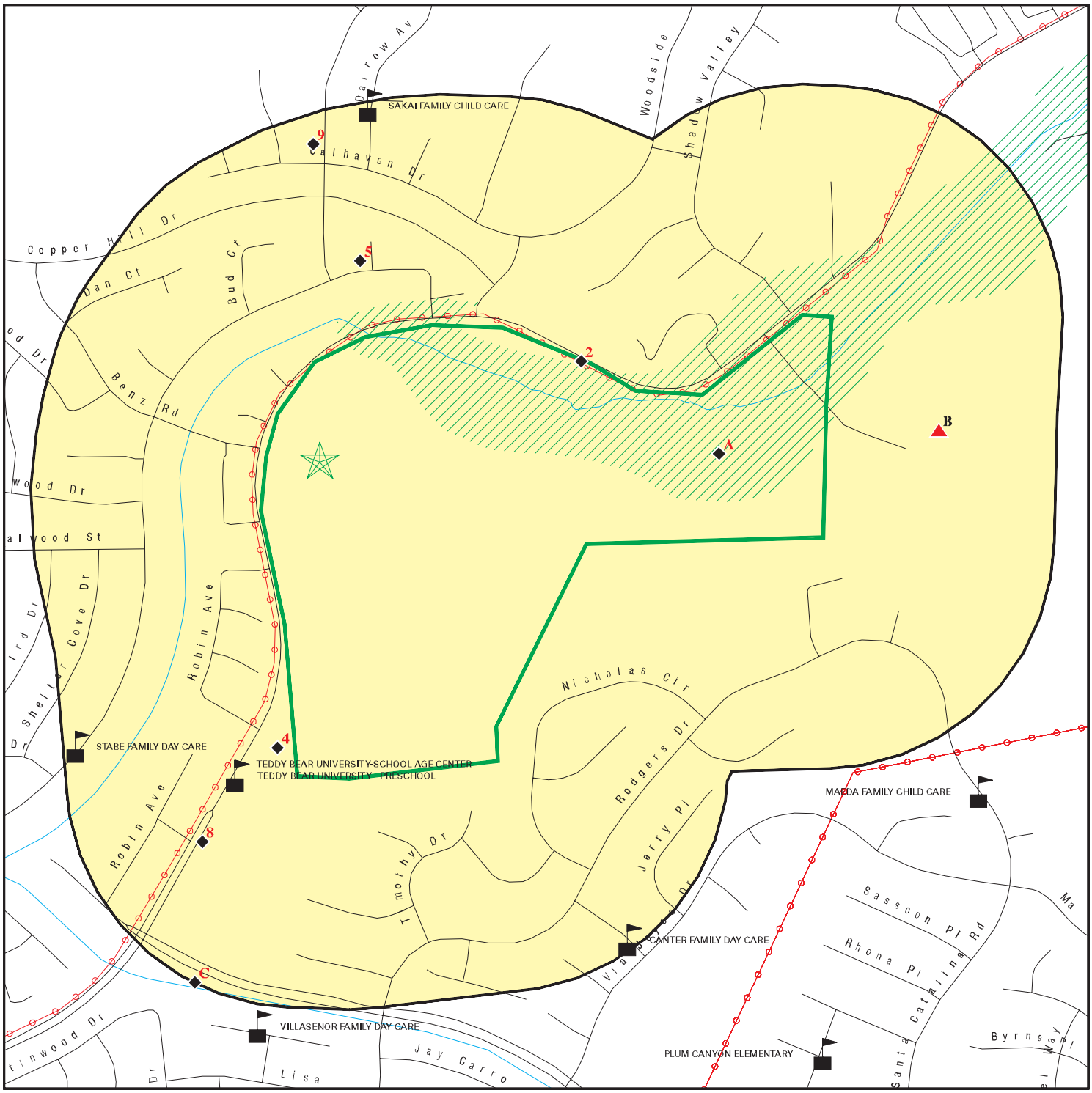
DETAIL MAP - 5414520.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

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LAT/LONG:	34.457376 / 118.494791	INQUIRY #:	5414520.2s
		DATE:	September 05, 2018 2:27 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	2	NR	2
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		1	1	NR	NR	NR	2
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
AOCONCERN	1.000		0	0	0	0	NR	0
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	1	NR	NR	NR	2
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		1	1	NR	NR	NR	2
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		1	NR	NR	NR	NR	1
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	TP		NR	NR	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
LOS ANGELES CO. HMS	0.001		2	NR	NR	NR	NR	2
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
LA Co. Site Mitigation	0.001		0	NR	NR	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
CERS	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.250		1	0	NR	NR	NR	1
EDR Hist Cleaner	0.250		2	0	NR	NR	NR	2
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	9	4	0	2	0	15

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **LA CO PROB CAMP SCOTT** **LOS ANGELES CO. HMS** **S104536203**
28700 BOUQUET CANYON RD **N/A**
< 1/8 **SAUGUS, CA 91350**
1 ft.

Site 1 of 2 in cluster A

Relative: LOS ANGELES CO. HMS:
Lower
Actual: Region: LA
1415 ft. Permit Category: Not reported
Facility Id: 004324-043955
Facility Type: Not reported
Facility Status: OPEN
Area: 7
Permit Number: Not reported
Permit Status: Not reported

Region: LA
Permit Category: I
Facility Id: 004324-I04482
Facility Type: 09
Facility Status: Closed
Area: 7
Permit Number: 000002026
Permit Status: Closed

Region: LA
Permit Category: I
Facility Id: 004324-I04482
Facility Type: 01
Facility Status: Closed
Area: 7
Permit Number: 000008542
Permit Status: Closed

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2 **CHMIRS** **S100280132**
27234 BONQUET CANYON ROAD **N/A**
< 1/8 **SAUGUS, CA 91350**
1 ft.

CHMIRS:
Relative: OES Incident Number: 100409
Lower OES notification: Not reported
Actual: OES Date: Not reported
1398 ft. OES Time: Not reported
Date Completed: **07-MAY-91**
Property Use: 300
Agency Id Number: 19110
Agency Incident Number: 128598
Time Notified: 1009
Time Completed: 1245
Surrounding Area: 650
Estimated Temperature: 80
Property Management: C
Special Studies 4: N
More Than Two Substances Involved?: N
Resp Agncy Personel # Of Decontaminated: 0
Responding Agency Personel # Of Injuries: 0
Responding Agency Personel # Of Fatalities: 0
Others Number Of Decontaminated: 0
Others Number Of Injuries: 0

(Continued) **S100280132**

Others Number Of Fatalities:	0
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	D. MCCLELLAN HAZ-MAT 87-B
Report Date:	07-MAY-91
Facility Telephone:	213 267-2401
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	07-MAY-91
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	01-JUL-92
Substance:	Not reported
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Y
Description:	Not reported

A3 **LA CO PROB CAMP SCOTT** **LOS ANGELES CO. HMS** **S102064563**
28700 BOUQUET CANYON RD **N/A**
< 1/8 **SAUGUS, CA 91350**
1 ft.

Site 2 of 2 in cluster A

Relative: LOS ANGELES CO. HMS:
Lower
Region: LA
Actual: Permit Category: Not reported
1415 ft. Facility Id: 004324-004482
Facility Type: Not reported

LA CO PROB CAMP SCOTT (Continued) **S102064563**

Facility Status: OPEN
Area: 7
Permit Number: Not reported
Permit Status: Not reported

4
South
< 1/8
0.019 mi.
100 ft.

MINNIE MAX CLEANERS **EDR Hist Cleaner** **1009127092**
28200 BOUQUET CANYON RD **N/A**
SANTA CLARITA, CA 91310

Relative:
Lower

Actual:
1384 ft.

EDR Hist Cleaner

Year:	Name:	Type:
1999	MINNIE MAX CLEANERS	Not reported
2003	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2004	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2005	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2006	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2007	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2008	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2009	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2010	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs
2011	MINNIE MAX CLEANERS	Drycleaning Plants, Except Rugs

5
NNE
< 1/8
0.082 mi.
433 ft.

FASCOV INC **EDR Hist Auto** **1020361366**
28525 ROW CT **N/A**
SANTA CLARITA, CA 91350

Relative:
Lower

Actual:
1384 ft.

EDR Hist Auto

Year:	Name:	Type:
2010	FASCOV INC	Gasoline Service Stations
2011	FASCOV INC	Gasoline Service Stations
2012	FASCOV INC	Gasoline Service Stations
2013	FASCOV INC	Gasoline Service Stations
2014	FASCOV INC	Gasoline Service Stations

B6
East
< 1/8
0.123 mi.
647 ft.

LA CO CAMP SCUDDER **UST** **U003775988**
28750 BOUQUET CANYON RD **N/A**
SANTA CLARITA, CA 91390

Site 1 of 2 in cluster B

Relative:
Higher

Actual:
1468 ft.

UST:

Facility ID:	3478
Permitting Agency:	LOS ANGELES COUNTY
Latitude:	34.4592647
Longitude:	-118.4839253

B7 **LA CO CAMP-SEE 003362-043956** **SWEEPS UST** **S101584822**
East **28750 BOUQUET CANYON RD** **CA FID UST** **N/A**
< 1/8 **SAUGUS, CA 91350** **LOS ANGELES CO. HMS**
0.123 mi.
647 ft. **Site 2 of 2 in cluster B**

Relative:
Higher

Actual:
1468 ft.

SWEEPS UST:

Status:	Active
Comp Number:	3478
Number:	9
Board Of Equalization:	44-007726
Referral Date:	06-30-89
Action Date:	Not reported
Created Date:	06-30-89
Owner Tank Id:	Not reported
SWRCB Tank Id:	19-000-003478-000001
Tank Status:	A
Capacity:	Not reported
Active Date:	06-30-89
Tank Use:	UNKNOWN
STG:	W
Content:	Not reported
Number Of Tanks:	1

CA FID UST:

Facility ID:	19015919
Regulated By:	UTNKA
Regulated ID:	00020856
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	8180000000
Mail To:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SANTA CLARITA
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

LOS ANGELES CO. HMS:

Region:	LA
Permit Category:	Not reported
Facility Id:	019948-028466
Facility Type:	Not reported
Facility Status:	OPEN
Area:	7
Permit Number:	Not reported
Permit Status:	Not reported

8
SSW
< 1/8
0.125 mi.
658 ft.

PLUM CLEANERS
28106 BOUQUET CANYON RD
SANTA CLARITA, CA 91350

EDR Hist Cleaner **1020064485**
N/A

Relative:
Lower

Actual:
1357 ft.

EDR Hist Cleaner

Year:	Name:	Type:
2007	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC
2008	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC
2009	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC
2010	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC
2011	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC
2012	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC
2013	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC
2014	PLUM CLEANERS	Drycleaning Plants, Except Rugs, NEC

9
North
1/8-1/4
0.216 mi.
1141 ft.

FAR WEST ENVIRONMENTAL SERVICES
28609 KATHLEEN AVE
SAUGUS, CA 91350

RCRA NonGen / NLR **1000136388**
FINDS **CAD981423460**
ECHO

Relative:
Lower

Actual:
1395 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/07/1986
Facility name:	FAR WEST ENVIRONMENTAL SERVICES
Facility address:	28609 KATHLEEN AVE SAUGUS, CA 91350
EPA ID:	CAD981423460
Mailing address:	KATHLEEN AVE SAUGUS, CA 91350
Contact:	ENVIRONMENTAL MANAGER
Contact address:	28609 KATHLEEN AVE SAUGUS, CA 91350
Contact country:	US
Contact telephone:	805-251-2480
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	THOMAS G EATON
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999

FAR WEST ENVIRONMENTAL SERVICES (Continued) **1000136388**

Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002700943

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000136388
Registry ID: 110002700943
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002700943

C10
SSW
1/8-1/4
0.249 mi.
1315 ft.

PACIFIC BELL SAGSCA11/KC575
20660 PLUM CANYON RD
SANTA CLARITA, CA 91350

Site 1 of 2 in cluster C

UST **U003777284**
N/A

Relative:
Lower

Actual:
1353 ft.

UST:

Facility ID:	15981
Permitting Agency:	LOS ANGELES COUNTY
Latitude:	34.4507227
Longitude:	-118.4965375

Facility ID:	LACoFA0021050
Permitting Agency:	Los Angeles County Fire Department
Latitude:	34.4492
Longitude:	-118.49714

C11
SSW
1/8-1/4
0.249 mi.
1315 ft.

PACIFIC BELL (1990 REMOTE SWITCHING CENTER)
20660 PLUM CANYON RD
SANTA CLARITA, CA 91350

Site 2 of 2 in cluster C

SWEEPS UST **S101587242**
CA FID UST **N/A**

Relative:
Lower

Actual:
1353 ft.

SWEEPS UST:

Status:	Active
Comp Number:	15981
Number:	1
Board Of Equalization:	Not reported
Referral Date:	02-26-93
Action Date:	02-26-93
Created Date:	12-14-90
Owner Tank Id:	1
SWRCB Tank Id:	19-000-015981-000001
Tank Status:	A
Capacity:	4000
Active Date:	12-14-90
Tank Use:	OIL
STG:	P
Content:	Not reported
Number Of Tanks:	1

CA FID UST:

Facility ID:	19055139
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	177 E COLORADO
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SANTA CLARITA 91350
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

12
SSW
1/2-1
0.502 mi.
2650 ft.

COPPER HILL ELEMENTARY SCHOOL
WELSTON DRIVE/BOUQUET CANYON
SAUGUS, CA 91350

ENVIROSTOR
SCH

S107736165
N/A

Relative:
Lower

Actual:
1325 ft.

ENVIROSTOR:

Facility ID:	19010034
Status:	No Further Action
Status Date:	12/12/2002
Site Code:	304388
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	20
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	36
Senate:	21
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	34.4546
Longitude:	-118.5043
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Mercury (elemental Zinc DDE
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	COPPERHILL ELEMENTARY SCHOOL
Alias Type:	Alternate Name
Alias Name:	SAUGUS UNION ELEMENTARY SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	SAUGUS UNION SD-COPPER HILL ELEM
Alias Type:	Alternate Name
Alias Name:	304388
Alias Type:	Project Code (Site Code)
Alias Name:	19010034
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	10/21/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	12/12/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1

COPPER HILL ELEMENTARY SCHOOL (Continued) **S107736165**

Completed Date:	09/26/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	12/12/2002
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

SCH:

Facility ID:	19010034
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	20
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	304388
Assembly:	36
Senate:	21
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	12/12/2002
Restricted Use:	NO
Funding:	School District
Latitude:	34.4546
Longitude:	-118.5043
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Mercury (elemental, Mercury (elemental, Zinc, DDE
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	COPPERHILL ELEMENTARY SCHOOL
Alias Type:	Alternate Name
Alias Name:	SAUGUS UNION ELEMENTARY SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	SAUGUS UNION SD-COPPER HILL ELEM
Alias Type:	Alternate Name
Alias Name:	304388
Alias Type:	Project Code (Site Code)
Alias Name:	19010034

COPPER HILL ELEMENTARY SCHOOL (Continued) **S107736165**

Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 10/21/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 12/12/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 09/26/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/12/2002
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

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13 **MEADOWPEAK SCHOOL SITE** **ENVIROSTOR** **S118757384**
North **HASKELL CANYON/BLUE CLOUD ROAD** **SCH** **N/A**
1/2-1 **SANTA CLARITA, CA 91390**
0.855 mi.
4513 ft.

Relative:
Higher

Actual:
1714 ft.

ENVIROSTOR:
Facility ID: 70000143
Status: No Action Required
Status Date: 01/27/2006
Site Code: 304519
Site Type: School Investigation
Site Type Detailed: School
Acres: 15.25
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Javier Hinojosa
Division Branch: Southern California Schools & Brownfields Outreach
Assembly: 36

MEADOWPEAK SCHOOL SITE (Continued) **S118757384**

Senate: 21
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 34.4714
Longitude: -118.4972
APN: NONE SPECIFIED
Past Use: NONE
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: 304519
Alias Type: Project Code (Site Code)
Alias Name: 70000143
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 01/05/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/19/2007
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/27/2006
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 70000143
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 15.25
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program

MEADOWPEAK SCHOOL SITE (Continued) **S118757384**

Project Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	304519
Assembly:	36
Senate:	21
Special Program Status:	Not reported
Status:	No Action Required
Status Date:	01/27/2006
Restricted Use:	NO
Funding:	School District
Latitude:	34.4714
Longitude:	-118.4972
APN:	NONE SPECIFIED
Past Use:	NONE
Potential COC:	NONE SPECIFIED, No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	304519
Alias Type:	Project Code (Site Code)
Alias Name:	70000143
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	01/05/2006
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	06/19/2007
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	01/27/2006
Comments:	Not reported

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/06/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/28/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/28/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/08/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/10/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 26
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/25/2018
Date Data Arrived at EDR: 06/27/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 40

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/21/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 54

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/29/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 48

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/30/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/28/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Quarterly

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 07/25/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/28/2018
Date Data Arrived at EDR: 05/25/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 46

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 04/19/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/25/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/05/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 41

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/10/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/20/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 07/09/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/07/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/04/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 04/05/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 85
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2018
Date Data Arrived at EDR: 04/16/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 74

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/09/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/20/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2018
Date Data Arrived at EDR: 05/31/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 87

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/21/2018
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 28

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 02/25/2018
Date Data Arrived at EDR: 03/17/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 30

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/22/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/25/2018
Date Data Arrived at EDR: 06/27/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 40

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 05/07/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 39

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA SAN FRANCISCO CO

Cupa facilities

Date of Government Version: 04/20/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: DRYCLEAN SOUTH COAST

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/16/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/22/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 06/25/2018
Date Data Arrived at EDR: 06/28/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 39

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 07/06/2018
Number of Days to Update: 73

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/20/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 60

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 38

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Annually

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/21/2018
Date Data Arrived at EDR: 05/23/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 55

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/21/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/21/2018
Date Data Arrived at EDR: 05/23/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/21/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/09/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 54

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/16/2018
Date Made Active in Reports: 07/05/2018
Number of Days to Update: 50
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/10/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/19/2018
Number of Days to Update: 43
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 54
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 06/18/2018
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 04/13/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 67
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/25/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

CIWQS: California Integrated Water Quality System
The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data
The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/25/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/11/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 65

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 27

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/02/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 14

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/25/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/21/2018
Date Data Arrived at EDR: 05/25/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 56

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/30/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 44

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/12/2018
Date Data Arrived at EDR: 07/12/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 39

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/30/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/11/2018
Date Data Arrived at EDR: 07/17/2018
Date Made Active in Reports: 08/30/2018
Number of Days to Update: 44

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/11/2018
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/22/2018
Number of Days to Update: 40

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/20/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 50

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/02/2018
Date Data Arrived at EDR: 05/07/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 72

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 07/20/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 06/12/2018
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 28
Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 08/08/2018
Date Data Arrived at EDR: 08/09/2018
Date Made Active in Reports: 08/22/2018
Number of Days to Update: 13
Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49
Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206
Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 04/16/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 60
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/16/2018
Date Data Arrived at EDR: 07/18/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 37

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/18/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 04/17/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 63

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/20/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/22/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/31/2018
Number of Days to Update: 68

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 03/30/2018
Date Data Arrived at EDR: 04/06/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 28

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/30/2018
Date Data Arrived at EDR: 06/01/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 42

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 05/22/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/13/2018
Date Data Arrived at EDR: 06/19/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 31

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 07/02/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/31/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 41

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 45

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 45

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 63

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/06/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/05/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 43
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 50
Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/09/2018
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 42
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/18/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/18/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/07/2018
Date Data Arrived at EDR: 07/03/2018
Date Made Active in Reports: 08/13/2018
Number of Days to Update: 41
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/03/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 07/03/2018
Date Made Active in Reports: 08/13/2018
Number of Days to Update: 41
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/03/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/22/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 52

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 04/09/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 69

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 41

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 06/07/2018
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 28
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/22/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 56
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/12/2018
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 52

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/12/2018
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 08/13/2018
Number of Days to Update: 59

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/23/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 55

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/22/2018
Date Made Active in Reports: 07/19/2018
Number of Days to Update: 58

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/17/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/08/2018
Date Made Active in Reports: 07/18/2018
Number of Days to Update: 40

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 07/12/2018
Number of Days to Update: 30

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 06/19/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 21

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/03/2018
Date Data Arrived at EDR: 07/10/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 45

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 8

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/08/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 33

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/26/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 47

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/22/2018
Date Made Active in Reports: 04/17/2018
Number of Days to Update: 26

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/24/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 58

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/02/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 29

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/23/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 04/26/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 28
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/20/2018
Date Data Arrived at EDR: 07/03/2018
Date Made Active in Reports: 07/12/2018
Number of Days to Update: 9
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 05/10/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 31
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 01/03/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/22/2018
Number of Days to Update: 36
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19
Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 08/01/2018
Date Made Active in Reports: 08/31/2018
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/12/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/21/2018
Next Scheduled EDR Contact: 12/03/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

INTEGRAL COMMUNITIES-SCV
28402 BOUQUET CANYON ROAD
SANTA CLARITA, CA 91350

TARGET PROPERTY COORDINATES

Latitude (North):	34.457376 - 34° 27' 26.55''
Longitude (West):	118.494791 - 118° 29' 41.25''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	362694.8
UTM Y (Meters):	3813688.5
Elevation:	1453 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5636825 MINT CANYON, CA
Version Date:	2012
West Map:	5636847 NEWHALL, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

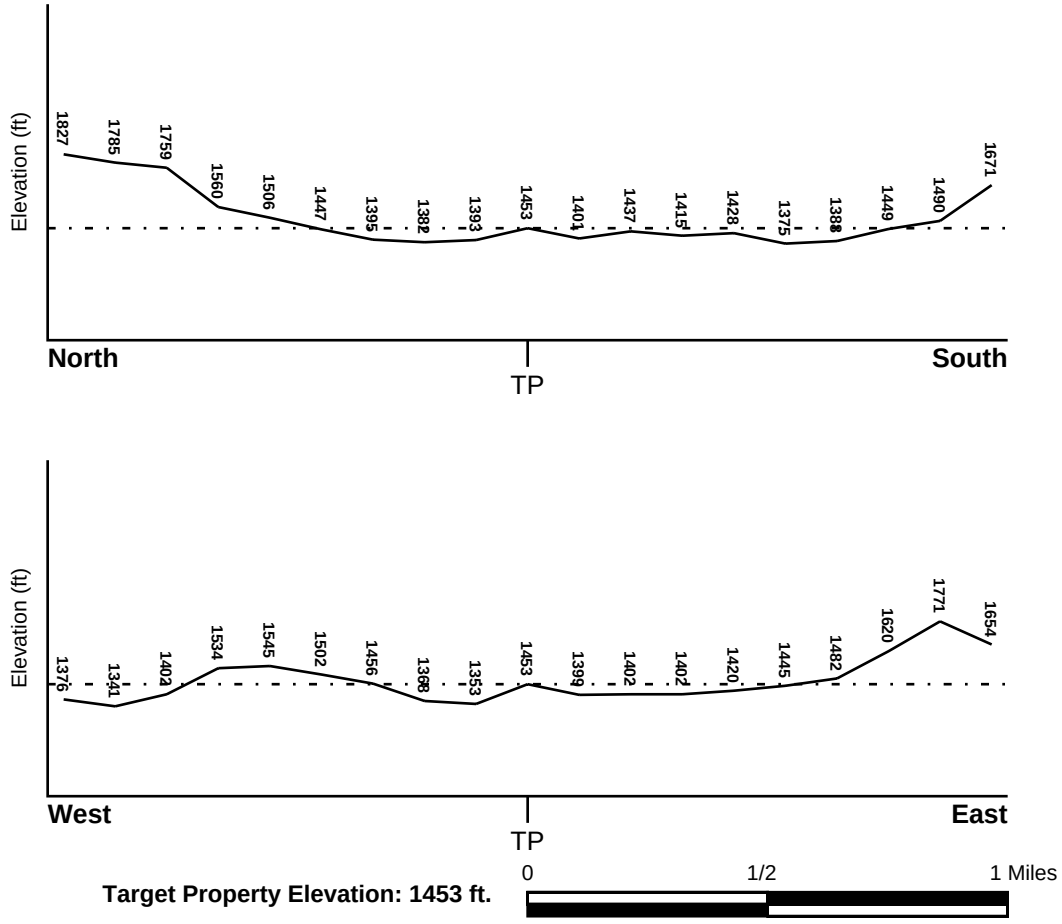
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 1453 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06037C0830F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06037C0810F	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

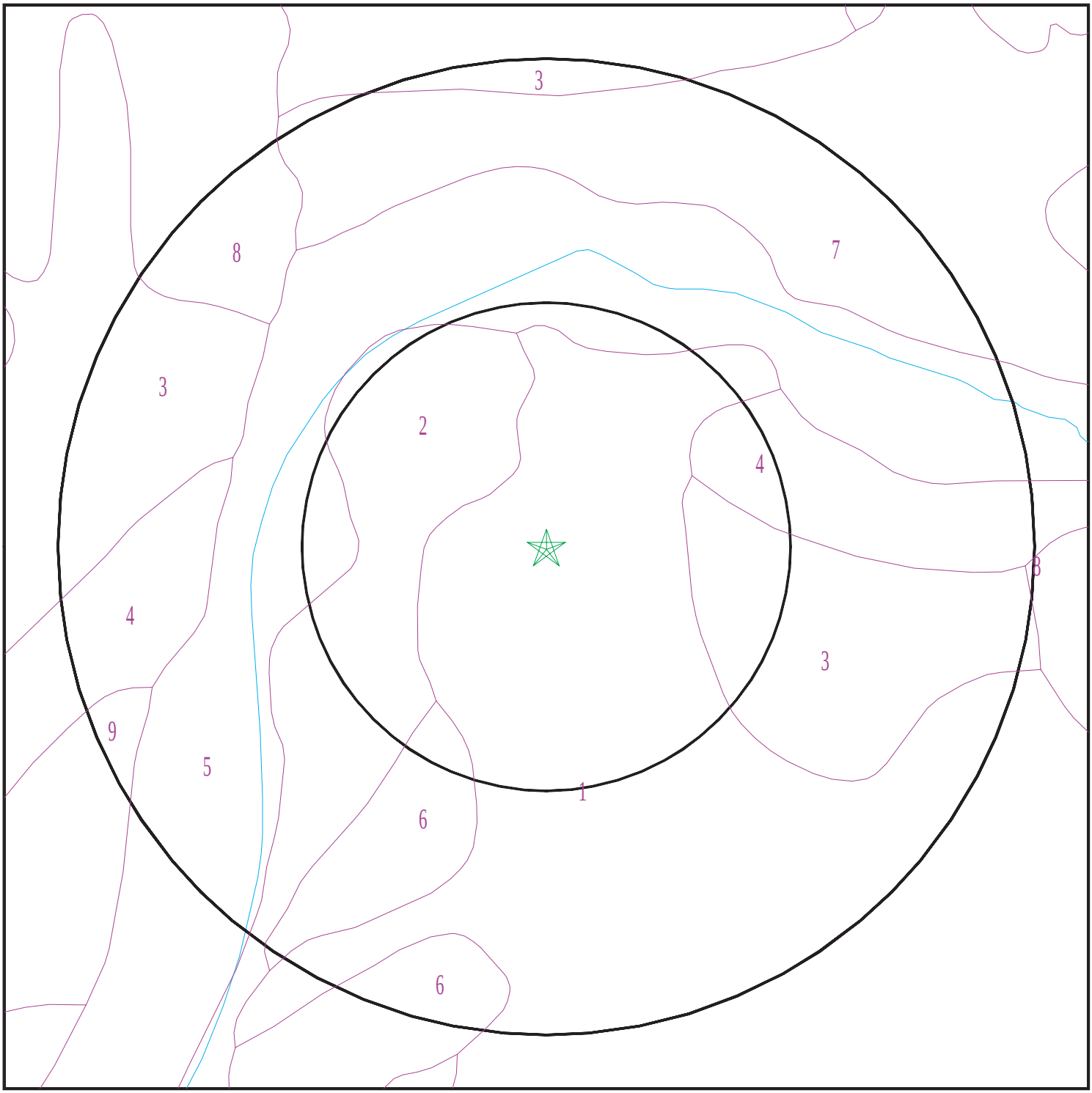
Era:	Cenozoic
System:	Tertiary
Series:	Miocene
Code:	Tmc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5414520.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Integral Communities-SCV	CLIENT:	Ramboll
ADDRESS:	28402 Bouquet Canyon Road Santa Clarita CA 91350	CONTACT:	Stephanie Eckelman
LAT/LONG:	34.457376 / 118.494791	INQUIRY #:	5414520.2s
		DATE:	September 05, 2018 2:28 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Ojai

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.3 Min: 6.1
2	25 inches	53 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.3 Min: 6.1
3	53 inches	59 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.3 Min: 6.1

Soil Map ID: 2

Soil Component Name: Sorrento

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.4
2	7 inches	72 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: Yolo

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 7.3 Min: 5.6
2	18 inches	72 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 7.3 Min: 5.6

Soil Map ID: 4

Soil Component Name: Mocho

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.4
2	14 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.4

Soil Map ID: 5

Soil Component Name: Metz

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	59 inches	stratified sand to loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.6

Soil Map ID: 6

Soil Component Name: Hanford

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 6.1

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	70 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 6.1

Soil Map ID: 7

Soil Component Name: Mocho

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.4
2	14 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.4

Soil Map ID: 8

Soil Component Name: Saugus

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0 Min: 0	Max: Min:
2	14 inches	42 inches	loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0 Min: 0	Max: Min:
3	42 inches	46 inches	weathered bedrock	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0 Min: 0	Max: Min:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 9

Soil Component Name: Hanford

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 6.1
2	7 inches	70 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 6.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1.000 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

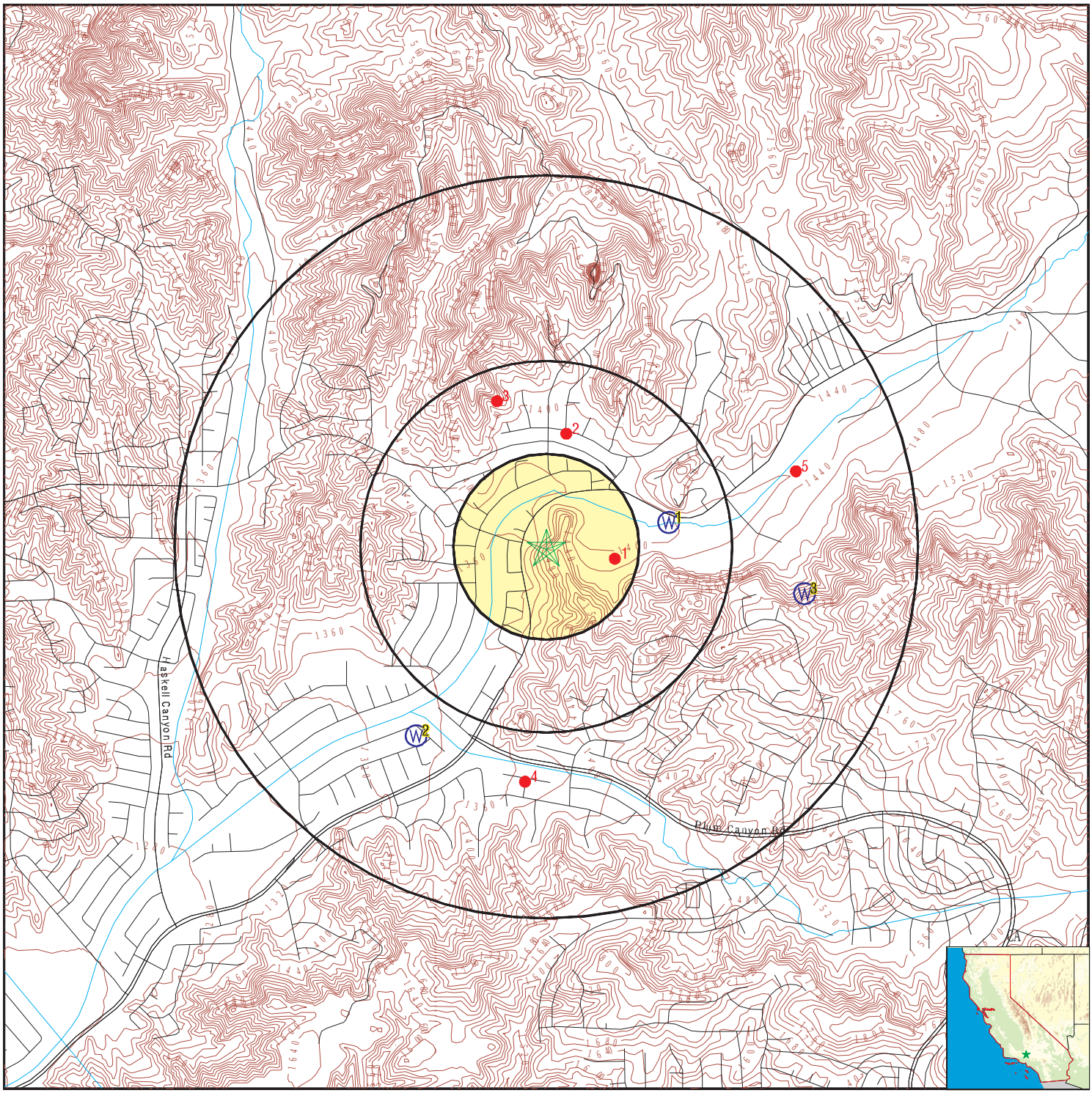
MAP ID	WELL ID	LOCATION FROM TP
1	4500	1/4 - 1/2 Mile ENE
2	4501	1/2 - 1 Mile SW
3	4499	1/2 - 1 Mile East

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG11000282861	1/8 - 1/4 Mile East
2	CAOG11000280635	1/4 - 1/2 Mile North
3	CAOG11000280654	1/4 - 1/2 Mile NNW
4	CAOG11000280880	1/2 - 1 Mile South
5	CAOG11000282527	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 5414520.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Integral Communities-SCV	CLIENT:	Ramboll
ADDRESS:	28402 Bouquet Canyon Road Santa Clarita CA 91350	CONTACT:	Stephanie Eckelman
LAT/LONG:	34.457376 / 118.494791	INQUIRY #:	5414520.2s
		DATE:	September 05, 2018 2:28 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
ENE
1/4 - 1/2 Mile
Lower

CA WELLS **4500**

Seq:	4500	Prim sta c:	04N/15W-06J01 S
Frds no:	1900011001	County:	19
District:	49	User id:	19C
System no:	1900011	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	342730.0	Longitude:	1182917.0
Precision:	3	Status:	AR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	1900011	System nam:	CAMP SCOTT & CAMP SCUDDER
Hqname:	Not Reported	Address:	28700 S. BOUQUET CYN RD.
City:	SAUGUS	State:	CA
Zip:	91350	Zip ext:	Not Reported
Pop serv:	230	Connection:	2
Area serve:	Not Reported		

2
SW
1/2 - 1 Mile
Lower

CA WELLS **4501**

Seq:	4501	Prim sta c:	04N/15W-06P01 S
Frds no:	1910017006	County:	19
District:	07	User id:	4TH
System no:	1910017	Water type:	G
Source nam:	GUIDA	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	342700.0	Longitude:	1183000.0
Precision:	8	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	1910017	System nam:	SANTA CLARITA WATER CO.
Hqname:	Not Reported	Address:	P.O. BOX 903
City:	SANTA CLARITA	State:	CA
Zip:	91380	Zip ext:	Not Reported
Pop serv:	49500	Connection:	19503
Area serve:	SAUGUS		

Sample date:	07-FEB-18	Finding:	4.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	07-FEB-18	Finding:	640.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		

Sample date:	01-NOV-17	Finding:	610.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		

Sample date:	01-NOV-17	Finding:	4.5
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	02-AUG-17	Finding:	580.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	02-AUG-17	Finding:	4.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	18-MAY-17	Finding:	91.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	3.9
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	18-MAY-17	Finding:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	0.17
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	18-MAY-17	Finding:	1.3
Chemical:	LANGELIER INDEX @ 60 C	Report units:	Not Reported
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	870.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	18-MAY-17	Finding:	260.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	18-MAY-17	Finding:	96.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	2.
Chemical:	ODOR THRESHOLD @ 60 C	Report units:	TON
Dlr:	1.		
Sample date:	18-MAY-17	Finding:	1300.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	7.8
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	300.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L

Dlr:	0.		
Sample date:	18-MAY-17	Finding:	360.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	3.9
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	18-MAY-17	Finding:	430.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	49.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	110.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	18-MAY-17	Finding:	2.8
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	03-MAY-17	Finding:	4.4
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	03-MAY-17	Finding:	580.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	01-FEB-17	Finding:	5.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	01-FEB-17	Finding:	590.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	02-NOV-16	Finding:	5.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	02-NOV-16	Finding:	590.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	03-AUG-16	Finding:	580.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	01-AUG-16	Finding:	5.7
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	06-JUL-16	Finding:	5.8
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	04-MAY-16	Finding:	570.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	03-FEB-16	Finding:	5.8
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	03-FEB-16	Finding:	580.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	04-NOV-15	Finding:	600.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	05-AUG-15	Finding:	570.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	06-MAY-15	Finding:	520.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	09-FEB-15	Finding:	21.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-FEB-15	Finding:	560.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	11-SEP-14	Finding:	3.
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	11-SEP-14	Finding:	0.23
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	06-AUG-14	Finding:	610.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	22-MAY-14	Finding:	2.4
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	3600.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	22-MAY-14	Finding:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	5.1e-002
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	22-MAY-14	Finding:	8000.
Chemical:	CARBON DIOXIDE	Report units:	UG/L

Dlr:	0.		
Sample date:	22-MAY-14	Finding:	1.3
Chemical:	LANGELIER INDEX @ 60 C	Report units:	Not Reported
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	700.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	2.1
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	22-MAY-14	Finding:	0.57
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	22-MAY-14	Finding:	180.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	22-MAY-14	Finding:	59.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	1100.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	7.8
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	260.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	310.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	400.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	88.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	45.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	22-MAY-14	Finding:	92.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	20-FEB-14	Finding:	556.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		

Sample date:	22-AUG-13	Finding:	499.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	09-MAY-13	Finding:	550.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	21-FEB-13	Finding:	540.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	08-NOV-12	Finding:	530.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	16-AUG-12	Finding:	560.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	24-MAY-12	Finding:	480.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	16-FEB-12	Finding:	550.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		

3
East
1/2 - 1 Mile
Higher

CA WELLS **4499**

Seq:	4499	Prim sta c:	04N/15W-05C03 S
Frds no:	1900913001	County:	19
District:	49	User id:	19C
System no:	1900913	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	342720.0	Longitude:	1182854.0
Precision:	3	Status:	AR
Comment 1:	SAUGUS - 400 FEET SOUTH OF BOUQUET CYN RD 15		
Comment 2:	ACROSS CREEK	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	1900913	System nam:	LILY OF THE VALLEY MOBILE HOME PARK
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		
Sample date:	14-FEB-17	Finding:	8.3
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	14-FEB-17	Finding:	11.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	17-JAN-17	Finding:	11.

Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	17-SEP-14	Finding:	336.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	72.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	38.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	76.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	1.8
Chemical:	SODIUM ABSORPTION RATIO	Report units:	Not Reported
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	2.
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	100.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	17-SEP-14	Finding:	0.5
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	17-SEP-14	Finding:	600.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	17-SEP-14	Finding:	50.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	17-SEP-14	Finding:	560.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	3.e-002
Chemical:	LANGELIER INDEX AT SOURCE TEMP.	Report units:	Not Reported
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	11.9
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	3900.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	17-SEP-14	Finding:	340.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	17-SEP-14	Finding:	280.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	7.2
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	968.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	17-SEP-14	Finding:	63.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	23-MAY-13	Finding:	8.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	14-AUG-12	Finding:	6.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
East **OIL_GAS** **CAOG11000282861**
1/8 - 1/4 Mile

Districtnu:	2	Apinumber:	03720179
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Paul Benz	Countyname:	Los Angeles
Fieldname:	Any Field	Areaname:	Any Area
Section:	6	Township:	04N
Range:	15W	Basemeridi:	SB
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Not Reported
Leasename:	Benz	Wellnumber:	6-2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	Not Reported
Welldeptha:	0	Redrillfoo:	0
Abandonedd:	Not Reported	Completion:	Not Reported
Directiona:	Not Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000282861		

2
North **OIL_GAS** **CAOG11000280635**
1/4 - 1/2 Mile

Districtnu:	2	Apinumber:	03705123
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Angeles Oil Corp.	Countyname:	Los Angeles
Fieldname:	Any Field	Areaname:	Any Area
Section:	6	Township:	04N
Range:	15W	Basemeridi:	SB
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Not Reported
Leasename:	McCown	Wellnumber:	53-6
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	Not Reported
Welldeptha:	0	Redrillfoo:	0
Abandonedd:	Not Reported	Completion:	Not Reported
Directiona:	Not Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000280635		

3
NNW **OIL_GAS** **CAOG11000280654**
1/4 - 1/2 Mile

Districtnu:	2	Apinumber:	03705204
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Paul Benz	Countyname:	Los Angeles
Fieldname:	Any Field	Areaname:	Any Area
Section:	6	Township:	04N
Range:	15W	Basemeridi:	SB
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Not Reported
Leasename:	McCown	Wellnumber:	6-1

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	Not Reported
Welldeptha:	0	Redrillfoo:	0
Abandonedd:	Not Reported	Completion:	Not Reported
Directiona:	Not Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000280654		

4
South
1/2 - 1 Mile

OIL_GAS **CAOG11000280880**

Districtnu:	2	Apinumber:	03705927
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Solar Basin Oil Co.	Countyname:	Los Angeles
Fieldname:	Any Field	Areaname:	Any Area
Section:	7	Township:	04N
Range:	15W	Basemeridi:	SB
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Not Reported
Leasename:	B. & R.	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	Not Reported
Welldeptha:	0	Redrillfoo:	0
Abandonedd:	Not Reported	Completion:	Not Reported
Directiona:	Not Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000280880		

5
ENE
1/2 - 1 Mile

OIL_GAS **CAOG11000282527**

Districtnu:	2	Apinumber:	03720716
Blmwell:	N	Redrillcan:	No
Dryhole:	Y	Wellstatus:	P
Operatorna:	Schweitzer Expl. Co.	Countyname:	Los Angeles
Fieldname:	Any Field	Areaname:	Any Area
Section:	5	Township:	04N
Range:	15W	Basemeridi:	SB
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Not Reported
Leasename:	Carson	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	Not Reported
Welldeptha:	0	Redrillfoo:	0
Abandonedd:	Not Reported	Completion:	Not Reported
Directiona:	Not Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000282527		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
91350	49	0

Federal EPA Radon Zone for LOS ANGELES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for LOS ANGELES COUNTY, CA

Number of sites tested: 63

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.711 pCi/L	98%	2%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.933 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX C
HISTORICAL RESEARCH DOCUMENTATION

APPENDIX C.1
TOPOGRAPHIC MAPS

Integral Communities-SCV
28402 Bouquet Canyon Road
Santa Clarita, CA 91350

Inquiry Number: 5414520.4
September 05, 2018

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

09/05/18

Site Name:	Client Name:
Integral Communities-SCV	Ramboll
28402 Bouquet Canyon Road	18100 Von Karman Avenue
Santa Clarita, CA 91350	Irvine, CA 92612
EDR Inquiry # 5414520.4	Contact: Stephanie Eckelman

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Ramboll were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: Integral Communities

Coordinates:

Latitude:	34.457376 34° 27' 27" North
Longitude:	-118.494791 -118° 29' 41" West
UTM Zone:	Zone 11 North
UTM X Meters:	362697.88
UTM Y Meters:	3813884.31
Elevation:	1440.31' above sea level

Maps Provided:

2012	1942
1995	1940, 1941
1994	1929, 1932
1988	1900, 1903
1969, 1974	
1960	
1947	
1943, 1945	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Newhall
2012
7.5-minute, 24000

Mint Canyon
2012
7.5-minute, 24000

1995 Source Sheets

Mint Canyon
1995
7.5-minute, 24000
Aerial Photo Revised 1993

Newhall
1995
7.5-minute, 24000
Aerial Photo Revised 1995

1994 Source Sheets

Mint Canyon
1994
7.5-minute, 24000
Aerial Photo Revised 1985

1988 Source Sheets

Newhall
1988
7.5-minute, 24000
Aerial Photo Revised 1985

Mint Canyon
1988
7.5-minute, 24000
Aerial Photo Revised 1985

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1969, 1974 Source Sheets

Newhall
1969
7.5-minute, 24000
Aerial Photo Revised 1969

Mint Canyon
1974
7.5-minute, 24000
Aerial Photo Revised 1974

1960 Source Sheets

Mint Canyon
1960
7.5-minute, 24000
Aerial Photo Revised 1956

1947 Source Sheets

SANTA SUSANA
1947
15-minute, 50000

SAN FERNANDO
1947
15-minute, 50000

1943, 1945 Source Sheets

Santa Susana
1943
15-minute, 62500
Aerial Photo Revised 1938

San Fernando
1945
15-minute, 62500
Aerial Photo Revised 1940

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1942 Source Sheets

Humphreys
1942
7.5-minute, 24000
Aerial Photo Revised 1932

1940, 1941 Source Sheets

San Fernando
1940
15-minute, 62500
Aerial Photo Revised 1940

Santa Susana
1941
15-minute, 62500
Aerial Photo Revised 1938

1929, 1932 Source Sheets

Saugus
1929
7.5-minute, 24000

Humphreys
1932
7.5-minute, 24000

1900, 1903 Source Sheets

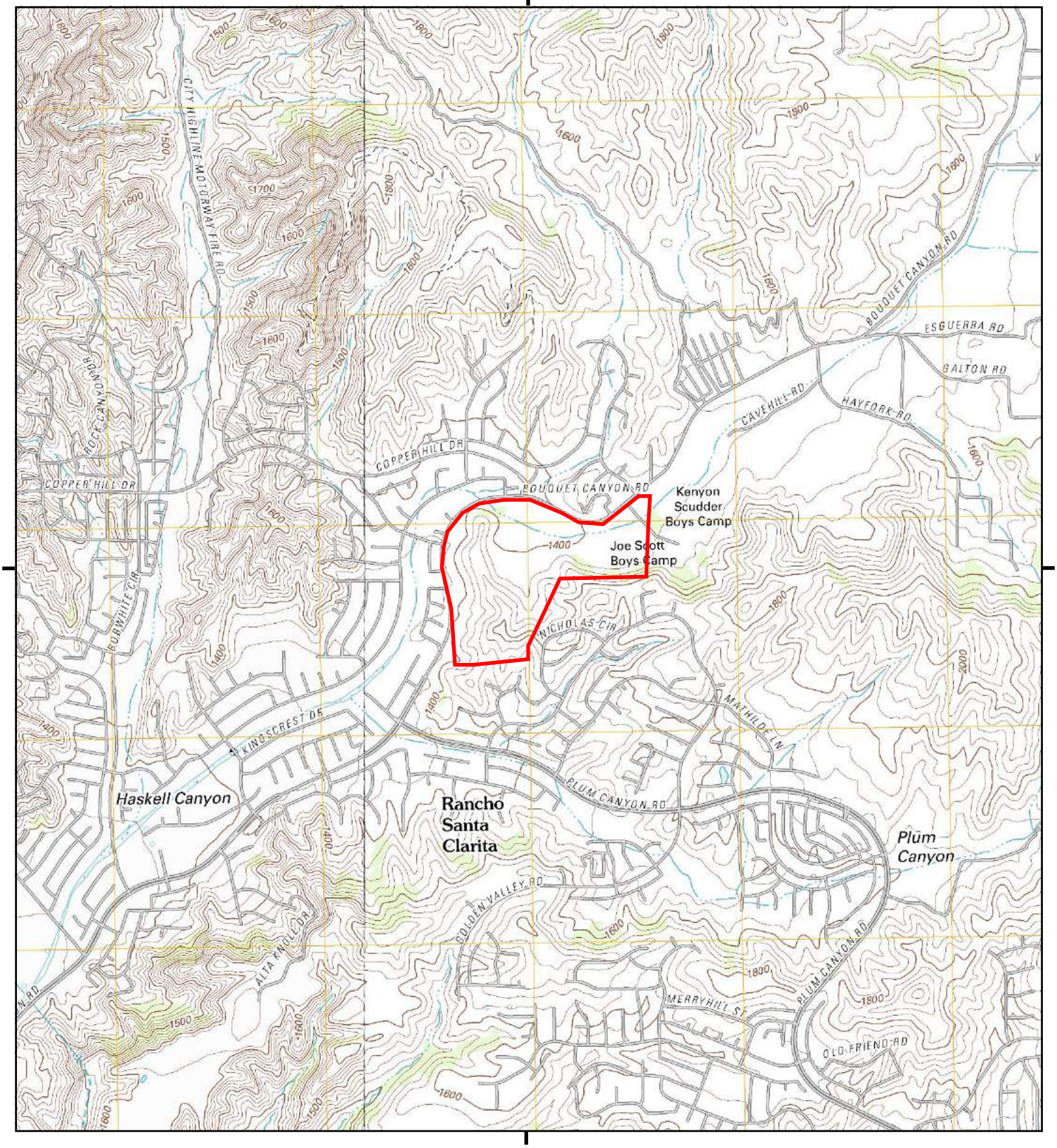
Fernando
1900
15-minute, 62500

San Fernando
1900
15-minute, 62500

Santa Susana
1903
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

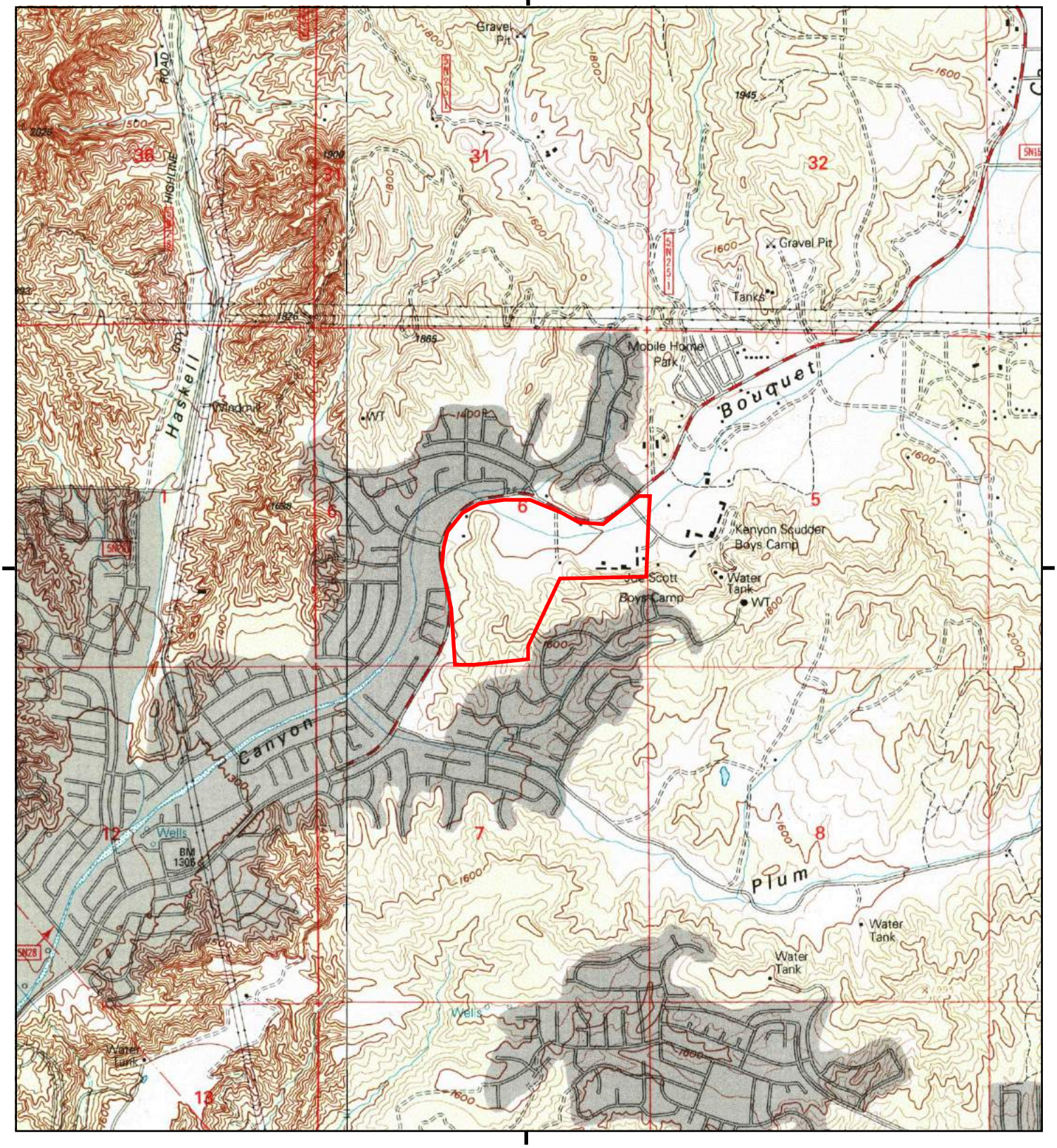
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mint Canyon, 2012, 7.5-minute
W, Newhall, 2012, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

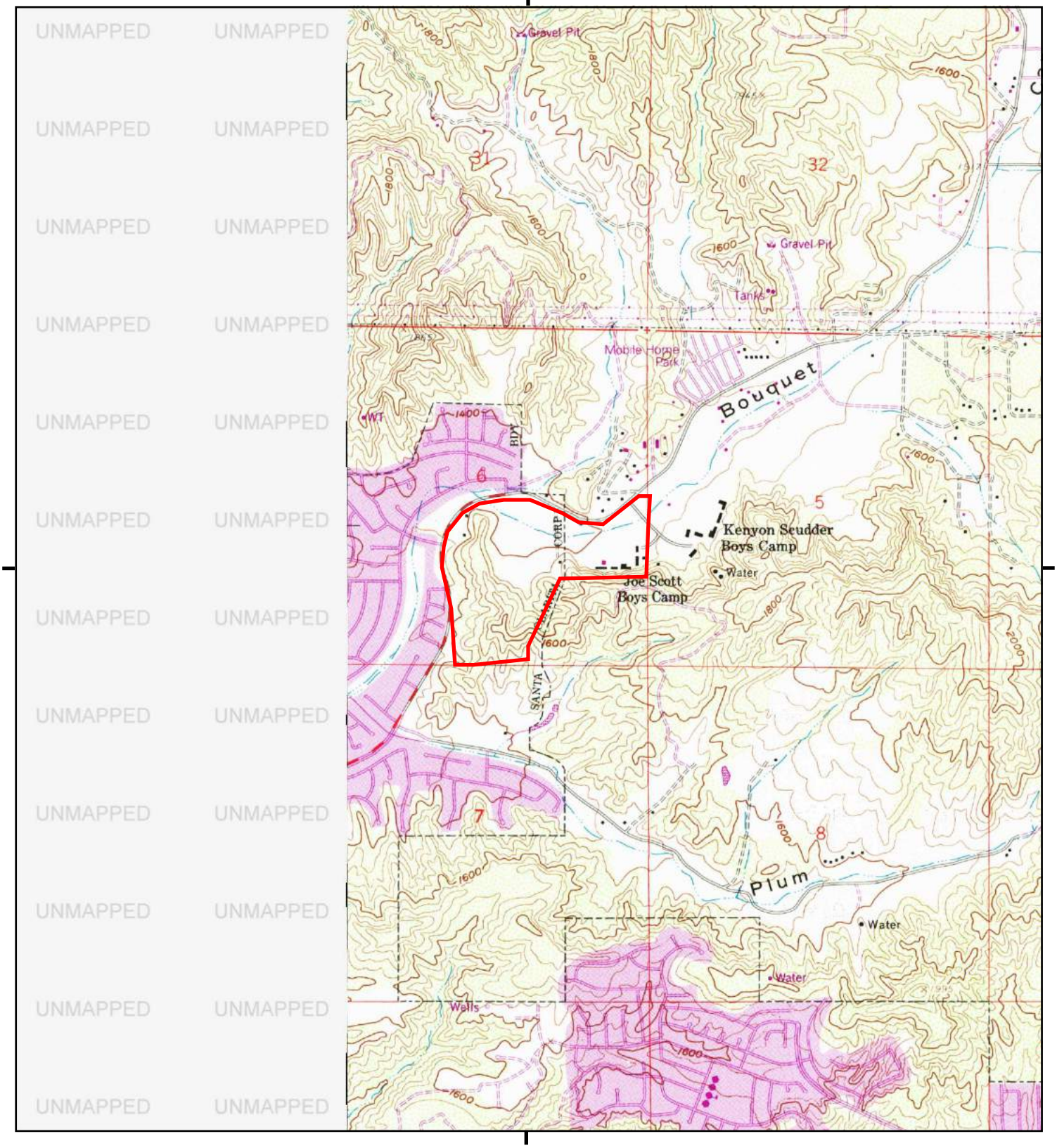
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mint Canyon, 1995, 7.5-minute
W, Newhall, 1995, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

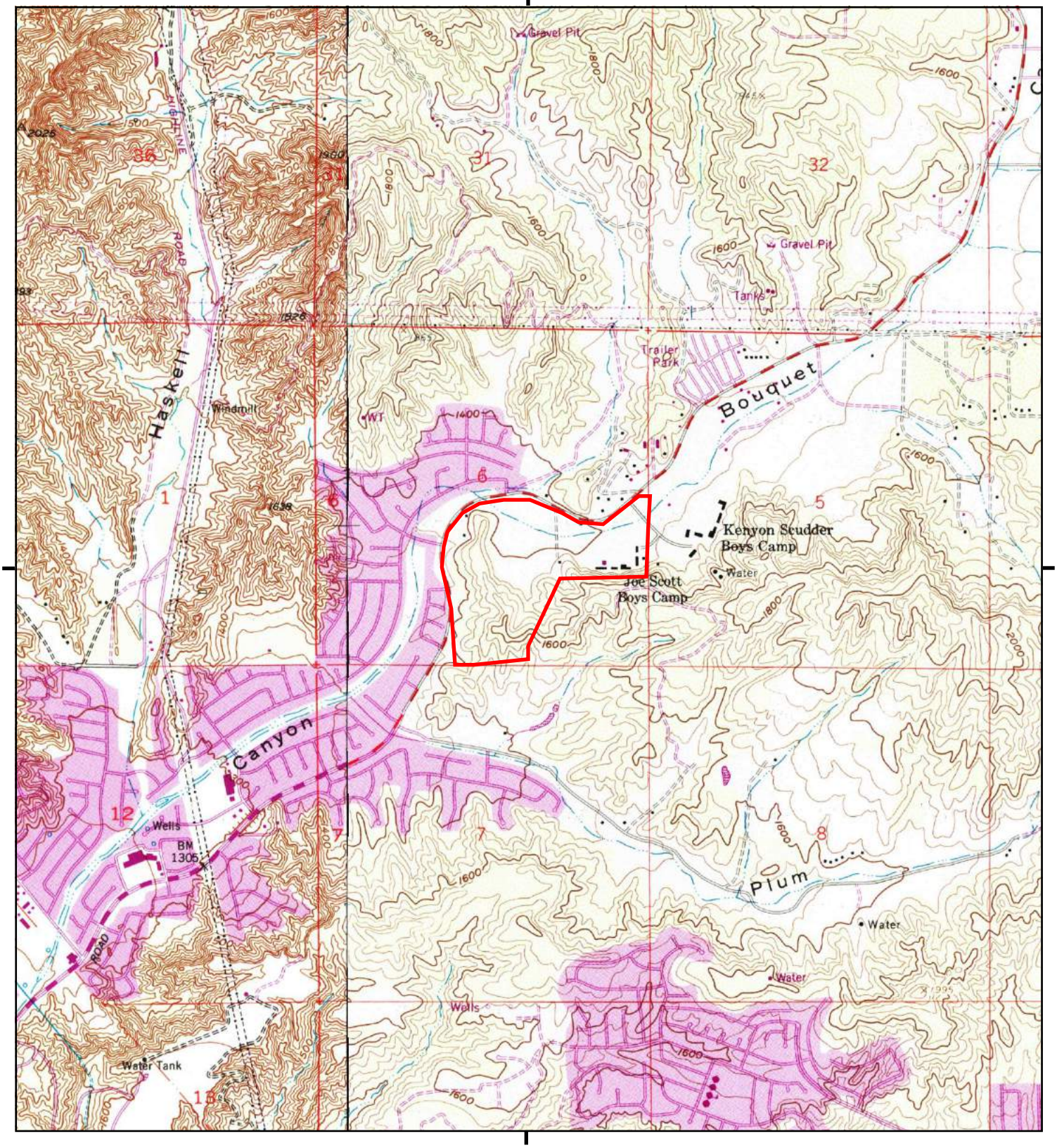
TP, Mint Canyon, 1994, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N

Historical Topo Map

1988



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

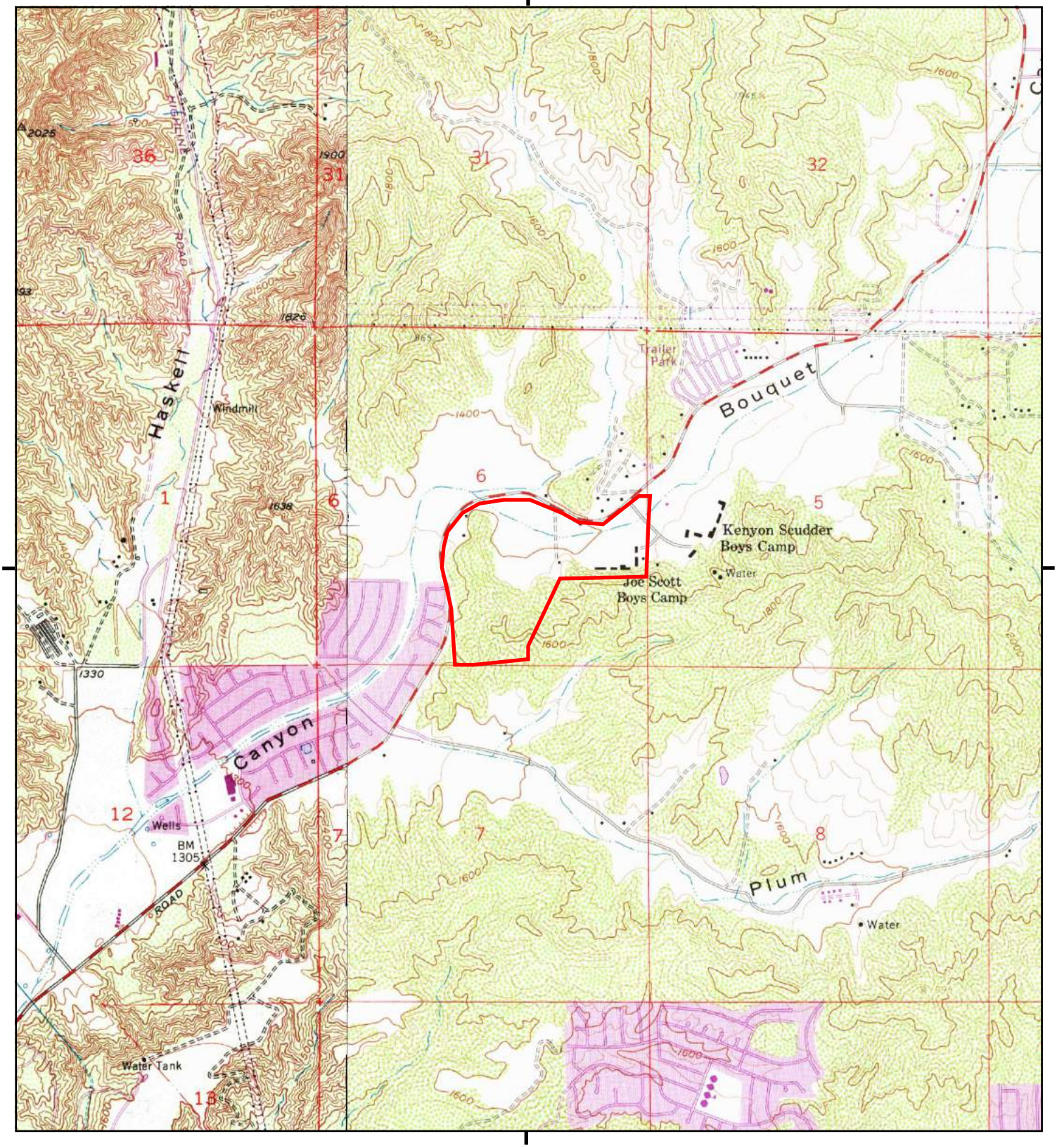
TP, Mint Canyon, 1988, 7.5-minute
W, Newhall, 1988, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N

Historical Topo Map

1969, 1974



This report includes information from the following map sheet(s).

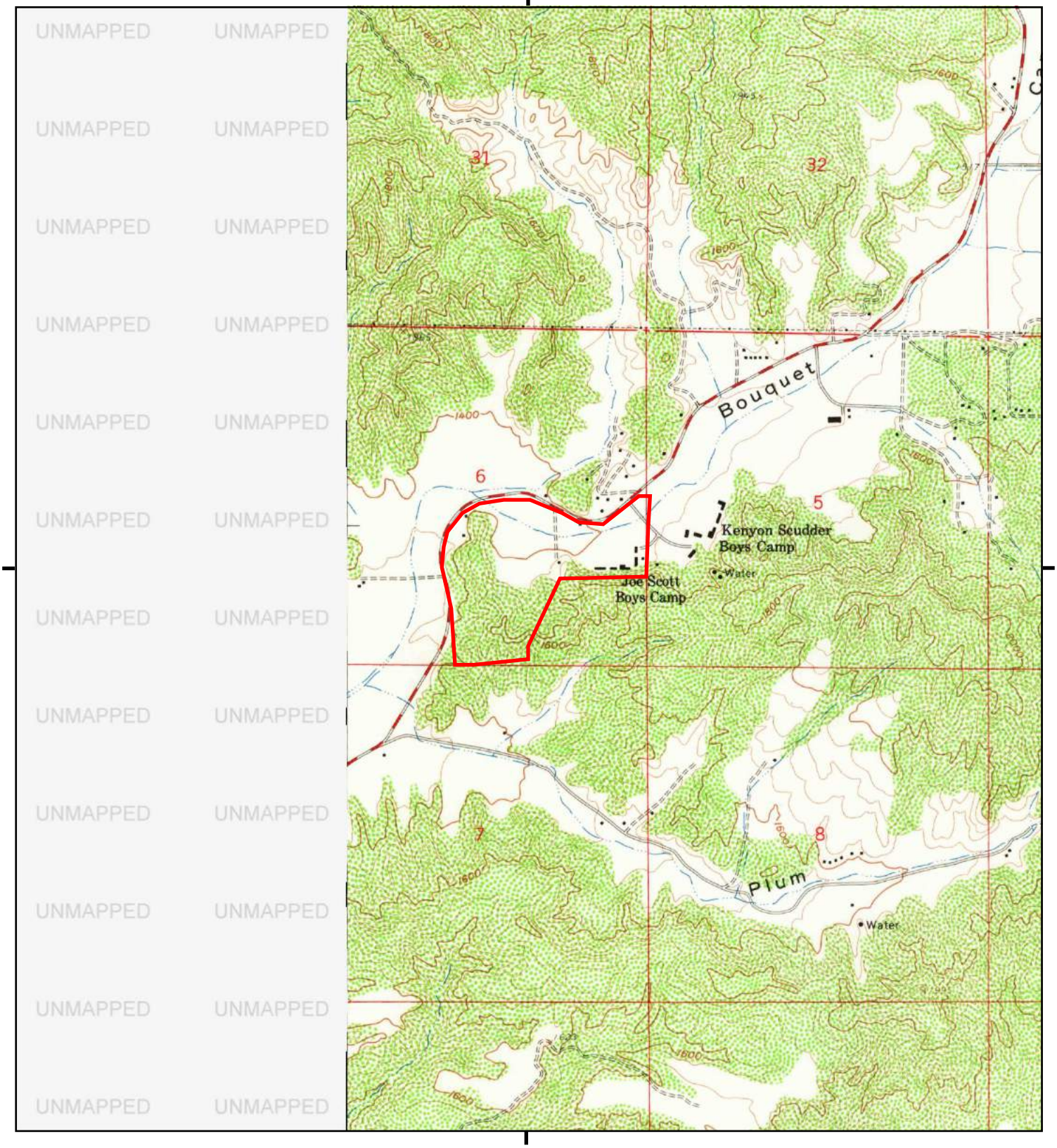
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mint Canyon, 1974, 7.5-minute
W, Newhall, 1969, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

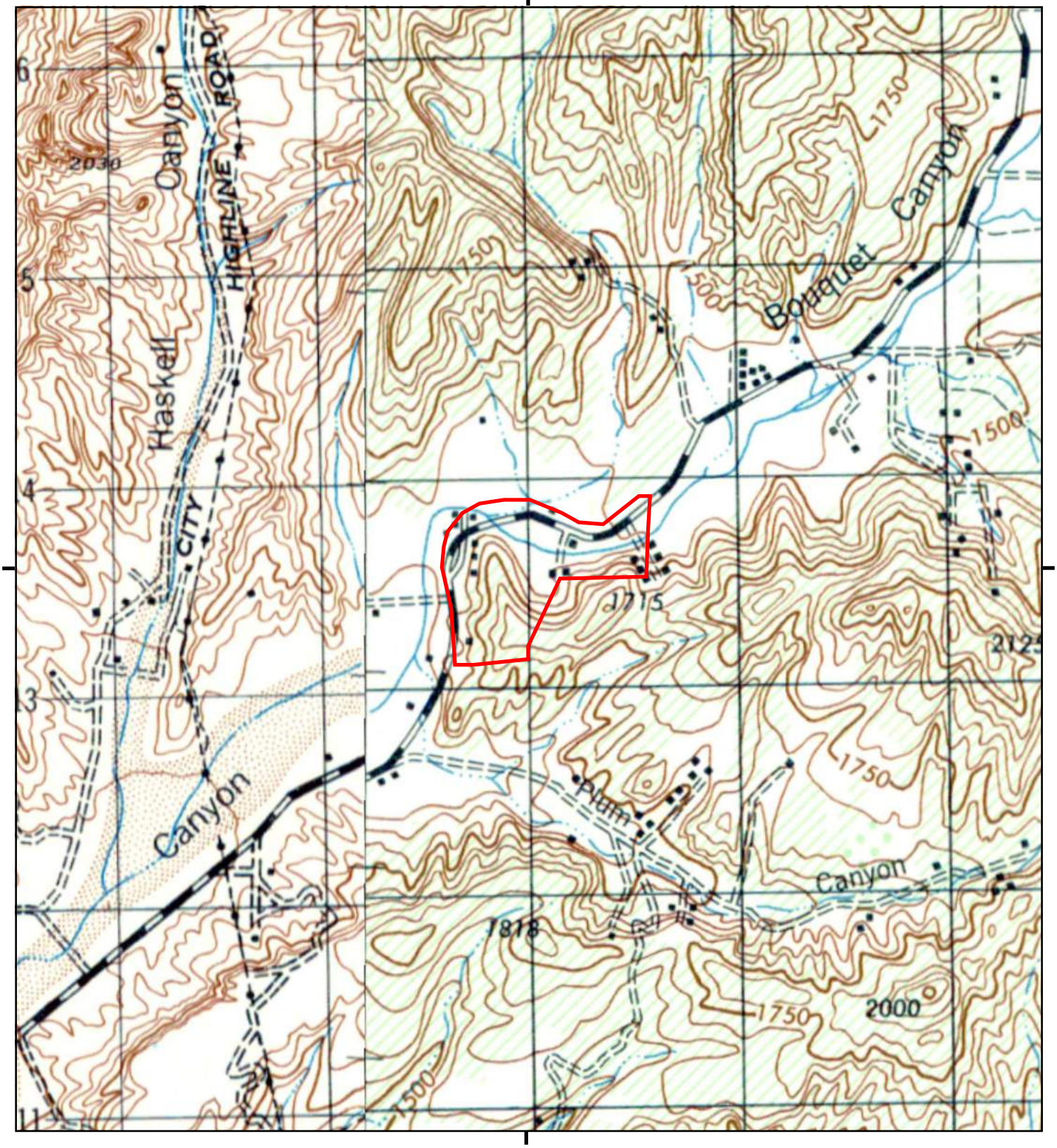
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mint Canyon, 1960, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

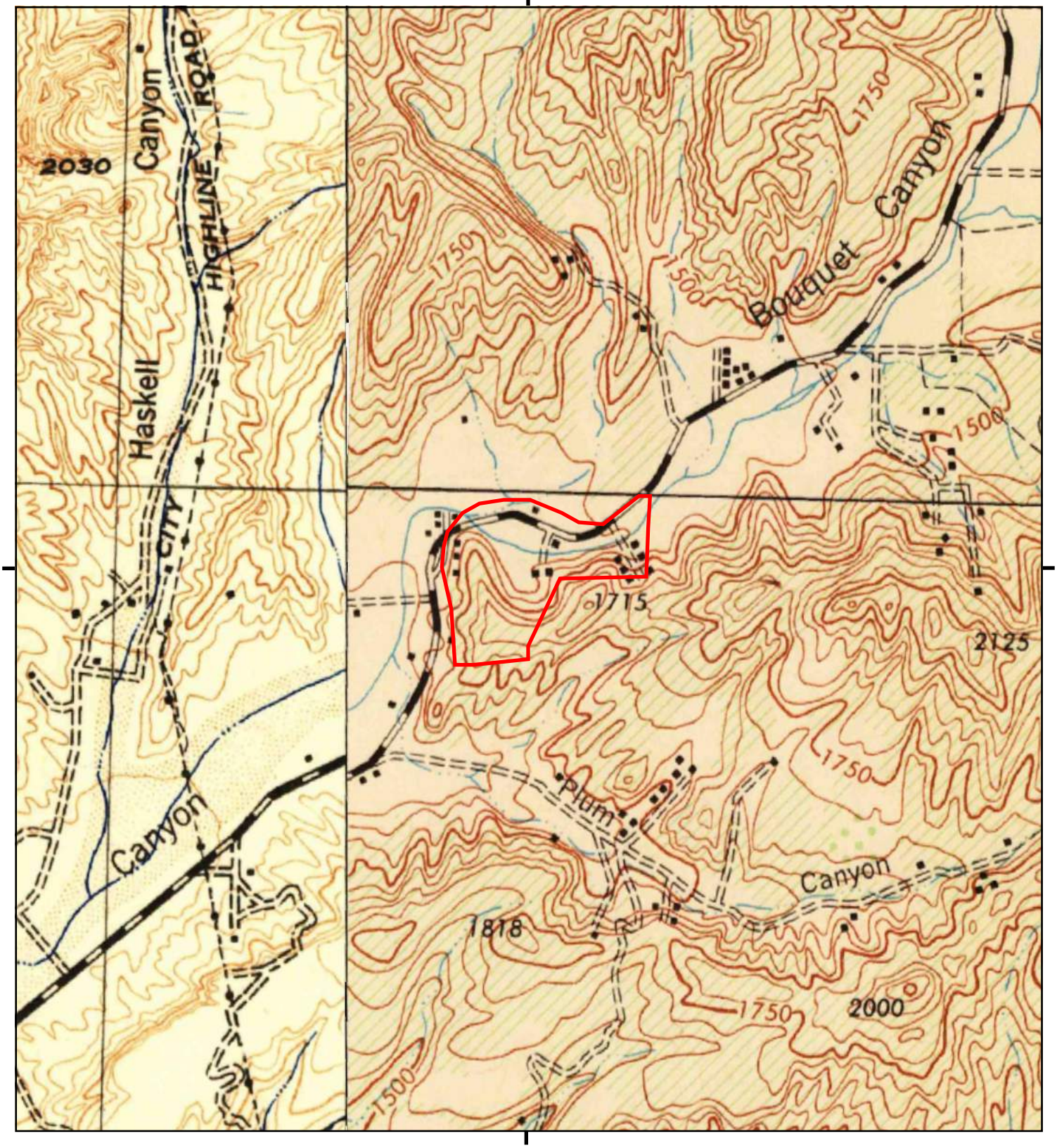
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, SAN FERNANDO, 1947, 15-minute
SW, SANTA SUSANA, 1947, 15-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

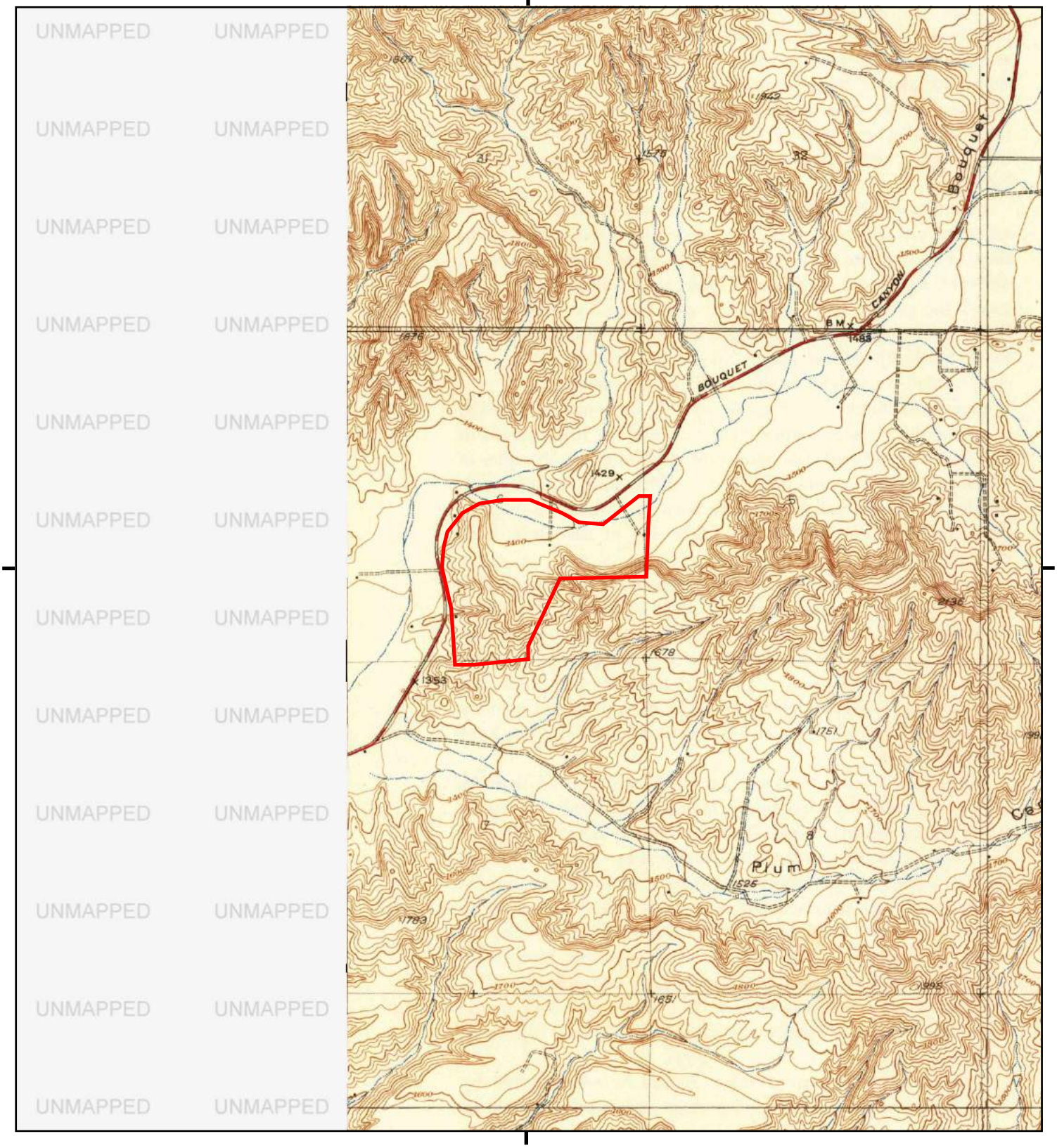
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, San Fernando, 1945, 15-minute
SW, Santa Susana, 1943, 15-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

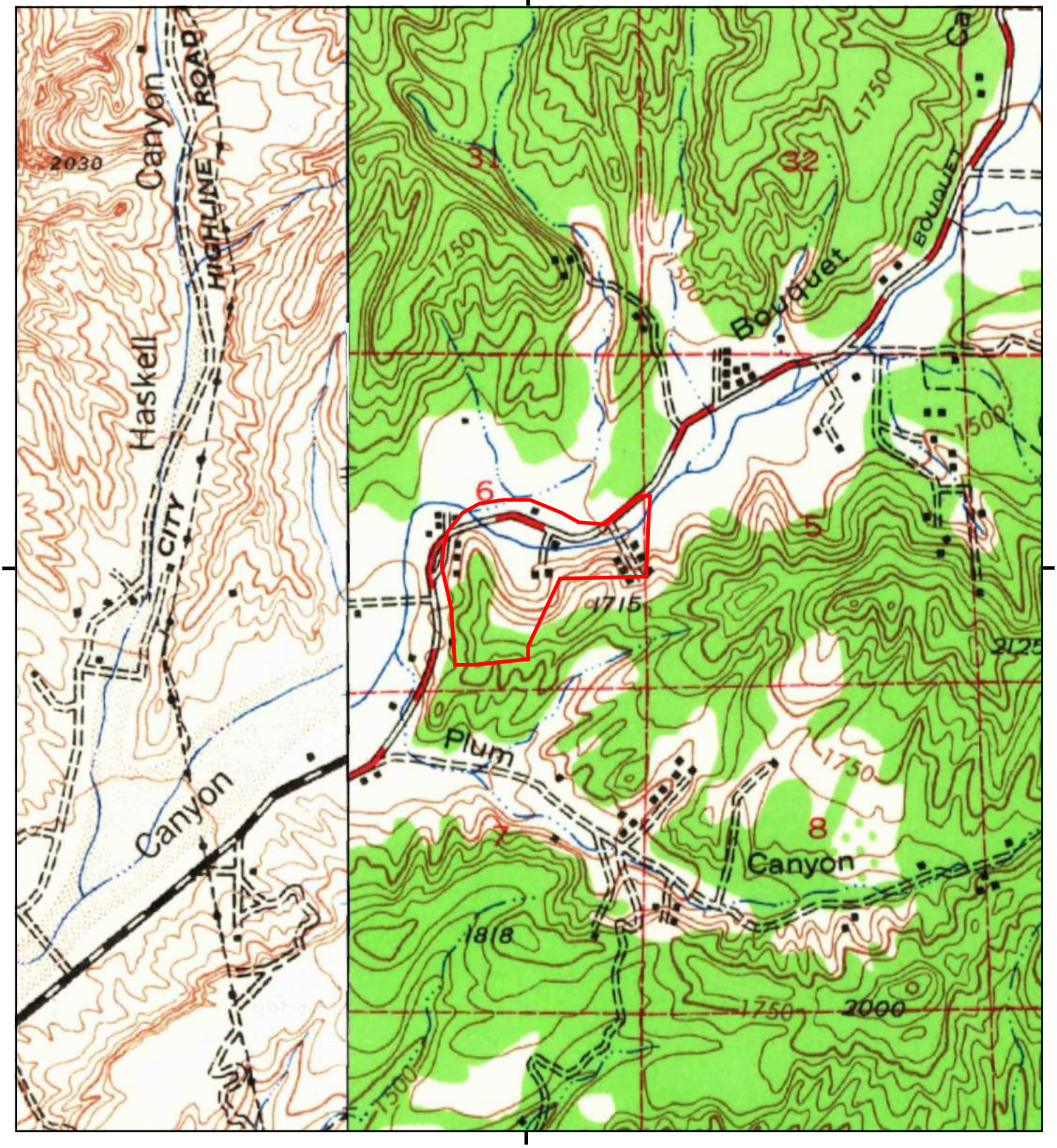
TP, Humphreys, 1942, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N

Historical Topo Map

1940, 1941



This report includes information from the following map sheet(s).

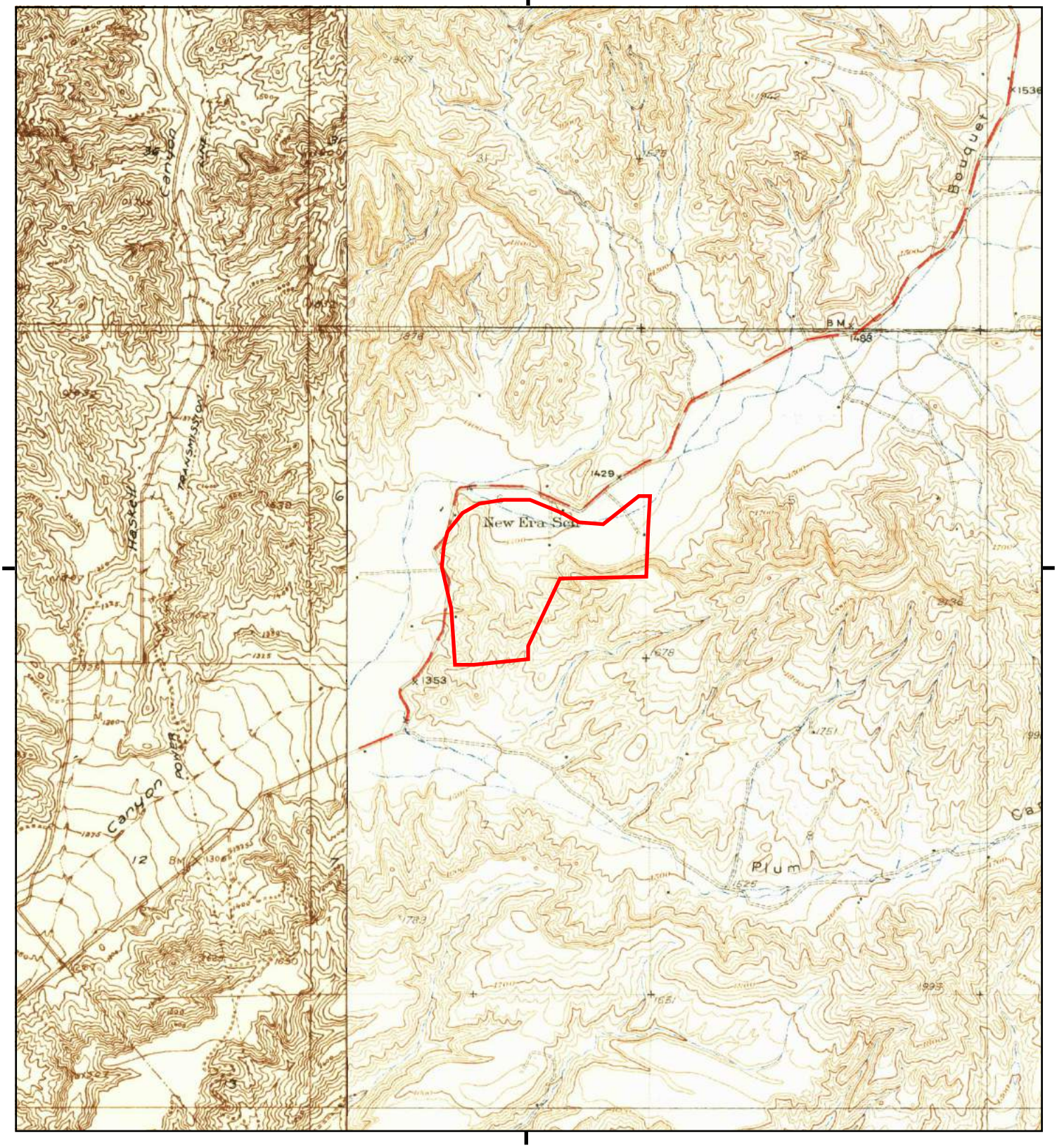
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, San Fernando, 1940, 15-minute
SW, Santa Susana, 1941, 15-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

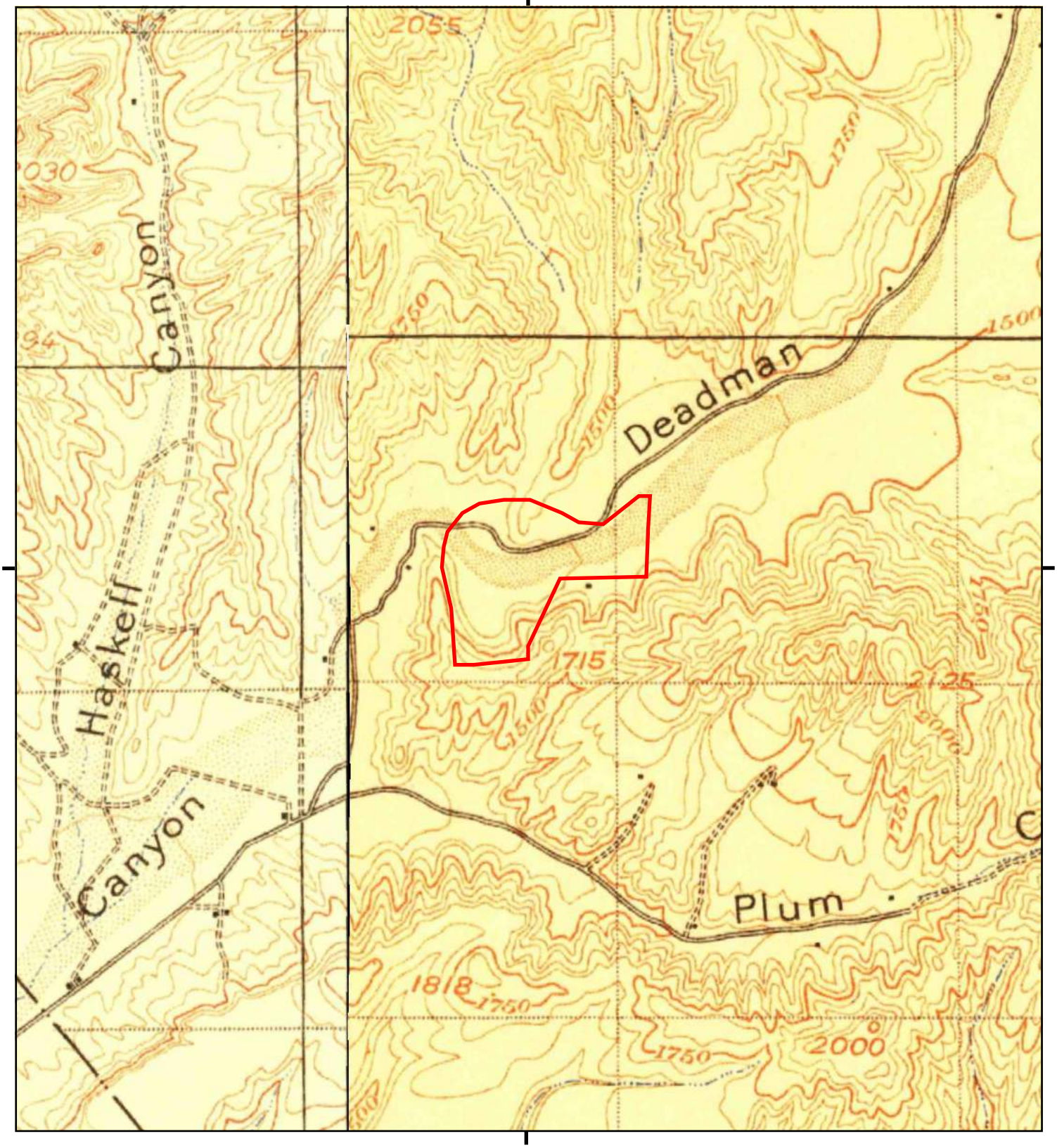
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Humphreys, 1932, 7.5-minute
W, Saugus, 1929, 7.5-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Fernando, 1900, 15-minute
TP, San Fernando, 1900, 15-minute
SW, Santa Susana, 1903, 15-minute

SITE NAME: Integral Communities-SCV
ADDRESS: 28402 Bouquet Canyon Road
Santa Clarita, CA 91350
CLIENT: Ramboll

N

APPENDIX C.2
AERIAL PHOTOGRAPHS

Integral Communities-SCV

28402 Bouquet Canyon Road

Santa Clarita, CA 91350

Inquiry Number: 5414520.8

September 06, 2018

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

09/06/18

Site Name:

Integral Communities-SCV
28402 Bouquet Canyon Road
Santa Clarita, CA 91350
EDR Inquiry # 5414520.8

Client Name:

Ramboll
18100 Von Karman Avenue
Irvine, CA 92612
Contact: Stephanie Eckelman

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Flight Date: June 05, 2002	USDA
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1989	1"=500'	Flight Date: September 08, 1989	USDA
1981	1"=500'	Flight Date: February 15, 1981	USGS
1974	1"=500'	Flight Date: April 13, 1974	USGS
1970	1"=500'	Flight Date: April 03, 1970	USGS
1969	1"=500'	Flight Date: July 25, 1969	USGS
1952	1"=500'	Flight Date: April 11, 1952	USDA
1947	1"=500'	Flight Date: August 16, 1947	USGS
1940	1"=500'	Flight Date: May 13, 1940	USDA
1928	1"=500'	Flight Date: January 01, 1928	USGS

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INQUIRY #: 5414520.8
YEAR: 2016
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 2002
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 1994
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 1989
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 1981
= 500'
N
EDR

INQUIRY #: 5414520.8
YEAR: 1974
= 500'
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EDR

INQUIRY #: 5414520.8
YEAR: 1970
= 500'
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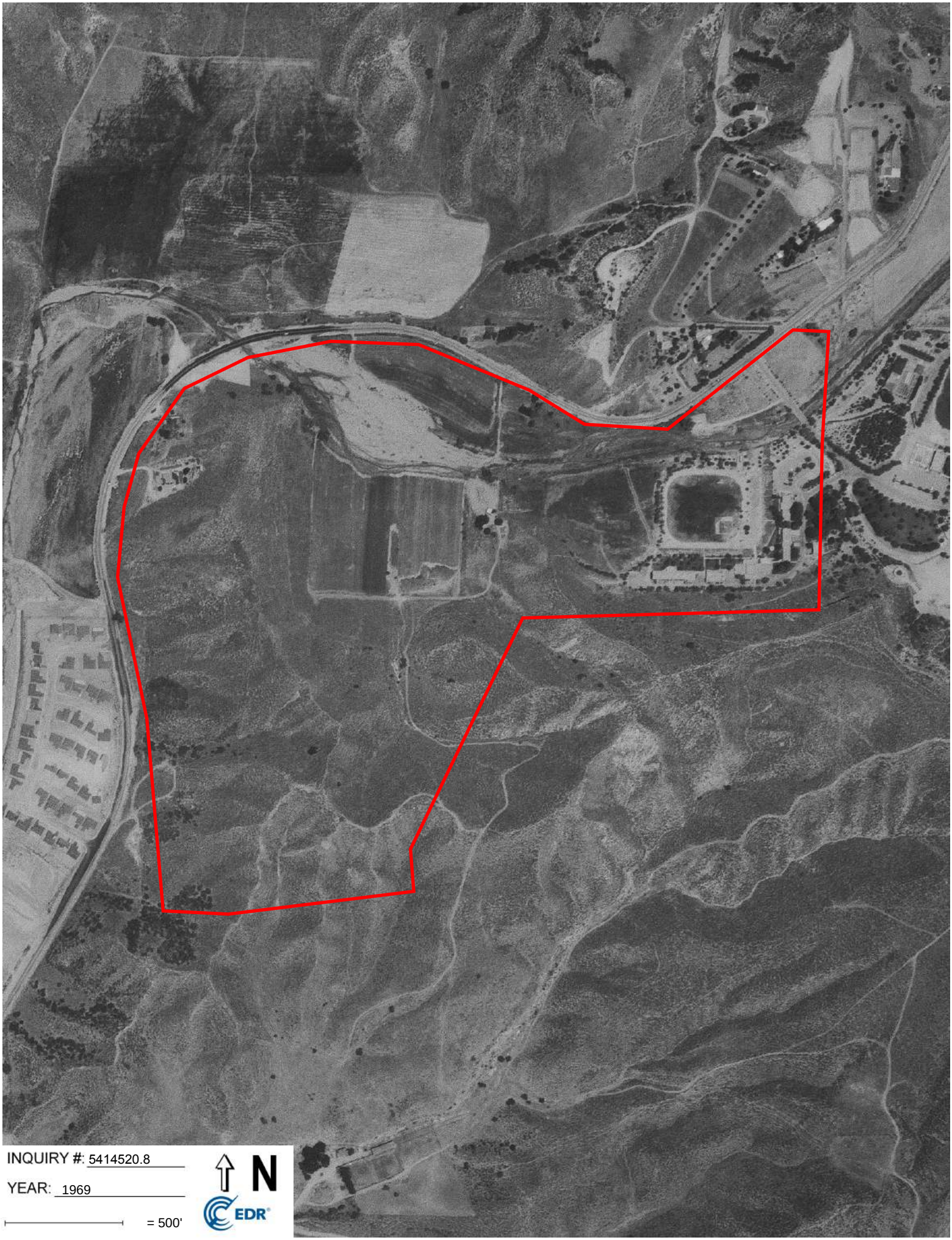
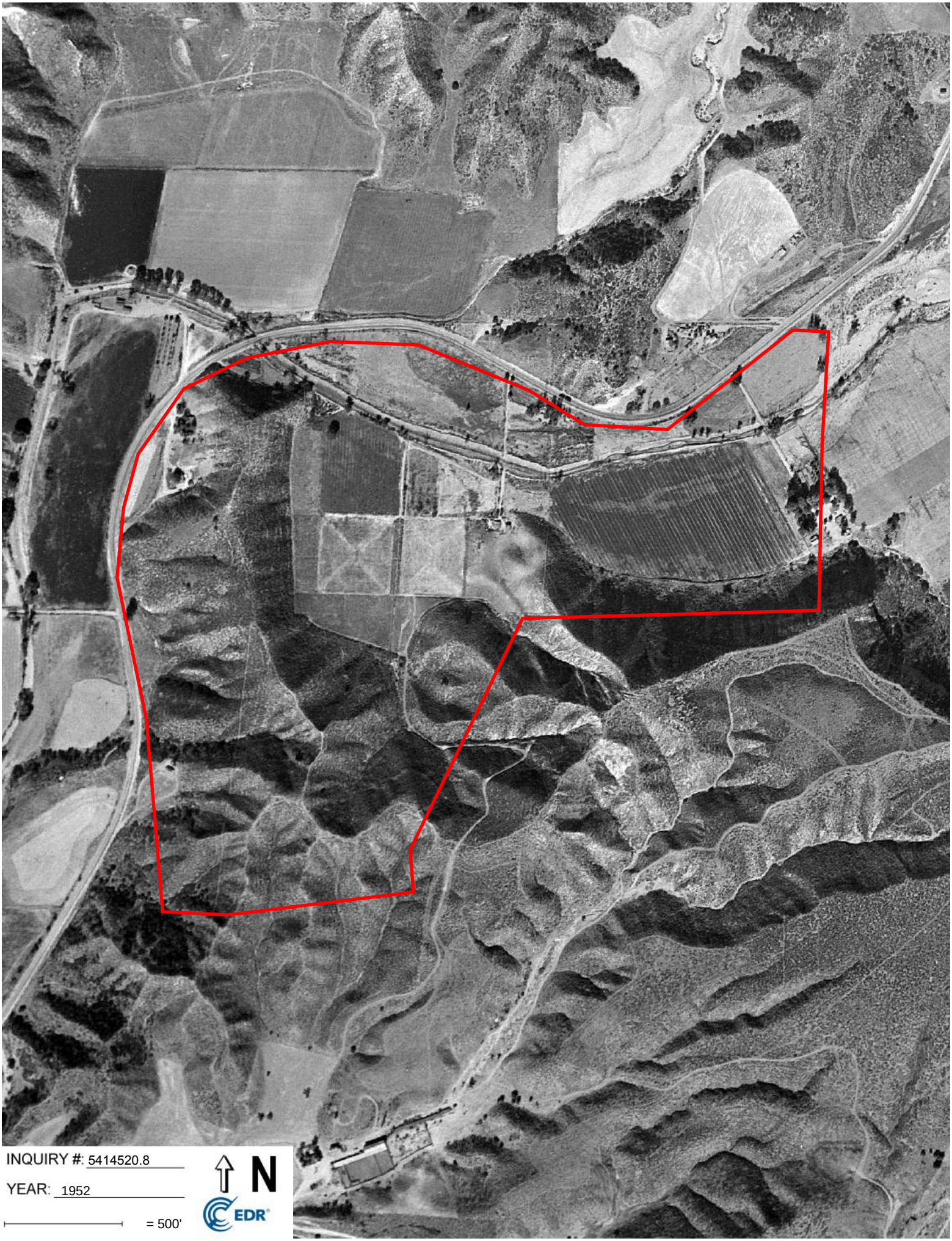
EDR


INQUIRY #: 5414520.8
YEAR: 1969
= 500'
N
EDR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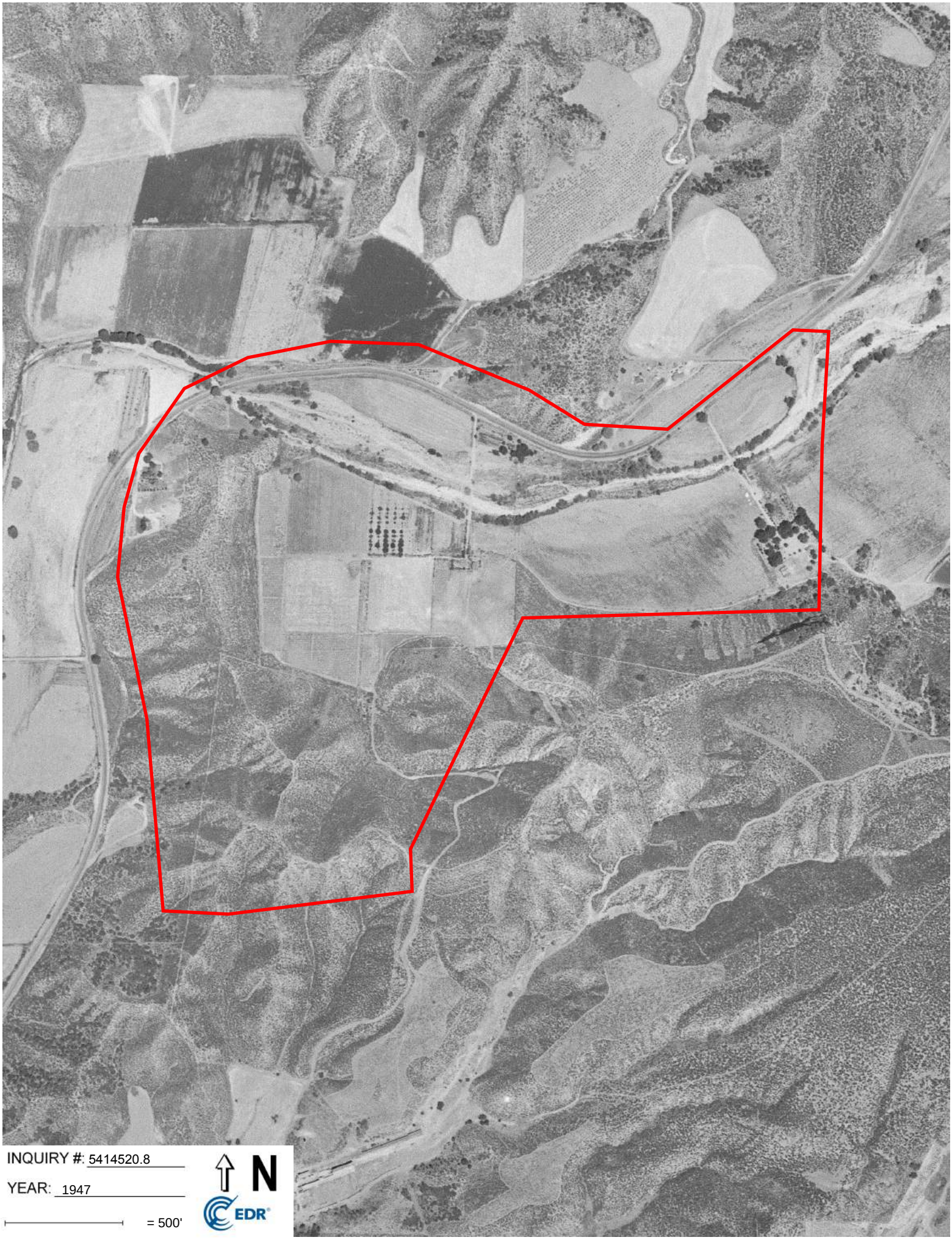
EDR


INQUIRY #: 5414520.8
YEAR: 1947
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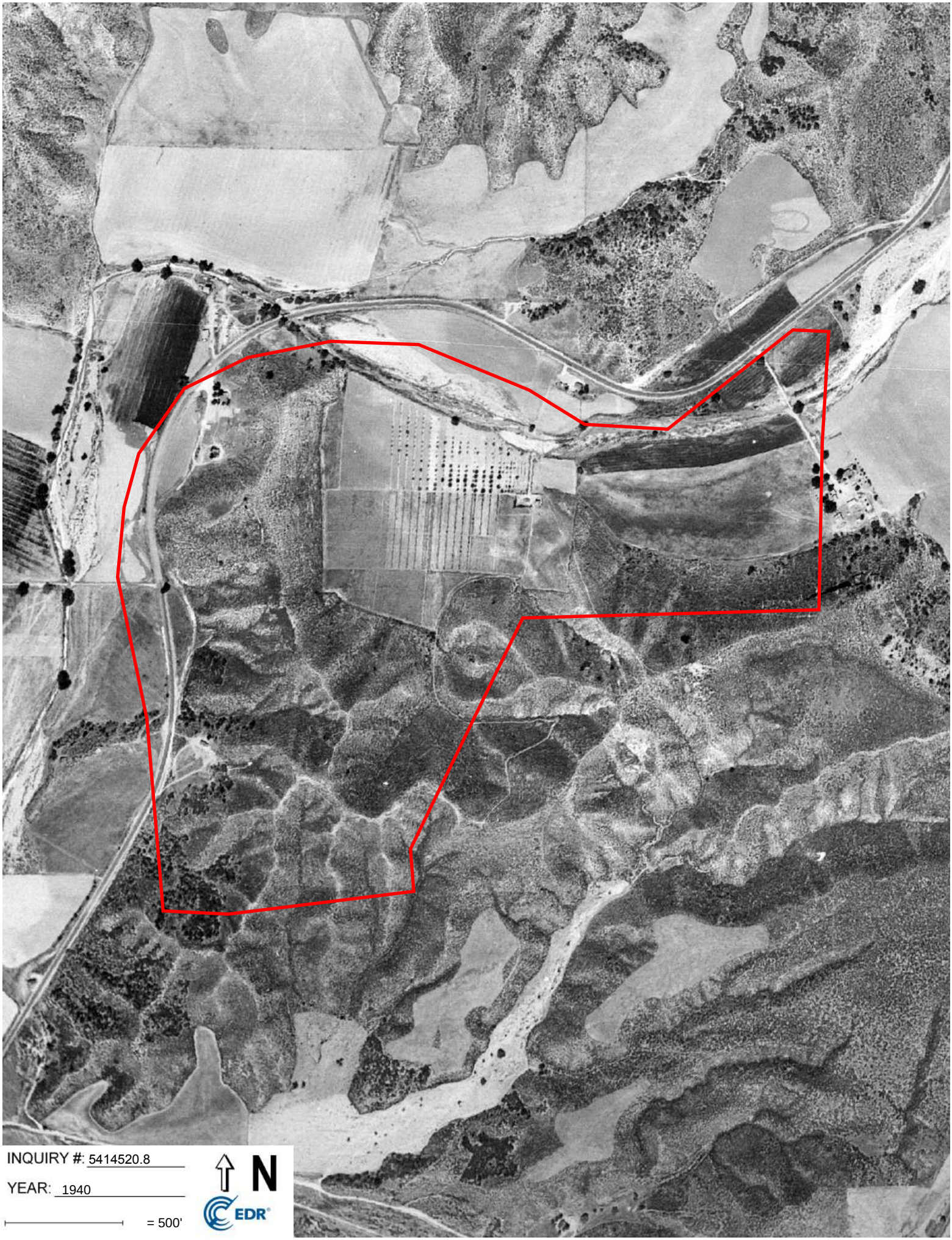
EDR


INQUIRY #: 5414520.8
YEAR: 1940
= 500'
N
EDR

INQUIRY #: 5414520.8

YEAR: 1928

= 500'

N

EDR

APPENDIX C.3
ABSTRACT OF CITY DIRECTORIES

Integral Communities-SCV
28402 Bouquet Canyon Road
Santa Clarita, CA 91350

Inquiry Number: 5414520.5
September 11, 2018

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by
infoUSA®
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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☑	☑	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☑	EDR Digital Archive
1985	☑	☑	Haines Criss-Cross Directory
1980	☑	☑	Haines Criss-Cross Directory
1974	☑	☐	Haines Criss-Cross Directory
1971	☑	☐	Haines Criss-Cross Directory
1969	☑	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

28402 Bouquet Canyon Road
Santa Clarita, CA 91350

Year	*CD Image*	*Source*

BOUQUET CANYON RD

2014	pg A2	EDR Digital Archive
2010	pg A4	EDR Digital Archive
2005	pg A6	EDR Digital Archive
2000	pg A8	EDR Digital Archive
1995	pg A9	EDR Digital Archive
1992	pg A11	EDR Digital Archive
1985	pg A13	Haines Criss-Cross Directory
1980	pg A15	Haines Criss-Cross Directory
1974	pg A16	Haines Criss-Cross Directory
1971	pg A17	Haines Criss-Cross Directory
1971	pg A18	Haines Criss-Cross Directory
1969	pg A19	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
BENZ RD			
2014	pg. A1	EDR Digital Archive	
2010	pg. A3	EDR Digital Archive	
2005	pg. A5	EDR Digital Archive	
2000	pg. A7	EDR Digital Archive	
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	pg. A10	EDR Digital Archive	
1985	pg. A12	Haines Criss-Cross Directory	
1980	pg. A14	Haines Criss-Cross Directory	
1974	-	Haines Criss-Cross Directory	Street not listed in Source
1971	-	Haines Criss-Cross Directory	Street not listed in Source
1969	-	Haines Criss-Cross Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BENZ RD 2014

20733	CAVALLARO, JEFFREY V
20739	MILETI, DOLORES P
20740	CHARVES, KERRY C
20746	YOUNG SCOTT PAINTING
	YOUNG, LEE S
20747	PETRELLA, JAMES F
20752	ADRIAN, GEORGE B
20755	MEYER, ROY C
20803	TOLLSTRUP, RONALD
20812	MURPHY, DOUG D
20813	OCCUPANT UNKNOWN,
20818	OROZCO, ENRIQUE H
20819	CONROY, SHARON A
20825	PFAUCHT, LINDA L
20826	KIS, SHARON R
20831	MANSOUR, FYODOR W
20832	WILLIAMS, STEPHANIE A
20837	RUBIN, PERRY H
20842	NATOLI, ANTHONY L
20850	ANDERSON, BRADLEY D
20856	JOHNSON, RICHARD D
20862	OCCUPANT UNKNOWN,
20865	LANGE, THOMAS H
20868	SWOPE, WILLIAM B
20872	MACALINAO, VIRGILIO S
20873	LARMON, ROBERT C
20874	RIVAS, JESSE M

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

BOUQUET CANYON RD 2014

28100	BELLA TERRA REALTY
	BOUQUET SMILE DENTAL
	BRANDON THAI DDS INC
	COPPERHILL VALLEY LLC
	CRUZS BRIDAL INC
	FARMERS INSURANCE
	GLENOAKS INTERIORS INC
	J & J RODGERS CORP
	MONTEVERDE REALTY INC
	NEW HORIZON CONDOMINIUM ASSN
	RODGERS, JAMES C
	SAND CANYON PROPERTIES INC
	SANTA CLARITA VLY CLIMTE PROS
	SCV CLIMATE PROS
	SO CAL LIFE GOES ON INC
	WESTRDGE ESTTES NGHBRHOOD ASSN
28106	PLUM CLEANERS
28112	PARASHAR INDIAN KITCHEN
28118	HOME SHOPPE
	NOBLE LA
28124	CLOUD 9 VAPE PURE LLC
	WALLS LIZ
28200	ALL STAR SPORTS GRILL
	BOUQUET PLAZA LIQUOR
	C GORJUS HAIR DESIGNS
	DOLLAR DEPOT
	INVITATIONAL TAE KWON DO
	KIM STEVE
	LEIGH MICHAEL DDS
	MS MARGOS BEAUTY SERVICES
	SACHE INDIA E
	TEDDY BEAR PRESCHOOL
28402	SURACO, CHARLES W
28601	JACKSON, CHARLES B
28635	BUMBARGER, CHARLES W
28693	MA, MAU
28700	LOS ANGELES UNIFIED SCHOOL DST
28717	YOUTSLER, ERNEST
28735	ROWE, CHRISTOPHER L

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BENZ RD 2010

20733	CAVALLARO, JEFFREY V
20739	MILETI, DOLORES P
20740	CHARVES, KERRY C
20746	SCOTT YOUNG PAINTING
	SKY BLUE DISTRIBUTING
	YOUNG, LEE S
20747	PETRELLA, JAMES F
20752	ADRIAN, GEORGE B
20755	MEYER, ROY C
20803	OCCUPANT UNKNOWN,
20812	MIRKOVICH, T
20813	GARZA, FRED C
20818	RONGSTAD, MARK J
20819	CONROY, SHARON A
20825	PFAUCHT, LINDA L
20826	OCCUPANT UNKNOWN,
20831	MANSOUR, FYODOR W
20832	WILLIAMS, STEPHANIE A
20837	WHITE, ROBERT C
20850	ANDERSON, BRADLEY D
20856	JOHNSON, RICHARD D
20862	ERICKSON, CALVIN C
20865	LANGE, THOMAS H
20868	SWOPE, WILLIAM B
20872	MACALINAO, VIRGILIO S
20873	SWAYZE, MONAS B
20874	RIVAS, MARSELLA S

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

BOUQUET CANYON RD 2010

28100	AERIAL DYNAMICS CORPORATION
	AMIAN-GHS GROUP
	BI FASTRAK
	BOUQUET SMILE DENTAL
	CALIFORNIA FINCL & RLTY INC
	CANYON CREST GRNDA HILLS ASSOC
	CANYON PARK CARRIAGE HMS ASSOC
	CAPITAL GENERAL SERVICES
	COPPERHILL VALLEY LLC
	CRUZS BRIDAL INC
	FARMERS INSURANCE
	GONZALEZ J & ASSOCIATES
	J DALTON
	NEW HORIZON CONDOMINIUM ASSN
	NOBLE LA
	PHOTOGRAPHIC MEMORIES PORTRAIT
	SANTA CLARITA VLY CLIMTE PROS
	WESTRDGE ESTTES NGHBRHOOD ASSN
28106	PLUM CLEANERS
28112	CARMELA LOUISE INC
28118	TOKYO JAPANES LIFE STYLE
28124	ROCK CANDY MUSIC & MORE
28200	BOUQUET PLAZA LIQUOR
	C GORJUS HAIR DESIGNS
	CAMMARANOS BAR & GRILL
	CC BUSINESS 1
	DANCE IMPACT
	EL ITALIANO
	HOME LOANS UNLIMITED INC
	INVITATIONAL TAE KWON DO
	ISSAM HOURANY
	KIM STEVE SEUNG JUN
	LEIGH MICHAEL DDS
	LITALIANO
	MINNIE MAX CLEANERS
	MS MARGOS BEAUTY SERVICES
	SACHE INDIA E
	SALON LAZ
	TEDDY BEAR PRESCHOOL
28402	OCCUPANT UNKNOWN,
28601	JACKSON, CHARLES B
28635	BUMBARGER, CHARLES W
28693	LAWRENCE, R
	NILS LAWRENCE WEBSITE DESIGN
28700	LOS ANGELES UNIFIED SCHL DIST
28717	YOUTSLER ERNESTINE REAL ESTATE
	YOUTSLER, ERNEST
28735	CARSON L A
	CARSON, LA A

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BENZ RD 2005

20733	CAVALLARO, JEFFREY V
20739	MILETI, DOLORES
20740	CHARVES, KERRY C
20746	YOUNG, LEE S
20747	PETRELLA, JAMES F
20752	ADRIAN, GEORGE B
20755	MEYER, ROY C
20803	GUERRERO, DAVID R
20812	MURPHY, DOUG D
20813	GARZA, FRED C
20818	RONGSTAD, MARK J
20819	CONROY, SHARON A
20825	PFAUCHT, JOHN A
20826	BOUQUET LDSCP DESIGN & MAINT
	KIS, TIMOTHY S
20831	DVORAK, WILLIAM J
20832	WILLIAMS, STEPHANIE
20842	OCCUPANT UNKNOWN,
20856	OCCUPANT UNKNOWN,
20862	ERICKSON, CALVIN C
20865	LANGE, THOMAS H
20868	SWOPE, WILLIAM B
20872	MACALINAO, VIRGILIO S
20873	SWAYZE, MONAS H
20874	IGNACIO, YVONNE M

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

BOUQUET CANYON RD 2005

28048	APPRAISALS SANTA CLARITA SA
	BOUQUET CONSTRUCTION CO
	CARDINAL HEALTH INC
	DIGITAL AEROSPACE SOLUTIONS
	FABRICAS ORION
	JAY RODGERS INC
	MONTEVERDE REALTY INC
	PINNACLE SYSTEMS INC
28070	JG CONSTRUCTION
28084	AG STEWART APPRAISAL SERVICES
28094	VSPA SALON
28112	TWISTED FROZEN YOGURT
28200	BOUQUET PLAZA LIQUOR
	C GORJUS HAIR DESIGNS
	EL ITALIANO
	HOME LOANS UNLIMITED
	KEANEALLY ACUPUNCTURE
	LEIGH MICHAEL DDS
	LEIGH, MICHAEL
	LITALIANO
	PRIMO PIZZA SPORTS ZONE
	RELIEF PHYSICAL THERAPY INC
	SALON LAZ
	TEDDY BEAR PRESCHOOL
28402	SURACO, CHARLES W
28601	JACKSON, CHARLES B
28635	BUMBARGER, CHARLES W
28693	DUNN, LORI
28700	LA COUNTY OFFICE OF EDUCATION
28717	HATLER, ERNESTINE M
28735	CARSON, L A

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BENZ RD 2000

20733	CAVALLARO, JEFFREY
20740	CHARVES, KERRY C
20752	ADRIAN, GEORGE B
20755	OCCUPANT UNKNOWN,
20803	HINDIGIAN, DEREK R
20812	MURPHY, DOUG
20813	SCHAEFER, KELI A
20819	KEES, KATHY
20825	PFAUCHT, JOHN A
20826	KIS, SHARON
20831	OCCUPANT UNKNOWN,
20832	OCCUPANT UNKNOWN,
20837	OCCUPANT UNKNOWN,
20842	NATOLI, A L
20850	OCCUPANT UNKNOWN,
20856	LAURENTIS, J
20862	ERICKSON, CALVIN C
20865	LANGE, THOMAS H
20868	SWOPE, WILLIAM B
20872	MACALINAO, V S
20873	SWAYZE, M

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

BOUQUET CANYON RD 2000

27740 OCCUPANT UNKNOWN,
27757 BEAL, APRIL
SANTA CLARITA ACADEMY INC
27761 7-ELEVEN INC
27777 BOUQUET MOBIL SERVICE
28048 ALLSTATE INSURANCE COMPANY
BOUQUET CONSTRUCTION
CARDINAL HEALTH INC
DIGI-TEK GRAPHICS
FABRICAS ORION
GONZALES DAVE
J&J ROGERS CORP INC
MONTEVERDE REALITY INC
MUSAC INTERNATIONAL
RODGERS, JAMES
SPECIALTY RISK SERVICES
SUNRISE RIDGE
WIZARD INSURANCE AGENCY
28200 ATA TAEKWONDO USA
BOUQUET PLAZA LIQUOR
CORNERSTONE BIBLE CHURCH INC
JADE LABS INC
LEIGH MICHAEL DDS
LITALIANO
LOCK-OUT INC
TECHNOLOGY RX INC
TEMPCON INC
28402 SURACO, CHARLES W
28693 SHELLHART, RICHARD M
28700 LA COUNTY OFFICE OF EDUCATION
28705 COLVARD, BARBARA
28717 OCCUPANT UNKNOWN,
28735 CARSON, L A
28750 LA COUNTY PROBATION DEPARTMENT
LOS ANGELES CNTY OFFC EDCTN
LOS ANGELES COUNTY

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

BOUQUET CANYON RD 1995

27667	SUBWAY
27737	AUDIO VIDEO SALES AND SERVICES
	BEST CLEANERS
	BOUQUET BSBAL CDS CINS CLLECTB
	CALIFORNIA PRIDE FOODS INC
	JOY CHRISTIAN FELLOWSHIP
	KINDERGYM
	LITTLE CAESARS PIZZA PIZZA
	MODERN VIDEO
	MONITA BEAUTY SALON
	OAK TREE DELI & GRILL
	RETRO-SAFE INC
	TELLYS CHARBURGER INC
27757	SANTA CLARITA ACADEMY INC
27777	BOUQUET MOBIL SERVICE
28048	BOUQUET CONSTRUCTION
	BOUQUET CONSTRUCTION CO
	CONCRETE SYSTEMS INC
	J & J RODGERS CORP
	MONTEVERDE REALITY INC
	UNDERWRITERS LABORATORIES INC
	VINCENZOS PIZZA ESPERIENZA
28200	BOUGUET PLAZA LIQ
	BOUQUET PLAZA LIQUOR
	CANYON CENTER MANAGEMENT
	CORNERSTONE BIBLE CHURCH INC
	LEIGH MICHAEL DDS
	LITALIANO
	LOCK-OUT INC
	MERTES THOMAS DC
	TECHNOLOGY RX INC
	TEMPCON INC
28402	SURACO, CHARLES W
28601	JACKSON, M
28635	OCCUPANT UNKNOWNN
28693	SHELLHART, RICHARD M
28700	JOSEPH SCOTT CAMP SCHOOL
28717	LAWSON, MATTHEW J
28735	CARSON, L A
28750	KENYON SCUDDER HIGH SCHOOL

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BENZ RD 1992

20755 MEYER, ROY C
20803 SAWYER, THOMAS H
20812 HORLINGS, RICK
20819 KEES, K
20826 MUTAW, RICK
20831 NOE, ANTHONY
20842 NATOLI, A L JR
20856 TRIMBLE, TOM
20862 ERICKSON, CAL
20868 SWOPE, WILLIAM B
20872 GREENLAND CO
20874 FATTOUCH, ALFRED G

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

BOUQUET CANYON RD 1992

27667	SUBWAY
27701	BEST CLEANERS
27737	99 CENTS & UP BARGAIN STORE
	EXCLUSIVE HOG INC
	MODERN VIDEO
	NU IMAGE BEAUTY CENTRE
	OAK TREE DELI & GRILL
	RBW & ASSOCIATES
	SANTA FE CHARBROILER
	SPEEDWAY HOBBIES
	TELLYS CHARBROIL BURGERS
27757	KIDDIE KOLLEGE
28021	STEWART, CHARLES W
28048	MONTEVERDE DEVELOPMENT CO
	MONTEVERDE REALITY INC
28200	BOUGUET PLAZA LIQ
	CANYON CENTER MANAGEMENT
	LEIGH MICHAEL DDS
	LEIGH, MICHAEL
	V R 1 HOUR PHOTO
28402	SURACO, CHARLES W
28693	SHELLHART, RICHARD M
28700	JOSEPH SCOTT CAMP SCHOOL
28735	CARSON, L A
28750	KENYON-SCUDDER JUVENILE HALL
28785	LINTZ, RONALD W
28795	REYNOLDS, DONALD

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BENZ RD 1985

BENZ RD 91350 SAUGUS

20739	XXXX	00	
20740	XXXX	00	
20746	RYAN LAWRENCE E JR	251-9417	3
20747	HENDERSON MICHAEL G	251-1812	4
	SUNRISE ACSTC CLNG	992-4889	+5
20752	LOMBARDI AUGIE	251-0851	4
20755	MEYER ROY C	252-5265	0
20803	SAWYER THOS H	251-0959	0
20812	HORLINGS RICK	252-9200	4
20813	HILL THOS	252-1716	0
20819	KEES SCOTT	252-9489	0
20825	RICE MONTY G	251-6929	+5
20826	MUTAW RICHARD J	252-4816	0
20831	NOE ANTHONY	251-8451	+5
20837	EDSON RALPH D	252-6973	0
20842	NATOLI A L JR	252-7277	0
20850	HEINZE BERNIE	252-4799	0
20856	BROWN GARY A	251-0280	0
	BROWN KATHY	251-0280	
20862	ERICKSON CAL	251-2292	0
20865	UTLAUT MARK	251-0541	4
20868	MATTERA MICHAEL P	251-5186	0
20872	GREENLAND MADELON	251-5288	0
	GREENLAND SHELDON	251-5288	
20873	ARELLANO DEBBIE	252-9611	
	ARELLANO RALPH	252-9611	2
20874	CLELLAND IAN W	251-6381	

* 1 BUS 26 RES 3 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

BOUQUET CANYON RD 1985

27659	WHEELS UNLIMITED	255-5530	+5
27661	LAMPPOST PIZZA	259-7092	+5
27757	XXXX	00	
27761	SEVEN 11 FD 13896	252-1329	
27777	BOUQUET EXXON SERV	252-8686	
27787	US AGRI FOREST RNGR	252-9710	0
28402	SURACO CHAS W	252-8377	
28601	XXXX	00	
28693	KOKATAY KEDAR	252-2022	2
	SHELLHART RICHARD M	252-8793	+5
28700	LA CO PRBTN CAMPS	252-8111	2
	LA CO SUPT SC DTNTN	252-8444	2
28735	CARSON L A	252-8120	
	CARSON SQUAB RANCH	252-8120	
28750	LA CO PRBTN CAMPS	252-8811	2
	LA CO SUPT SC DTNTN	252-5957	2
28761	GRUPP THOMAS J	252-2215	
	GRUPP VICKI	252-2215	8

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BENZ RD 1980

+BENZ RD 91350 SAUGUS

20740	POTURALKSI DENNIS	252-3435 +0
20746	STOYANOFF LOUIS	252-7688 +0
20747	MCGREGOR THOS	252-5760 +0
20755	MEYER ROY C	252-5265 +0
20803	SAWYER THOS H	251-0959 +0
20812	GIRTON VIRGIL	251-5335 +0
20813	HILL THOS	252-1716 +0
20819	KEES SCOTT	252-9489 +0
20825	YOUNG JOHN E	252-2585 +0
20826	MUTAW RICHARD J	252-4816 +0
20837	EDSON RALPH D	252-6973 +0
20842	NATOLI A L JR	252-7277 +0
20850	HEINZE BERNIE	252-4799 +0
20856	BROWN GARY A	251-0280 +0
20862	ERICKSON CAL	251-2292 +0
20865	CARACCI L	251-3478 +0
	CARACCI MICHAEL	251-3450 +0
20868	MATTERA M P	251-5186 +0
20872	GREENLAND SHELDON	251-5288 +0
20873	DREW ROGER I	252-0698 +0

★ 0 BUS 20 RES 20 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

BOUQUET CANYON RD 1980

27000	BOUQUET BAPTIST CHR	255-0506	9
27405	STEVENS CO	255-8479	9
27500	C A RASMUSSEN CO	259-4383	9
27761	SEVEN ELEVEN 13896	252-1329	
	SUTTER MILL RETREAT	251-3225	8
	SUTTERS MILL	362-2660	9
27777	BOUQUET EXXON SERV	252-8686	3
27787	US AGRI FOREST SERV	252-9710	+0
28402	SURACO CHAS W	252-8377	
28601	XXXX	00	
28693	XXXX	00	
28700	CO LA PROBATION	252-8811	+0
	CO LA PROBATN SCOTT	252-8111	9
	CO LA SUPT OF SCHLS	252-8444	9
28735	CARSON L A	252-8120	
	CARSON SQUAB RANCH	252-8120	
28750	CO LA PROBATION	252-8811	9
	CO LA SUPT OF SCHLS	252-5957	9
28761	GRUPP THOMAS J	252-2215	8

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

BOUQUET CANYON RD 1974

26891 BEN-HUR MOBILE HOME
PARTS 255-7170
27000 BOUQUET BAPT CH 255-0506
27234 WATTS LABOR COMM ACTION
259-9560
27740 ZIMMERMAN K 252-8681
27761 SEVEN-ELEVEN 252-1329
27777 BOUQUET EXXON 252-8686
28402 SURACO CHAS 252-8377
28693 NICKLAS I 252-3174
28700 SUP'T OF SCHS 252-8444
28700 PROBATION DEPT 252-8111
28735 CARSON L 252-8120
28750 PROBATION DEPT 252-8811
28761 NO RETURN
28763 BENZ FRANK 252-1859

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

BOUQUET CANYON RD 1971

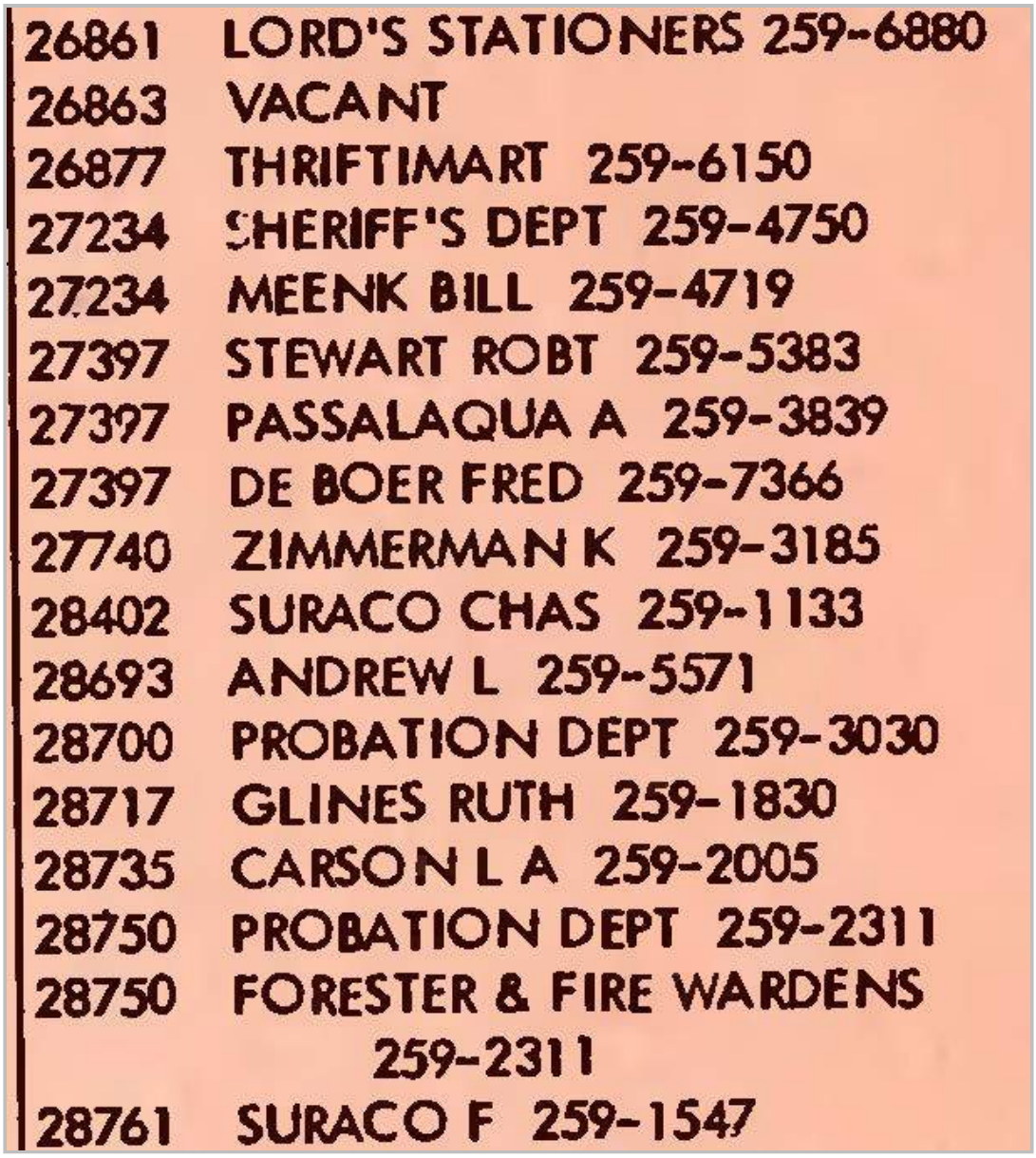
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

BOUQUET CANYON RD 1971

26891 TACO SIESTA 259-7226
27234 WATTS LABOR TRAINING CNTR 259-9729
BURNS SIDNEY 259-2051
27740 ZIMMERMAN K 252-8681
27761 SEVEN-ELEVEN FOOD STORE 252-1329
27777 ENCO SERV STA 252-9884
28402 SURACO CHAS W 252-8377
28700 JOSEPH SCOTT BOYS SCH 252-8444
PROBATION DEPT 252-8111
28735 CARSON L A 252-8120
28750 PROBATION DEPT 252-8811
28761 SURACO FLORENCE A
28763 BENZ CHARLES 252-8516
28765 BENZ GEORGE 252-8032
28785 VACANT

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

BOUQUET CANYON RD 1969



26861 LORD'S STATIONERS 259-6880
26863 VACANT
26877 THRIFTIMART 259-6150
27234 SHERIFF'S DEPT 259-4750
27234 MEENK BILL 259-4719
27397 STEWART ROBT 259-5383
27397 PASSALAQUA A 259-3839
27397 DE BOER FRED 259-7366
27740 ZIMMERMAN K 259-3185
28402 SURACO CHAS 259-1133
28693 ANDREW L 259-5571
28700 PROBATION DEPT 259-3030
28717 GLINES RUTH 259-1830
28735 CARSON L A 259-2005
28750 PROBATION DEPT 259-2311
28750 FORESTER & FIRE WARDENS 259-2311
28761 SURACO F 259-1547

APPENDIX C.4
HISTORICAL FIRE INSURANCE MAPS

Integral Communities-SCV
28402 Bouquet Canyon Road
Santa Clarita, CA 91350

Inquiry Number: 5414520.3
September 05, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

09/05/18

Site Name:

Integral Communities-SCV
28402 Bouquet Canyon Road
Santa Clarita, CA 91350
EDR Inquiry # 5414520.3

Client Name:

Ramboll
18100 Von Karman Avenue
Irvine, CA 92612
Contact: Stephanie Eckelman

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Ramboll were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # EB98-4716-A47B

PO # NA

Project Integral Communities

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: EB98-4716-A47B

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX D
PREVIOUS ENVIRONMENTAL REPORTS

Welex

INDUCTION • ELECTRIC LOG

COMPANY: GULF OIL CORP.
WELL: PAUL BENZ FEE #1
FIELD: WILDCAT
COUNTY: CHEROKEE STATE: KANSAS

LOCATION: 1980' FSL & 660' FEL OF SEC. 6, T. 35 S., R. 24 E.

Permanent Datum: GL Elev.: K.B. 1439
Log Measured From: K.B. 8 Ft. Above Perm. Datum
Drilling Measured From: K.B. D.F. 1435 G.L. 1431

| | | |

APPENDIX E
QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

FARSHAD RAZMDJOO

Managing Principal

Farshad Razmdjoo is the Managing Principal of Ramboll's Southwest and Pacific Northwest operations. He has over 30 years of experience in environmental consulting and engineering. Farshad currently manages a vast variety of consulting projects, including real estate and merger and acquisition due diligence, tenant environmental audits, environmental, health and safety audits, property decommissioning and redevelopment, remedial investigations, remedial action design and implementation, regulatory agency interaction, asbestos management programs, radon surveys, mold investigation and remediation programs and evaluations of lead in drinking water. In addition, he has developed and managed an environmental risk-management program for a major real estate investment trust. Farshad is highly experienced in working with federal and California environmental regulations and has a working knowledge of many other state and local regulatory requirements and agencies throughout the United States. Much of Farshad's past and current projects involve assessing environmental issues at commercial and industrial facilities throughout the North America, Europe, China, and India. For the past 24 years at Ramboll, Farshad has managed projects for representatives in real estate development companies, insurance companies, financial institutions, pension funds, institutional investors, private equities, real estate investment trusts, aerospace companies, industrial and manufacturing companies, and law firms.

CONTACT INFORMATION
Farshad Razmdjoo

frazmdjoo@ramboll.com
+1 (949) 7983609

Ramboll
18100 Von Karman Avenue
Suite 600
Irvine, CA 92612
United States of America

CAREER

2013-2018
Managing Principal, Ramboll US Corporation

2009-2013
Principal and Director of Operations, ENVIRON International Corporation

2000-2009
Principal, ENVIRON International Corporation

1993-2000
Senior Manager, ENVIRON International Corporation

1985-1993
Regional Manager & Senior Project Manager, Applied Geosciences Inc.

EDUCATION

1976-1981

BS, Civil Engineering

Thames Polytechnic, London

COURSES/CERTIFICATIONS

Nevada General Engineering License, 2017-2019
California General Engineering License, 1995-2015
Certificate in Hazardous Materials Management, University of Irvine, California, 1989-2015
National Registry of Environmental Professionals, 1988-2015

PROJECTS

2017-2018

Life Sciences Redevelopment Project

Assisted a client in performing a Phase I and a Phase II environmental site assessments and redevelopment of a property for a life sciences use in San Carlos, California.

1997-2018

Environmental Risk Management, Real Estate Investment Trust

Farshad has developed and managed an environmental risk management program for a major real estate investment trust (REIT). This REIT contained over 200 properties with 400 tenants with pharmaceutical and life science operations throughout the western and eastern United States, China, and India. As part of the environmental risk management program, an acquisition due diligence, an asbestos management program, a moisture intrusion and mold prevention response (MIMPR) program, and a tenant environmental audit (TEA) program were developed and implemented. A mold prevention and response plan, as outlined in the MIMPR, was prepared and implemented. More than 300 tenant exit audits for tenants vacating the properties were conducted in accordance with the TEA. An overall tenant environmental audit program has been developed.

1995-2018

Due Diligence, Merger/Acquisition, International Portfolios

Farshad has managed over 30 international multi-site environmental assessments at over 200 industrial, manufacturing, and commercial facilities as a part of merger and acquisition environmental due diligence. These included evaluation of aerospace component manufacturing facilities, automotive manufacturing and distribution facilities, medical device manufacturing facilities, telecommunication facilities, and hardware store facilities. Work plans and subsequent Phase II soil and groundwater investigations were also completed for many of those assignments.

1987-2018

Due Diligence, National Real Estate and Development

Acted as point of contact and responsible Principal for several national real estate and development clients with properties throughout the United States. Farshad has completed over 1000 assignments supporting the clients in acquiring, managing, and disposing properties. Many of these assignments were undertaken and successfully completed under extreme time constraints.

2011-2015

Due Diligence, Former Metal Stamping Facility

Managed the acquisition due diligence and subsequent redevelopment of a former metal stamping facility in Santa Fe Springs, California. Under Farshad's direction, a Phase I ESA was completed and, based on the findings of the Phase I ESA, a targeted Phase II subsurface investigation was performed to evaluate areas of potential environmental concern that included soil gas, soil, and groundwater sampling. Farshad also assisted the client with closure activities for the site that included performing an assessment of building materials for polychlorinated biphenyls contamination, coordination and oversight of asbestos and lead-based paint surveys, groundwater monitoring well abandonment, post excavation soil sampling on removal of various subsurface features, and preparation of a soil management plan (SMP), to be implemented during redevelopment activities. Subsequently, a no further action letter was obtained from the Santa Fe Springs Fire Department.

2007-2009

Due Diligence, Former Aerospace Facility

Directed the due diligence process and estimating environmental liabilities for acquisition of a former aerospace manufacturing facility in Los Angeles, California under extremely tight deadline. The site has been impacted with various VOCs, total petroleum hydrocarbons, metals, emerging chemicals, and radioactive wastes. The assignment also included evaluation of methane, asbestos, lead-based paint, and indoor air quality. The work was conducted on behalf of the site's buyer, which planned to develop it into a commercial business park.

2011-2015

Remediation, Manufacturing Facility

Negotiated with the Santa Ana Regional Water Quality Control Board (SARWQCB) a reasonable path forward for a former manufacturing facility located in Irvine, California where soil and groundwater is impacted with volatile organic compounds (VOCs). Historically, considerable remediation had been performed on site by other consultants, which included excavation, and above ground soil treatment, soil vapor extraction, and groundwater pump and treat technologies. The site has been in a post remediation monitoring phase under the oversight of the SARWQCB. Post remediation monitoring indicated that overall, natural attenuation processes were reducing VOC concentrations over time. However, in 2013, the SARWQCB requested the responsible parties to consider evaluating additional remedial options to reduce concentrations of VOCs in one area of the site. Also a Membrane Interface Probe (MIP) investigation was performed in that area of the site.

2013-2015

Remediation, Manufacturing Facility

Using the data collected during the MIP investigation, Farshad directed the development of a limited and focused remedial program utilizing state of the art technology appropriate for the restrictive conditions which are present in the area of the site investigated (challenging geologic materials, limited access due to occupied buildings, roadways, neighboring properties, etc.). The SARWQCB approved the remedial plan that included injection of zero valent iron into the shallow saturated zone to reduce VOCs in the area of concern. The remediation was completed during October and November 2014. A post monitoring program started in December 2014 is on-going.

2013-2015

Site Investigation

Directed the evaluation of potential off-site sources, and development of a site conceptual model for a facility in Vernon, California where chlorinated VOCs (CVOCs) were discovered in groundwater. Designed and managed investigation of soil, soil gas, and groundwater to evaluate potential sources, including use of compound-specific isotope analysis to help demonstrate that the CVOCs detected in soil gas are distinct from those detected in groundwater, and unrelated. Managed additional soil, soil gas, and groundwater investigation and provided oversight for a soil vapor extraction pilot test. All work is being implemented under the oversight of Los Angeles Regional Water Quality Control Board (LARWQCB).

2012-2013

Remediation Oversight, Former Industrial Facility

Assisted an owner of a former industrial facility in southern California that was significantly impacted by CVOCs in soil, soil gas, and groundwater. The scope of work included oversight of the remediation of the vadose zone with in situ thermal treatment and evaluation of human health risk assessments to assess various future redevelopment scenarios. The work was conducted under the oversight of the LARWQCB.

2007-2009

Site Characterization, Industrial Center

Designed and managed the implementation of site characterizations, remediation, and human health risk assessments for an existing 75-acre commercial and light industrial center in Irvine, California under the oversight of the Orange County Health Care Agency (OCHCA) and the SARWQCB. The work was conducted for the property owner and involved performing appropriate site characterization to define the extent of CVOC releases in soil, soil gas, and groundwater from prior and existing tenants; one of which included a dry cleaning facility. The human health risk assessment considered site specific conditions and data to define risk based threshold concentrations deemed as acceptable concentrations in soil, soil gas, and groundwater for indoor worker receptors.

2007-2009

Site Remediation, Industrial Center

Remediation involved injection of approximately 100,000 pounds of zero-valent iron in sixty direct push borings to create three separate permeable reactive barriers or treatment zones. Each zone will chemically reduce chlorinated solvents in the "shallow zone" groundwater as it migrates through the permeable reactive barrier(s). Due to the low groundwater concentrations, Farshad was able to negotiate the elimination of post remediation groundwater monitoring. The project also involved collection of sub-slab and indoor air samples followed by installation and operation of a sub-slab depressurization system and epoxy coating the interior floors to mitigate vapor intrusion. Post mitigation indoor air samples reported a reduction of indoor air concentrations by 100 times. Farshad successfully negotiated a "No Further Action" for the site with the concurrence from the SARWQCB.

2004-2005

Decontamination/Decommissioning, Former Biopharmaceutical Facility

Managed the decontamination and decommissioning of a former biopharmaceutical research facility. A detailed survey of over 250 rooms was conducted, and radiological materials, hazardous chemicals, and potentially biologically hazardous substances were identified. Upon completion of the decontamination/decommissioning, the entire facility was cleaned and prepared for re-occupancy. Throughout the decommissioning process, Ramboll Environ worked closely with State regulatory officials to demonstrate that all cleanup activities were in compliance with applicable regulations.

2000-2001

Remedial Investigation, Superfund Site

Managed a remedial investigation at a California Superfund site in Los Angeles County. The site was under a consent order from Cal-EPA Department of Toxic Substances Control at the time. The project involved performing RI/FS, conducting human health and ecological risk assessments, and preparing a remedial action plan.

1998

Phase I/Phase II Management, Industrial Park

Managed, reviewed, and evaluated numerous Phase I and II reports associated with the acquisition of a 500acre industrial park in Spokane, Washington. Prepared a report of findings including conclusions and recommendations for review by the client.

1997-1998

Site Closure, Dry Cleaning Facility

Managed the preparation of a sampling and analysis plan evaluating the nature and extent of soil and groundwater contaminated with tetrachloroethene (PCE) at a dry cleaning facility in Santa Ana, California. Ramboll Environ obtained closure for the site from the SARWQCB.

1997-1998

Litigation Support

Managed litigation support services related to the fate and transport of organic compounds in soil and groundwater, appropriate remedial alternatives, and cost associated for two facilities in southern California. The results of the evaluations were successfully used as part of the settlement negotiations with the opposing parties.

1996-1997

Site Assessments, Manufacturing Plants

Managed Phase I and II site assessments and estimation of remediation costs of six manufacturing plants in Costa Mesa (Orange County), Perris (Riverside County), Ontario (San Bernardino County), Somerton (Arizona), Alliance (Ohio), and Winter Heaven (Florida).

1996-1998

Site Investigation Program, Dry Cleaning Facility

Designed and managed a site investigation program to evaluate the nature and the extent of soil contaminated with PCE at a dry cleaning facility in Aliso Viejo, California. Based on the results, several remedial alternatives were evaluated and a risk assessment was performed. Based on the results of the risk assessment, site closure was obtained from OCHCA.

1994-1996

Remedial Investigation/Feasibility Study, Former Manufacturing Facility

Managed a remedial investigation/feasibility study (RI/FS) using CPT/HydroPunch and Geoprobe techniques, with installation of multi-level groundwater monitoring wells, evaluation and selection of a remedial alternative, and design and preparation of an interim remedial action plan for remediation of soil and groundwater contaminated with dense non-aquas phase liquid (DNAPL) at a former manufacturing facility in Oxnard, California. The first phase of remediation included the excavation and placement of approximately 11,000 cubic yards of impacted soil into vapor extraction cells for on-site treatment. Soil vapor and vertical and horizontal groundwater extraction wells were installed. The vapor and groundwater treatment systems included air stripping, ultra violet oxidation, and vapor and liquid granulated activated carbon. All work was conducted under oversight of LARWQCB and Ventura County Air Pollution Control District.

1994-1995

Groundwater Investigation, Electronic Manufacturing Plant

Managed a groundwater investigation program at a former electronics manufacturing plant in Santa Ana, California. This included installation, development, and sampling of shallow groundwater monitoring wells and evaluation and interpretation of hydrogeological and analytical data. The investigation was performed under the regulatory oversight of the SARWQCB.

PUBLICATIONS

2015

Evolution of a Conceptual Site Model Using Multimedia CSIA

Platform Presentation, AquaConSoil Conference, Copenhagen, Denmark. June 9-11, 2015
Authors: Rowe Devon, Serlin Carol, Razmdjoo Farshad, and Turner Seema

2015

An Evolving Conceptual Site Model Using Compound Specific Isotope Analysis.

Platform Presentation on Biennial Conference and 24th GRA Annual Meeting in Sacramento, California, October 6, 2015.
Authors: Rowe Devon, Serlin Carol, Razmdjoo Farshad, and Turner Seema

2014

Use of Stable Isotope Ratios of Soil Vapor and Groundwater Samples to Identify Additional Lines of Evidence for Source Evaluations.

Platform Presentation at Battelle Ninth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, May 2014.
Authors: Rowe Devon, Serlin Carol, Chandler Tom, Razmdjoo Farshad, and Turner Seema

2007

From Non-Linear Geostatistics to Scraper Grading: How to Minimize Excavation Costs for Site Re-Development

Platform presentation at The 17th Annual AEHS Meeting and West Coast Conference on Soils, Sediments and Water, March 10-13, 2007.
Authors: Achour, Farid and Razmdjoo Farshad.

MEMBERSHIPS

Auditing Roundtable
International Council of Shopping Centers
Environmental Assessment Association
National Registry of Environmental Professionals
Los Angeles County Bar Association
National Association of Industrial and Office Properties
Orange County Bar Association

REBEKAH J WALE

Managing Consultant

Rebekah Wale has more than 30 years of experience conducting and managing Phase I environmental site assessments and Phase II subsurface investigations. She is a senior practitioner in Ramboll's Merger & Acquisition Due Diligence practice. Her work has included conducting and/or managing numerous property transfer Phase I and Phase II investigations, property redevelopment, site and facility closure activities, California Class I and Class III landfill investigations, compliance groundwater monitoring, state and federal Superfund site assessments, underground storage tank assessments, and litigation support.

CAREER

1990-Present
Senior Manager, Ramboll
Environmental due diligence, Phase II subsurface investigations; prepare various reports, work plans, and results reports; manage clients and staff; coordinate with regulatory personnel.

1985-1990
Field Geologist, Hart Environmental Management Corporation
Perform Phase II subsurface investigations; prepare various reports, work plans, and results reports; oversee subcontractors manage clients.

PROJECTS

2005-2015
Due Diligence Manager
Managed hundreds of single and multiple property Phase I environmental site assessments at various locations throughout the United States and in other countries (e.g., Canada, Mexico, Europe, Asia, Africa).

2002-2004
Property Redevelopment Manager
Managed several property redevelopment projects of former aerospace facilities in Burbank, California. Responsible for preparing and implementing dust control plans, sampling plans, and health and safety plans during construction activities, and supervised construction personnel to ensure compliance with plans. Prepared weekly reports for submittal to the local agency.

CONTACT INFORMATION

Rebekah J Wale

rwale@ramboll.com
+1 (949) 7983693

Ramboll
18100 Von Karman Avenue
Suite 600
Irvine, CA 92612
United States of America

EDUCATION

1983-1985
MA, Environmental Science
Montclair State College
Montclair, New Jersey
United States

1979-1981
BS, Geology
Eastern Michigan University
Ypsilanti, Michigan
United States

2000
Litigation Support
Manager
Managed day to day activities in a large litigation support case involving an industrial facility. Assisted with preparation of expert opinions, including a cost allocation model.

1999-2015
Site Investigation
Manager
Managed numerous Phase II subsurface investigations related to property transfer projects; including soil gas surveys, soil sampling, grab groundwater sampling, and indoor air sampling.

Managed a large multi-phase remedial investigation at a testing facility in southern California. Responsible for coordinating and directing field staff, preparing technical memorandums and data transmittals, preparing large remedial investigation reports, and communicating and responding to regulatory agency personnel.

Designed and managed soil gas, soil, and ground water investigation programs at a plating facility near Los Angeles, California.

Managed several tasks associated with the sale of a hotel in Los Angeles, California, including underground storage tank removals and investigation of a dry cleaning plant in the hotel.

1998-2005
Property Development
Manager
Managed several property redevelopment projects of former aerospace facilities in Burbank, California. Responsible for preparing and implementing dust control plans, sampling plans, and health and safety plans during construction activities, and supervised construction personnel to ensure compliance with plans. Prepared weekly reports for submittal to the local agency.

1997-1998
Site Investigation
Manager
Managed several tasks associated with investigation and closure of an industrial facility in Los Angeles County, California, including sump removal and a soil boring and sampling program. Prepared sampling plans and results reports.

Designed and managed soil gas, soil, and ground water investigation programs at a shopping center property in Ventura County, California. Prepared sampling plans and results reports, participated in regulatory interaction.

Designed and manage a site investigation of a former dry cleaning facility in Orange County, California, that included soil gas, soil, and ground water sampling programs, and installation of a Soil Vapor Extraction (SVE) remediation system.

1994-1996
Site Investigation
Field Geologist
Managed a Phase II site investigation of an industrial facility in Commerce, California. Prepared a sampling plan, supervised soil boring and sampling activities, reported findings, and participated in regulatory interaction.

Supervised the drilling of soil borings and collected soil samples at a metals recycling facility in Los Angeles, California. Prepared a report on remedial options for soils.

Supervised the installation of five deep aquifer monitoring wells drilled as part of a regional ground water contamination study in northern California.

1993-1995
Geologic Evaluation
Researched and evaluated three properties in the Imperial Valley with regard to geologic, seismic, and flood hazards. The properties were being considered as potential industrial facility sites.

Researched and evaluated the landslide potential of a property for a private client in Los Angeles, California.

1990-2004
Routine Monitoring
Manager
Conducted an evaluation of ground water sampling practices and prepared an environmental technician training seminar for a Class III landfill in Orange County, California.

Managed a large regional quarterly ground water monitoring compliance program in a municipality in Los Angeles County, California. Responsible for oversight of field staff and regulatory compliance. Prepared quarterly monitoring reports.

Managed a large quarterly ground water monitoring compliance program at a Class I landfill in California. Responsible for oversight of field staff and regulatory compliance. Prepared quarterly monitoring reports.

1988-1994
Site Investigation
Field Geologist
Prepared cross sections and isopach maps for several sites as part of a regional ground water study in northern California.

Participated in step-testing and a long-term pumping test of a shallow well at a chemical manufacturing facility.

Managed two multiphased ECRA projects at large industrial facilities in northern New Jersey for a Fortune 100 company. Directed implementation of multiple sampling plans involving soil borings; well installation; ground water, soil, sediment and air sampling; geophysical logging; and aquifer (packer) testing.

1988-1991
Site Investigation
Prepared a site-wide Sampling and Analysis Plan for a Class III landfill in southern California.

Provided technical field oversight services to a group of PRPs at a landfill under investigation in New Jersey.

Provided closure activities at a stamping facility in Alabama, including installing overburden and cored bedrock wells, and conducting ground water and potable well sampling and a soil investigation (soil gas survey and soil sampling).

Assisted with rock coring and the installation of bedrock wells at an incinerator fabrication facility in Pennsylvania. Also participated in slug testing the wells.

Directed an expansion investigation in New Jersey for a warehouse facility that was formerly part of a municipal landfill. Oversaw soil borings and soil sampling, monitoring well installation, and ground water sampling. Prepared sampling results reports, including recommended remedial options and strategic planning.

1986-1988
Site Investigation
Managed three multifaceted site investigations for a gas station chain/fuel transfer facility company in New Jersey. Prepared sampling plans, supervised tank and soil removal and well installation and sampling efforts, completed permit applications for both sites, prepared reports of findings, and provided remedial recommendations.

Managed a planned subdivision site in New Jersey located adjacent to a gasoline spill area. Prepared sampling plans and results reports, supervised a soil gas survey and soil sampling activities, and participated in local government meetings to obtain approvals for building at the site.

Managed a major ECRA investigation of a dye and pigment manufacturing facility in New Jersey. Prepared sampling plans; drilled and sampled soil borings; conducted ground water sampling, pump-in (pressure) testing, discrete interval sampling (packer testing); and oversaw test pit construction and downhole geophysical logging.

1985-1986
Site Investigation
Field Geologist
Managed a multiphased ECRA investigation at an electric motor repair plant in New Jersey. Installed overburden and bedrock wells, collected soil and ground water samples, and oversaw soil excavation activities. Negotiated for off-site access. Planned and implemented aquifer testing through a series of short duration step tests, followed by a 72-hour pumping test.

Conducted potable well and surface water sampling at four Superfund asbestos disposal sites in New Jersey. Prepared sampling results report.

Assisted with rock coring and the installation of bedrock wells at an incinerator fabrication facility in Pennsylvania. Also participated in slug testing the wells.

Assisted in the remedial investigation of a metals-contaminated soils problem in Colorado, including grid layout, soil sample collection, test pit construction, and soil mapping.

RAMBOLL

ENVIRONMENT & HEALTH

STEPHANIE T ECKELMAN

Senior Consultant 1

Stephanie Eckelman has been an environmental consultant for 12 years. She has conducted soil, groundwater, and soil vapor investigations for Phase II and groundwater monitoring programs. Stephanie has conducted many ASTM Phase I environmental and due diligence site assessments of commercial, industrial and residential properties.

EDUCATION

1994-1999
BS, Environmental Studies
State of New York College of Environmental Sciences and Forestry, Syracuse, United States

COURSES/CERTIFICATIONS

OSHA 40-hour Hazardous Waste Operations and Emergency Response Standard - HAZWOPER, 2000-2016

LANGUAGE SKILLS

English

PROJECTS

2017-2018
NE Corner Victoria St/Central, Carson RAP
The Carson Project Owner, LLC, United States
Ramboll prepared a Human Health Risk Assessment, condusted a statistical eval on distribution of chemicals, prepared a Remedial Action Plan and provided project management, attended meetings, and provided estimated costs for site remediation

2015->>>
Assisted with the creation and implementation of a remedial action plan (RAP)for a facility in South Los Angeles; and

2015->>>
Created and implemented new boring log templates and reports for numerous large scale projects.

CONTACT INFORMATION

Stephanie T Eckelman

seckelman@ramboll.com
+1 (213) 9436317

Ramboll
350 S Grand Avenue
Suite 2800
Los Angeles, CA 90071
United States of America

2015->>>
Performed site investigations under the scrutiny of the Department of Toxic Substances Control, and Regional Water Quality Control Board, including former Underground Storage Tank sites;

2015->>>
Researched and prepared report detailing various Urban Water Management Plans in the Central Basin;

2015->>>
Experience with a variety of chemicals including total petroleum hydrocarbons (TPH), BTEX, chlorinated solvents, and pesticides at chemical and manufacturing facilities, and automobile service facilities throughout southern California for municipal, manufacturing, and commercial clients;

2015->>>
Conducted Storm Water Pollution Prevention Plan monitoring including pre- and post-storm surface inspection on a large oil field;

2018
Black Equities Warner Ctr Phase I
Black Equities Group Ltd., United States
Ramboll conducted a Phase I ESA for the northwestern portion of a property (former Northrop Grumman facility "Parcel A") located at 5500 Canoga Ave and 21240 Burbank Blvd, Woodland Hills, CA, referred to by the client, Black Equities Group, as the Warner Center Project.

2017-2018
Baker: SSF Add. Site Investigation
Baker Properties, Inc., United States
Ramboll Environ conducted a soil, soil vapor, groundwater, and indoor air investigation at 160-180 Sylvester Road, South San Francisco, CA.

2017-2018
KS: Home Depot - LBP - California
The Home Depot, United States
Ramboll Environ assisted in connection with an investigation involving Home Depot's renovation projects in homes that may have contained lead based paint.

2006-2011
Whittaker Bermite
Conducted soil sampling, surface water runoff sampling, groundwater sampling, soil vapor sampling and groundwater pump tests at a 1000-acre property;

2002-2009
Pentair Pool Products
Prepared and submitted Wastewater Treatment Surcharge Statements and tracked Wastewater Treatment Surcharge Quartely Reports for a facility in South Los Angeles;

2001
Disney
Managed well decommissioning, including permitting, for deep wells for various municipalities;

2000-2015
Various Projects
Completed soil sampling, groundwater monitoring, plume tracking, submittal to the Regional Water Quality Control Board GeoTracker™ website, permitting for a volatile organic compound--contaminated property;

2000-2015
Various Projects
Prepared ASTM Phase I reports, including site visits, agency records reviews, and aerial photograph reviews on numerous properties including manufacturing, commercial retail properties, defense-related facilities;

2000-2015
Various Projects
Implementing and reporting on subsurface field investigation work plans and managing site investigations and site assessments;

Appendix F:
Phase I Environmental Site Assessment

Part 2: Soil Sampling Results Report

RAMBOLL

ENVIRONMENT
& HEALTH

Mr. Scott C. Covington
Vice President, Land Acquisitions
Integral Communities
888 San Clemente Drive
Suite 100
Newport Beach, California 92660

RESULTS OF LIMITED SOIL SAMPLING
ASSESSOR'S PARCEL NUMBER 2812-008-022
SANTA CLARITA, CALIFORNIA

December 13, 2018

Ramboll
5 Park Plaza
Suite 500
Irvine, CA 92614
USA

T +1 949 261 5151
F +1 949 261 6202
www.ramboll.com

Dear Scott:

This report presents the results of recent soil sampling conducted by Ramboll US Corporation (Ramboll) on a portion of a larger property being redeveloped for residential use, specifically, Assessor's Parcel Number 2812-008-022, located on Bouquet Canyon Road in Santa Clarita, Los Angeles, California ("site;" see Figure 1). As requested, limited soil sampling was conducted to evaluate concentrations of pesticides and arsenic in a select area of the site.

BACKGROUND

As you are aware, Ramboll performed a Phase I environmental site assessment (ESA) of the site in September 2018. According to the 2018 Phase I ESA, a portion of APN 2812-008-022 previously was used for cultivated cropland purposes from at least 1928 until the 1980s. Details regarding the historical use of agricultural chemicals such as pesticides were unknown. Based on the redevelopment plan for this area as provided to Ramboll by Integral Communities, it appears that portions of the proposed development, specifically, PA-2 ("bungalow") and PA-4 ("row"), are within the historical cultivated cropland use area (APN 2812-008-022). PA-2, which appears to be approximately 4 acres in size, will be developed as "small-lot detached homes." These will be condominiums but depending on the lot location, certain of the lots will have small courtyards or side yards. PA-4 will be attached units with no yards. Based on this information, and the potential for small courtyards or side yards to be present in PA-2, which is within the historical cultivated cropland use area, limited soil sampling for pesticides and arsenic was performed for this area.

SCOPE OF WORK

Ramboll implemented the approved scope of work for the additional soil sampling on November 7, 2018. Sampling activities were conducted by Ramboll field personnel working under the supervision of a California Registered Professional Geologist, in

accordance with a site-specific Health and Safety Plan. Soil sampling was conducted in general accordance with the California Department of Toxic Substances Control (DTSC) Interim Guidance for Sampling Agricultural Fields (3rd Revision) dated August 7, 2008 (the "Interim Guidance"). As per sampling location recommendations listed in Table 1 of the Interim Guidance, eight soil sampling locations were selected (Figure 2).

Ramboll advanced soil borings at the eight locations, SS-01 through SS-08, as depicted on the attached Figure 2. The samples were located on a grid pattern overlying the former cultivated cropland use area, approximately 100 feet apart. All eight soil borings were advanced to approximately 0.5 feet below ground surface (bgs). Soil samples were collected in stainless steel sleeves via a manually operated slide hammer, sealed, labeled, placed in a closed cooled container, and delivered to a California State-certified laboratory under standard chain-of-custody procedures for subsequent analysis.

Prior to each use and reuse, soil-sampling equipment was cleaned using an Alconox wash and clean water rinse and allowed to air dry. After completion of sampling, the soil borings were backfilled with native soil. Boring location coordinates were recorded using a Trimble Global Positioning System (GPS) model GeoXH6000.

Soil samples were analyzed for the following compounds:

- Organochlorine pesticides, in accordance with United States Environmental Protection Agency (USEPA) Method 8081A and;
- Arsenic, in accordance with USEPA Method 6010B.

Laboratory reporting limits were below the applicable USEPA Region IX regional screening levels (RSLs) for soil in a residential land use scenario. A summary of the analytical results is provided on Table 1 and the complete laboratory data package is included in Attachment A.

ANALYTICAL RESULTS AND DISCUSSION

Analytical results indicted the presence of the following compounds in the soil samples collected at the site (Table 1):

- 4,4'-Dichlorodiphenyldichloroethylene (DDE) – detected in one soil sample (SS-08) at a concentration of 151 micrograms per kilogram (µg/kg). The RSL for 4,4-DDE is 2,000 µg/kg.
- 4,4'-Dichlorodiphenyltrichloroethane (DDT) – detected in one soil sample (SS-08) at a concentration of 15.3 µg/kg. The current RSL for 4,4-DDT is 1,900 µg/kg.
- Arsenic – detected in all but one of the soil samples analyzed at concentrations ranging from 3.20 milligrams per kilogram (mg/kg) to 6.43 mg/kg. The current RSL for arsenic is 0.68 mg/kg.

Analytical results for soil samples collected were compared to USEPA RSLs in a residential land use scenario; neither of the detected concentrations of pesticides were detected at concentrations that exceeded the respective USEPA RSLs in a residential land use scenario.

All detected concentrations of arsenic exceeded the USEPA RSL for arsenic in a residential land use scenario. Arsenic is a naturally occurring metal in soil and tends to be present in native California soils at

concentrations that exceed applicable regulatory thresholds. According to one source,[1] the average concentration of arsenic detected in California soils is 3.5 mg/kg (with a minimum detection of 0.6 mg/kg and a maximum detection of 11.0 mg/kg in the samples collected for this study); in a second source,[2] naturally-occurring arsenic was detected in California soils at concentrations ranging from 0.3 mg/kg to 69 mg/kg. A third study specific to Southern California soils,[3] and based on statistical analysis of a large data set from school facilities in Los Angeles County, gave an upper-bound background arsenic concentration of 12 mg/kg. In addition, detected concentrations of arsenic are consistent among all the samples collected. Therefore, it is Ramboll's opinion that detected arsenic in soils at the site is naturally occurring.

Based on the foregoing, it is Ramboll's opinion that further assessment and/or remediation of the soils in the former cultivated cropland use area at the site is not warranted; however, Ramboll recommends that dust control measures consistent with South Coast Air Quality Management District Rule 403 be implemented during redevelopment of the site.

CLOSURE

Ramboll appreciates the opportunity to continue to assist Integral Communities on this project. If you have any questions, please contact the undersigned.

Very truly yours,

Farshad Razmdjoo
Managing Principal

D 949.798.3609
frazmdjoo@ramboll.com

Rebekah J. Wale, PG
Senior Managing Consultant

D 949.798.3693
rwale@ramboll.com

Stephanie Eckelman
Senior Consultant

D 213.943.6317
seckelman@ramboll.com

RW:gw

Attachments

[1] Background Concentrations of Trace and Major Elements in California Soils, Kearney Foundation of Soil Science, March 1996.

[2] Elements in North American Soils, James Dragun, PhD, and Andrew Chiasson, 1991.

[3] Determination *of a Southern California Regional Background Concentration*, California, Department of Toxic Substances Control, undated.

TABLE

Table 1. Summary of Organochlorine Pesticides and Arsenic in Soil Samples
APN #2812-008-022
Bouquet Canyon Road
Santa Clarita, California

Sample Location	Boring Location/ Sample I.D.	Sample Depth (ft bgs)	Sample Date	Organochlorine Pesticides		Arsenic
				4,4-DDT	4,4-DDE	
Units				**µg/kg**		**mg/kg**
USEPA Regional Screening Level[1]				1,900	2,000	0.68
SS-01	SS-01-11082018	0.5	11/07/2018	<8.0	<8.0	**4.85**
SS-02	SS-02-11082018	0.5	11/07/2018	<8.0	<8.0	<2.0
SS-03	SS-03-11082018	0.5	11/07/2018	<8.0	<8.0	**4.66**
SS-04	SS-04-11082018	0.5	11/07/2018	<8.0	<8.0	**3.30**
SS-05	SS-05-11082018	0.5	11/07/2018	<8.0	<8.0	**3.20**
SS-06	SS-06-11082018	0.5	11/07/2018	<8.0	<8.0	**6.43**
SS-06D	SS-06D-11082018	0.5	11/07/2018	<8.0	<8.0	**5.66**
SS-07	SS-07-11082018	0.5	11/07/2018	<8.0	<8.0	**3.58**
SS-08	SS-08-11082018	0.5	11/07/2018	**15.3**	**151**	**4.44**

Notes:
Samples analyzed for organochlorine pesticides by modified USEPA Method 8081A and for arsenic by USEPA Method 6010B.

Bold - detections above laboratory reporting limit

ft bgs - feet below ground surface

mg/kg - milligrams per kilogram

µg/kg-micrograms per kilogram

USEPA - United States Environmental Protection Agency

DDE-Dichlorodiphenyldichloroethylene

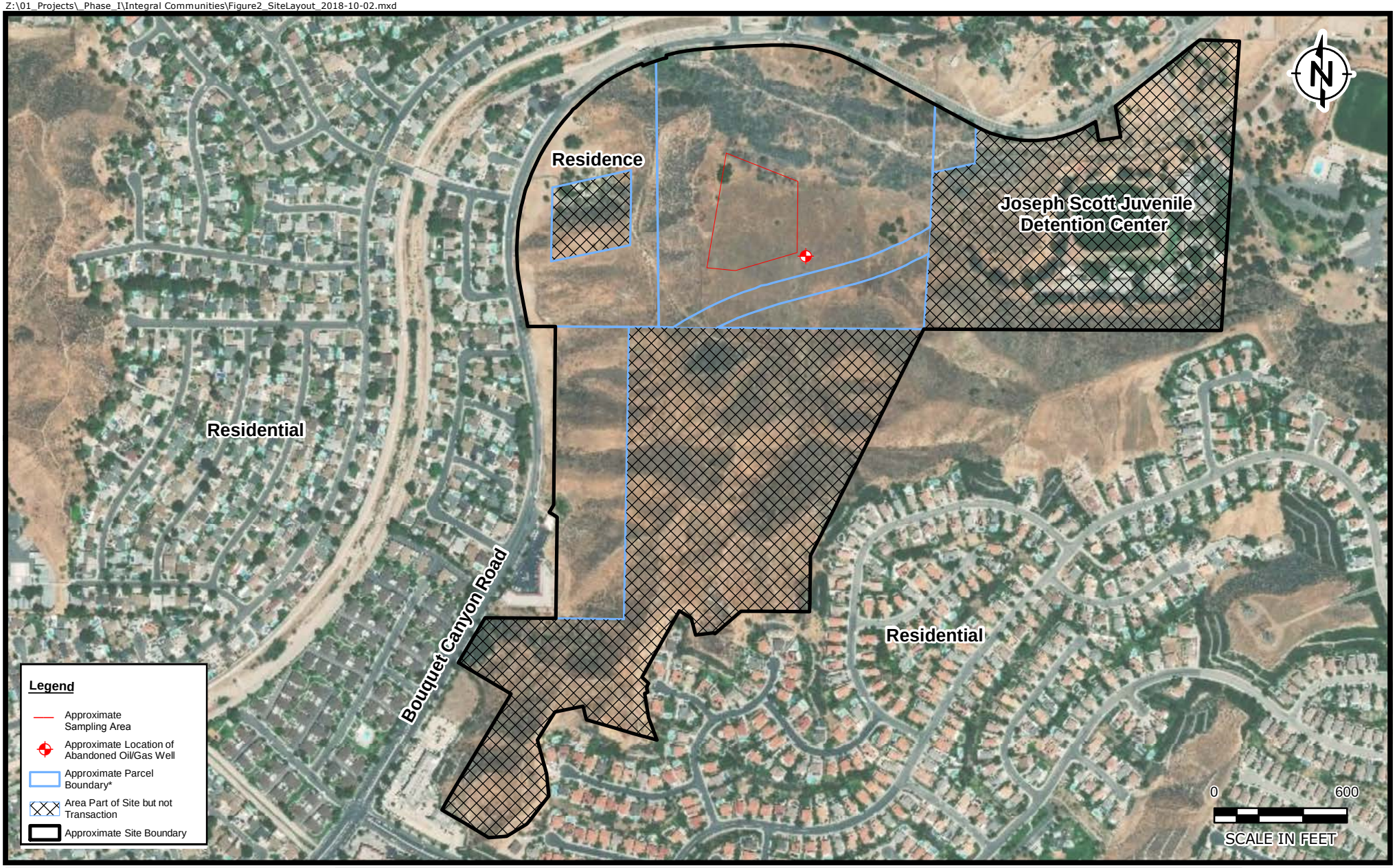
DDT-Dichlorodiphenyltrichloroethane

Only compounds reported above the laboratory reporting limit are shown.

<X - not detected above laboratory reporting limit
[1]-USEPA Regional Screening Level (RSL) for soil in a residential land use scenario (November 2018)

FIGURES

Z:\01_Projects_Phase_I\Integral Communities\Figure2_SiteLayout_2018-10-02.mxd



RAMBOLL

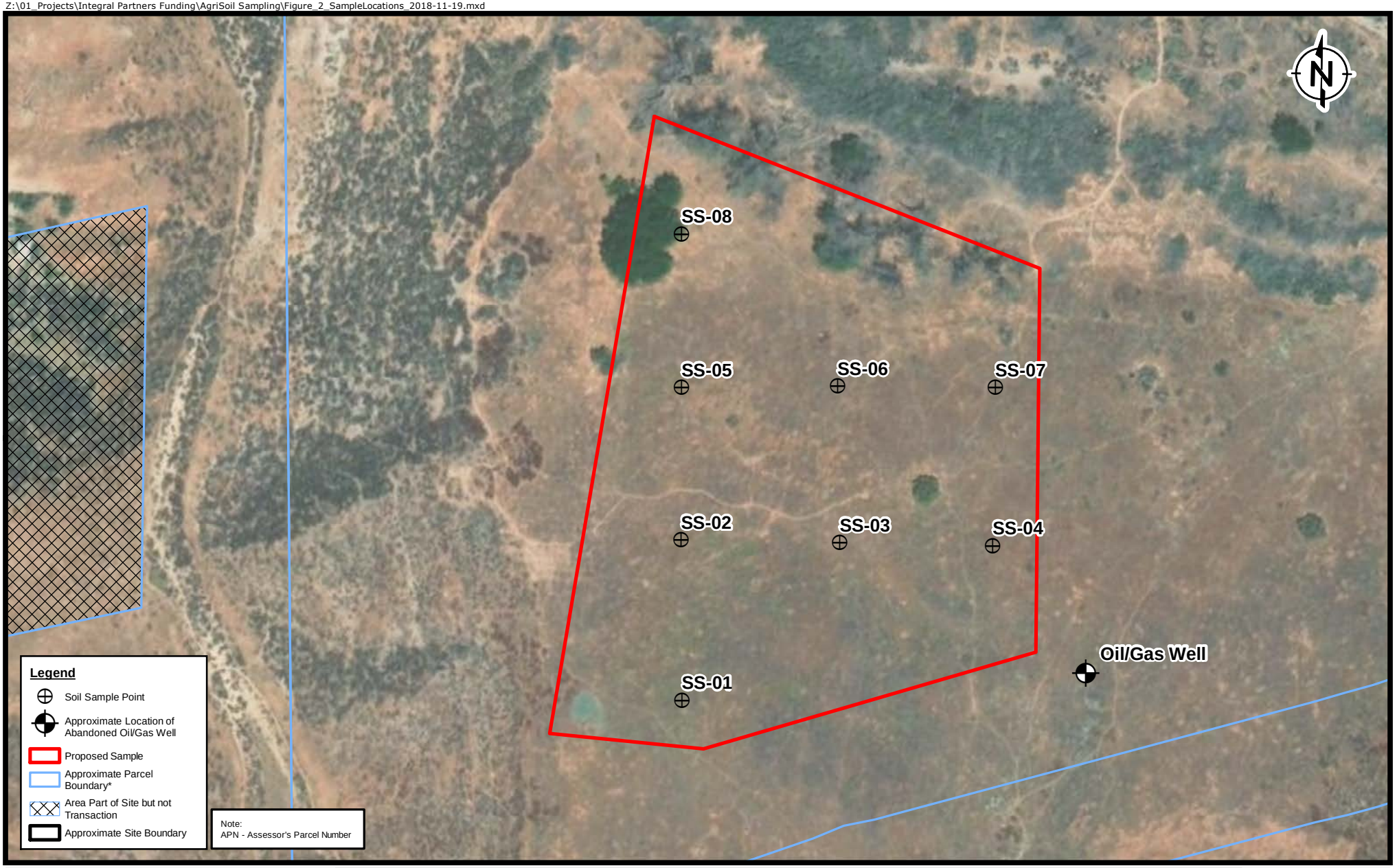
Site Layout

Integral Communities
Assessor Parcel Number (APN) 2812-008-022 on Bouquet Canyon Road
Santa Clarita, California

FIGURE
1

DRAFTED BY: J. KING | DATE: 10/3/2018 | PROJECT: 1690009953

Z:\01_Projects\Integral Partners Funding\AgriSoil Sampling\Figure_2_SampleLocations_2018-11-19.mxd



RAMBOLL

DRAFTED BY: J. KING | DATE: 11/19/2018

Soil Sample Locations

Integral Communities
Assessor's Parcel Numbers (APN) 2812-008-022 on Bouquet Canyon Road
Santa Clarita, California

FIGURE
2

PROJECT: 1690009953

ATTACHMENT A
LABORATORY ANALYTICAL DATA

POSITIVE
LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

November 15, 2018

Ms. Rebekah Wale
Ramboll - Los Angeles
350 South Grand Avenue, Suite 2800
Los Angeles, CA 90017

Report No.: 1811083
Project Name: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21
WO# WO-2018-293

Dear Ms. Rebekah Wale,

This report contains the analytical results for the sample(s) received under chain of custody(s) by Positive Lab Service on November 08, 2018.

The test results in this report are performed in compliance with ELAP accreditation requirements for the certified parameters. The laboratory report may not be produced, except in full, without the written approval of the laboratory.

The issuance of the final Certificate of Analysis takes precedence over any previous Preliminary Report. Preliminary data should not be used for regulatory purposes. Authorized signature(s) is provided on final report only.

If you have any questions in reference to this report, please contact your Positive Lab Service coordinator.

Project Manager

POSITIVE LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

Certificate of Analysis

Ramboll - Los Angeles
350 South Grand Avenue, Suite 2800
Los Angeles, CA 90017

Attn: Ms. Rebekah Wale Phone: (213) 943-6300 FAX:(213) 943-6301

File #:73306
Report Date: 11/15/18
Submitted: 11/08/18
PLS Report No.: 1811083

Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Sample ID: SS-01-11082018 Soil (1811083-01) Sampled:11/07/18 08:04 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
4,4'-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
4,4'-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
4,4'-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/12/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*66.1 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/12/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*73.9 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/12/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**4.85**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-02-11082018 Soil (1811083-02) Sampled:11/07/18 08:47 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319

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(213) 745-5312 FAX (213) 745-6372

Certificate of Analysis

Ramboll - Los Angeles
350 South Grand Avenue, Suite 2800
Los Angeles, CA 90017

Attn: Ms. Rebekah Wale Phone: (213) 943-6300 FAX:(213) 943-6301

File #:73306
Report Date: 11/15/18
Submitted: 11/08/18
PLS Report No.: 1811083

Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Sample ID: SS-02-11082018 Soil (1811083-02) Sampled:11/07/18 08:47 Received:11/08/18 13:08

Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*63.2 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*81.3 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	ND		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-03-11082018 Soil (1811083-03) Sampled:11/07/18 09:11 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*62.6 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*74.2 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**4.66**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-04-11082018 Soil (1811083-04) Sampled:11/07/18 09:30 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319

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(213) 745-5312 FAX (213) 745-6372

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Ramboll - Los Angeles
350 South Grand Avenue, Suite 2800
Los Angeles, CA 90017

Attn: Ms. Rebekah Wale Phone: (213) 943-6300 FAX:(213) 943-6301

File #:73306
Report Date: 11/15/18
Submitted: 11/08/18
PLS Report No.: 1811083

Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Sample ID: SS-04-11082018 Soil (1811083-04) Sampled:11/07/18 09:30 Received:11/08/18 13:08

Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*61.5 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*78.1 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**3.30**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-05-11082018 Soil (1811083-05) Sampled:11/07/18 10:00 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*62.4 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*76.7 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**3.20**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-06-11082018 Soil (1811083-06) Sampled:11/07/18 10:38 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319

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Los Angeles, CA 90017

Attn: Ms. Rebekah Wale Phone: (213) 943-6300 FAX:(213) 943-6301

File #:73306
Report Date: 11/15/18
Submitted: 11/08/18
PLS Report No.: 1811083

Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Sample ID: SS-06-11082018 Soil (1811083-06) Sampled:11/07/18 10:38 Received:11/08/18 13:08

alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*60.6 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*90.2 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**6.43**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-06D-11082018 Soil (1811083-07) Sampled:11/07/18 10:43 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4'-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319

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781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

Certificate of Analysis

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350 South Grand Avenue, Suite 2800
Los Angeles, CA 90017

Attn: Ms. Rebekah Wale Phone: (213) 943-6300 FAX:(213) 943-6301

File #:73306
Report Date: 11/15/18
Submitted: 11/08/18
PLS Report No.: 1811083

Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Sample ID: SS-06D-11082018 Soil (1811083-07) Sampled:11/07/18 10:43 Received:11/08/18 13:08

Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*62.3 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*73.3 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**5.66**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-07-11082018 Soil (1811083-08) Sampled:11/07/18 11:06 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDE	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDT	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*63.9 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*81.1 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**3.58**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

Sample ID: SS-08-11082018 Soil (1811083-09) Sampled:11/07/18 11:30 Received:11/08/18 13:08

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Aldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
beta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
delta-BHC	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-BHC (Lindane)	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
alpha-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
gamma-Chlordane	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDD	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDE	**151**		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
4,4´-DDT	**15.3**		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Dieldrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan I	ND		1	ug/kg	8.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319

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781 East Washington Blvd., Los Angeles, CA 90021
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Certificate of Analysis

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Los Angeles, CA 90017

Attn: Ms. Rebekah Wale Phone: (213) 943-6300 FAX:(213) 943-6301

File #:73306
Report Date: 11/15/18
Submitted: 11/08/18
PLS Report No.: 1811083

Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Sample ID: SS-08-11082018 Soil (1811083-09) Sampled:11/07/18 11:30 Received:11/08/18 13:08

Endosulfan II	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endosulfan sulfate	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Technical Chlordane	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin aldehyde	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Endrin ketone	ND		1	ug/kg	12.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Heptachlor epoxide	ND		1	ug/kg	4.00	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Methoxychlor	ND		1	ug/kg	20.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Toxaphene	ND		1	ug/kg	60.0	EPA 3550C	EPA 8081A	11/12/18	11/13/18	ai	BK81319
Surrogate: 2,4,5,6 Tetrachloro-m-xyler.	*63.8 %*			*55-126*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*
Surrogate: Decachlorobiphenyl	*80.0 %*			*49-133*		*EPA 3550C*	*EPA 8081A*	*11/12/18*	*11/13/18*	*ai*	*BK81319*

Analyte	Results	Flag	D.F.	Units	PQL	Prep/Test Method		Prepared	Analyzed	By	Batch
Arsenic	**4.44**		1	mg/kg	2.00	EPA 3050B	EPA 6010B	11/09/18	11/09/18	AM	BK81237

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File #:73306
Report Date: 11/15/18
Submitted: 11/08/18
PLS Report No.: 1811083

Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Quality Control Data

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch BK81319 - EPA 3550C										
Blank	**Prepared & Analyzed: 11/12/18**									
Aldrin	ND	2.00	ug/kg							
alpha-BHC	ND	2.00	ug/kg							
beta-BHC	ND	2.00	ug/kg							
delta-BHC	ND	2.00	ug/kg							
gamma-BHC (Lindane)	ND	2.00	ug/kg							
alpha-Chlordane	ND	2.00	ug/kg							
gamma-Chlordane	ND	2.00	ug/kg							
4,4´-DDD	ND	2.00	ug/kg							
4,4´-DDE	ND	4.00	ug/kg							
4,4´-DDT	ND	4.00	ug/kg							
Dieldrin	ND	2.00	ug/kg							
Endosulfan I	ND	4.00	ug/kg							
Endosulfan II	ND	2.00	ug/kg							
Endosulfan sulfate	ND	2.00	ug/kg							
Endrin	ND	2.00	ug/kg							
Technical Chlordane	ND	10.0	ug/kg							
Endrin aldehyde	ND	2.00	ug/kg							
Endrin ketone	ND	6.00	ug/kg							
Heptachlor	ND	2.00	ug/kg							
Heptachlor epoxide	ND	2.00	ug/kg							
Methoxychlor	ND	10.0	ug/kg							
Toxaphene	ND	30.0	ug/kg							
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*8.15*		ug/kg	*12.50*		*65.2*	*55-126*			
Surrogate: Decachlorobiphenyl	*7.40*		ug/kg	*12.50*		*59.2*	*49-133*			
LCS	**Prepared & Analyzed: 11/12/18**									
Aldrin	7.83	2.00	ug/kg	10.00		78.3	56-130			
gamma-BHC (Lindane)	6.86	2.00	ug/kg	10.00		68.6	56-133			
4,4´-DDT	6.25	4.00	ug/kg	10.00		62.5	56-133			
Dieldrin	7.50	2.00	ug/kg	10.00		75.0	62-119			
Endrin	6.97	2.00	ug/kg	10.00		69.7	59-127			
Heptachlor	6.80	2.00	ug/kg	10.00		68.0	55-110			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*8.81*		ug/kg	*12.50*		*70.5*	*54-108*			
Surrogate: Decachlorobiphenyl	*8.91*		ug/kg	*12.50*		*71.3*	*54-127*			
Matrix Spike **Source: 1811083-01**	**Prepared: 11/12/18 Analyzed: 11/13/18**									
Aldrin	7.53	4.00	ug/kg	10.00	ND	75.3	39-124			
gamma-BHC (Lindane)	5.68	4.00	ug/kg	10.00	ND	56.8	44-120			
4,4´-DDT	13.7	8.00	ug/kg	25.00	ND	54.9	48-150			
Dieldrin	16.4	4.00	ug/kg	25.00	ND	65.5	48-144			
Endrin	18.8	4.00	ug/kg	25.00	ND	75.1	54-149			
Heptachlor	5.90	4.00	ug/kg	10.00	ND	59.0	46-135			

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Project: Bouquet, Bouquet Cyn. Rd. 1690009953 / MSA# SWB4-2019-21 WO# WO-2018-293

Quality Control Data

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch BK81319 - EPA 3550C										
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*7.25*		ug/kg	*12.50*		*58.0*	*55-126*			
Surrogate: Decachlorobiphenyl	*10.0*		ug/kg	*12.50*		*80.0*	*49-133*			
Matrix Spike Dup Source: 1811083-01	**Prepared: 11/12/18 Analyzed: 11/13/18**									
Aldrin	7.49	4.00	ug/kg	10.00	ND	74.9	39-124	0.519	30	
gamma-BHC (Lindane)	5.87	4.00	ug/kg	10.00	ND	58.7	44-120	3.24	30	
4,4´-DDT	14.2	8.00	ug/kg	25.00	ND	56.8	48-150	3.41	30	
Dieldrin	16.9	4.00	ug/kg	25.00	ND	67.5	48-144	3.03	30	
Endrin	18.7	4.00	ug/kg	25.00	ND	74.7	54-149	0.438	30	
Heptachlor	6.07	4.00	ug/kg	10.00	ND	60.7	46-135	2.89	30	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*7.55*		ug/kg	*12.50*		*60.4*	*55-126*			
Surrogate: Decachlorobiphenyl	*10.1*		ug/kg	*12.50*		*81.1*	*49-133*			
Batch BK81237 - EPA 3050B										
Blank	**Prepared & Analyzed: 11/09/18**									
Arsenic	ND	2.00	mg/kg							
LCS	**Prepared & Analyzed: 11/09/18**									
Arsenic	49.4	2.00	mg/kg	49.72		99.4	80-120			
Matrix Spike Source: 1811084-13	**Prepared & Analyzed: 11/09/18**									
Arsenic	48.3	2.00	mg/kg	49.72	3.06	91.0	75-125			
Matrix Spike Dup Source: 1811084-13	**Prepared & Analyzed: 11/09/18**									
Arsenic	47.6	2.00	mg/kg	49.72	3.06	89.7	75-125	1.44	30	

Notes and Definitions

NA	Not Applicable
ND	Analyte NOT DETECTED at or above the reported limit(s)
NR	Not Reported
MDL	Method Detection Limit
PQL	Practical Quantitation Limit

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138

Authorized Signature(s)

RAMBOLL

CHAIN-OF-CUSTODY FORM

№ 14555 181083

UST PROJECT OR IS EDF REQUIRED? YES (NO) IF YES, GLOBAL ID# _____ MSA # SWBU-2019-21 WORK ORDER # WO-2018-293

PROJECT NAME/FACILITY ID Bouquet DATE 11/8/2018 FIELD PERSON# S. Eckelman

PROJECT LOCATION Bouquet Cyn Rd PROJECT MANAGER R Wale

PROJECT NUMBER 1690009453- LABORATORY Positive Labs

Sampler STE

Signature Stephanie Eckelman

SAMPLE ID NUMBER	SAMPLE DATE	SAMPLE TIME	SAMPLE DEPTH (F)	AIR SAMPLE VOLUME (L)	MATRIX: (A)IR; (G)AS; (W)ATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	Analysis Required: TCP Method 8081A	Analysis Required: Arsenic 6010B	COMMENTS
SS-01-11082018	11-7-18	0804	0.6		S	2 G*	U	none	X	X	Please email results to seckelman@ramboll.com amarr@ramboll.com rwale@ramboll.com
SS-02-11082018		0847				2			X	X	
SS-03-11082018		0911				2			X	X	
SS-04-11082018		0930				2			X	X	
SS-05-11082018		1000				2			X	X	
SS-06-11082018		1038				2			X	X	
SS-DUP-11082018		1043				1 G			X	X	
SS-07-11082018		1106				2 P			X	X	*Please use sleeve samples first.
SS-08-11082018		1130				2 G/P			X	X	
TOTAL											

RELINQUISHED BY	TIME/DATE	RECEIVED BY COMPANY	TIME/DATE	TURNAROUND TIME (CIRCLE ONE)	
Stephanie Eckelman	11/8/18 1305		11-8-18 1308		SAME DAY / 72 HOURS
RELINQUISHED BY	TIME/DATE	RECEIVED BY COMPANY	TIME/DATE	* S:sleeve G:Glass Jar	24 HOURS / 5 DAYS
	11-8-18 1410	Positive Lab Service	11.8.18/1410		48 HOURS / NORMAL
RELINQUISHED BY	TIME/DATE	RECEIVED BY COMPANY	TIME/DATE	SAMPLE INTEGRITY INTACT Y N TEMP 1.3°C	SAMPLE INTEGRITY INTACT Y N

SWBU Office Locations:
- ☐ 18100 Von Karman Avenue, Suite 600, Irvine, CA 92612 +1 949 261 5151 +1 949 261 6202
- ☒ 350 S Grand Avenue, Suite 2800, Los Angeles, CA 90071 +1 213 943 6300 +1 213 943 6301
- ☐ 2111 East Highland Avenue, Suite 402, Phoenix, AZ 85016 +1 602 734 7700 +1 602 734-7701

Appendix G:
Hydrology Report and Urban Stormwater Mitigation Plan

Part 1: Hydrology Report

HYDROLOGY STUDY

FOR:

Tentative Tract No. 82126

FOR OWNER:

Integral Communities
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

PREPARED BY:

SIKAND ENGINEERING ASSOCIATES
15230 Burbank Boulevard, Suite 100
Van Nuys, California 91411
818-787-8550

Doug Farmer, Civil Engineer

Submittal Date: November 4, 2019

W.O. 5117-006

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SECTION 4	**26-50**	**PROPOSED CONDITION** HydroCalc and MODRAT Calculations Design Frequency (Q_B and Q_{B+D}) Proposed Hydrology Map
SECTION 5	**51-54**	**DEBRIS PRODUCTION AND BULKING** Subarea: Debris Production and Bulking Calculations Outlet: Debris Production and Bulking Calculations Debris Basin Capacity Calculations

SECTION 1

Purpose of the Study

The purpose of this study is to analyze the Design and Clear Frequency storm hydrological impacts of the proposed site development (Tentative Tract 82126) against its pre-development receiving outlet conditions, to comply with the requirements established by the County of Los Angeles, and, to provide the criteria for the design of the on-site storm drain systems and other drainage devices.

Project Description

The site is located on the East/ South side of Bouquet Canyon Road at the easterly terminus of Copper Hill Drive, in the city of Santa Clarita of Los Angeles County, State of California. The frontage along Bouquet Canyon is approximately 0.7 miles. The site comprises approximately 90 acres and is characterized by a prominent north/south trending ridgeline on the western portion of the site and the broad, flat plain of Bouquet Canyon in the central and northeastern portions. The active stream channel of Bouquet Canyon crosses the northern portion of the site.

EXISTING CONDITION:
The project lies entirely within two drainage tributary areas both of which ultimately discharge into Bouquet Creek. The natural drainage pattern starts from the north and conveys south, into Bouquet Creek. A portion of the site drains into an existing storm drain (PD 852) which in turn discharges into Bouquet Creek. The project is located within a FEMA flood zone. It is also located within a Los Angeles County Flood Control District floodway and flood plain.

PROPOSED CONDITION: The proposed development is residential, consisting mostly of multi-family residential condominiums with some single family units located adjacent to existing Bouquet Canyon Road across from Pam Court and associated street improvements, utilities and landscaping. The project is also comprised of manufactured slopes, a trail, open spaces, debris basins, and infiltration and biofiltration basins.

Existing Bouquet Creek will be channelized into a reinforced concrete trapezoidal channel within the project boundary. It will extend from a bridge that will be constructed for the realignment of Bouquet Canyon Road on the upstream side through the project and will tie into the existing Bouquet Creek channel which has lined sides and grade control structures on the invert. There is an existing bridge for Bouquet Canyon Road that will be eliminated allowing for the tie in at the downstream end of this project. In addition to Bouquet Creek, there are additional natural areas located on the southern end of the project adjacent to the extension of Bouquet Canyon Road. These areas will be collected in debris basins before entering the proposed storm drain system. Additionally, all developed area flows are collected within the storm drain system, downstream of the debris basin locations. The system enters Bouquet Creek directly from one subarea and indirectly through an existing 39" storm drain pipe for the other subarea. See Section 4 for Proposed Conditions Map.

Hydrologic Criteria & Methodology

This report follows the hydrologic criteria and methodology set forth by Los Angeles County Department of Public Works, as explained in its "Hydrology Manual", "Sedimentation Manual".

The following are the criteria used in the calculations:

- Design Storm Frequency:
  50-yr for undeveloped areas and developed sump areas,
  25-yr for developed areas.
- Soil Type Number = 020, 099 (see maps for limits)
- Basin Name = Santa Clara
- DPA Zone = 8 & 9 (see maps for limit)
- Peak Bulking Factor
  - DPA Zone 8 = 1.360 (for areas ≤ 0.1 sq mi.)
  - DPA Zone 9 = 1.270 (for areas ≤ 0.1 sq mi.)
- Debris Production:
  - DPA Zone 8 = 36,000 cy/sq mi. (for areas ≤ 0.1 sq mi.)
  - DPA Zone 9 = 16,500 cy/sq mi. (for areas ≤ 0.1 sq mi.)
- Isohyet = 5.6" (50-yr, 24-hr)
  1.05" (85th Percentile, 24-hr)
- % Imperviousness:
  1% for undeveloped / natural areas,
  10% for developed slope areas
  10% for water quality areas
  42% for single-family residential areas,
  74% for mixed multi-family residential areas,
  91% for paved street areas.

Time of Concentration (TC) and design Peak Flow (Q) for each subarea are calculated using Hydrocalc. Burning of flows, flood routing and confluence Peak Qs are calculated using F0601M program, also know as the Modified Rational Method program (MODRAT).
See Sections 3 & 4, TC and MODRAT Calculations.

Debris Production Volumes are calculated using the DPR Chart for undeveloped areas under single DPA Zone; and bulking of the flows are obtained using the Peak Bulk Factors Chart for undeveloped areas under single DPA Zone. See Section 2 for Charts; Section 5 for Calculations.

Floodplain Requirements

Since a part of the project falls within the FEMA Zone A floodplain, a Conditional Letter of Map Revision (CLOMR) will need to be processed through and approved by FEMA prior to construction of the Bouquet channel. Upon completion of the channel improvements, a Letter of Map Revisions (LOMR) will be processed through and approved by FEMA to remove the project from the FEMA flood hazard area.

A revision to the Los Angeles County Floodway maps will also be processed to revise the county flood plain.

Hydrology Summary

Comparing the design storm frequency between the Pre-Development and Post-Development conditions at the project outlet point and off-site point, the proposed condition discharges and volumes do not exceed their respective existing condition discharge and volumes, as shown in the Design Frequency Summary Table below. This means that for the design frequency storm, there is no need for any mitigation, as negative impacts to offsite properties are not present for these areas.

Design Frequency Summary Table:

	PRE-DEVELOPMENT				POST-DEVELOPMENT			
	Area (ac)	**Q**b (cfs)	**Q**bb (cfs)	**DPV** (cy)	**Area** (ac)	**Q**b+d (cfs)	**Q**bb+d (cfs)	**DPV** (cy)
100	55.9	84.2	114.5	3144	49.1	97.0	97.0	0
200	26.1	34.6	47.1	1468	34.0	59.0	59.0	0
300	6.6	7.3	9.3	170	7.8	14.7	14.7	0
400	1.1	2.5	3.4	62	4.1	8.4	11.4	180
500	13.0	19.3	26.0	596	6.8	12.3	15.0	270
600	1.0	1.6	2.0	26	1.1	2.7	2.7	0
700	-	-	-	-	0.8	1.8	2.4	45
TOTAL	**103.7**	**149.5**	**202.3**	**5467**	**103.6**	**195.9**	**202.2**	**495**

Qb — Peak runoff from a 50-year rainfall intensity storm from undeveloped areas that is increased due to a fire event

Qbb — Peak runoff from a 50-year rainfall intensity storm from undeveloped areas that is laden with burned vegetation, fines, rocks, and other debris.

Qd — Peak runoff from a 25 or 50-year rainfall intensity storm from developed areas that are not assumed to be burned or bulked.

DPV — Debris Production Volume based on the debris production charts from the Los Angeles County Hydrology Manual which are included in Section 2 of this report

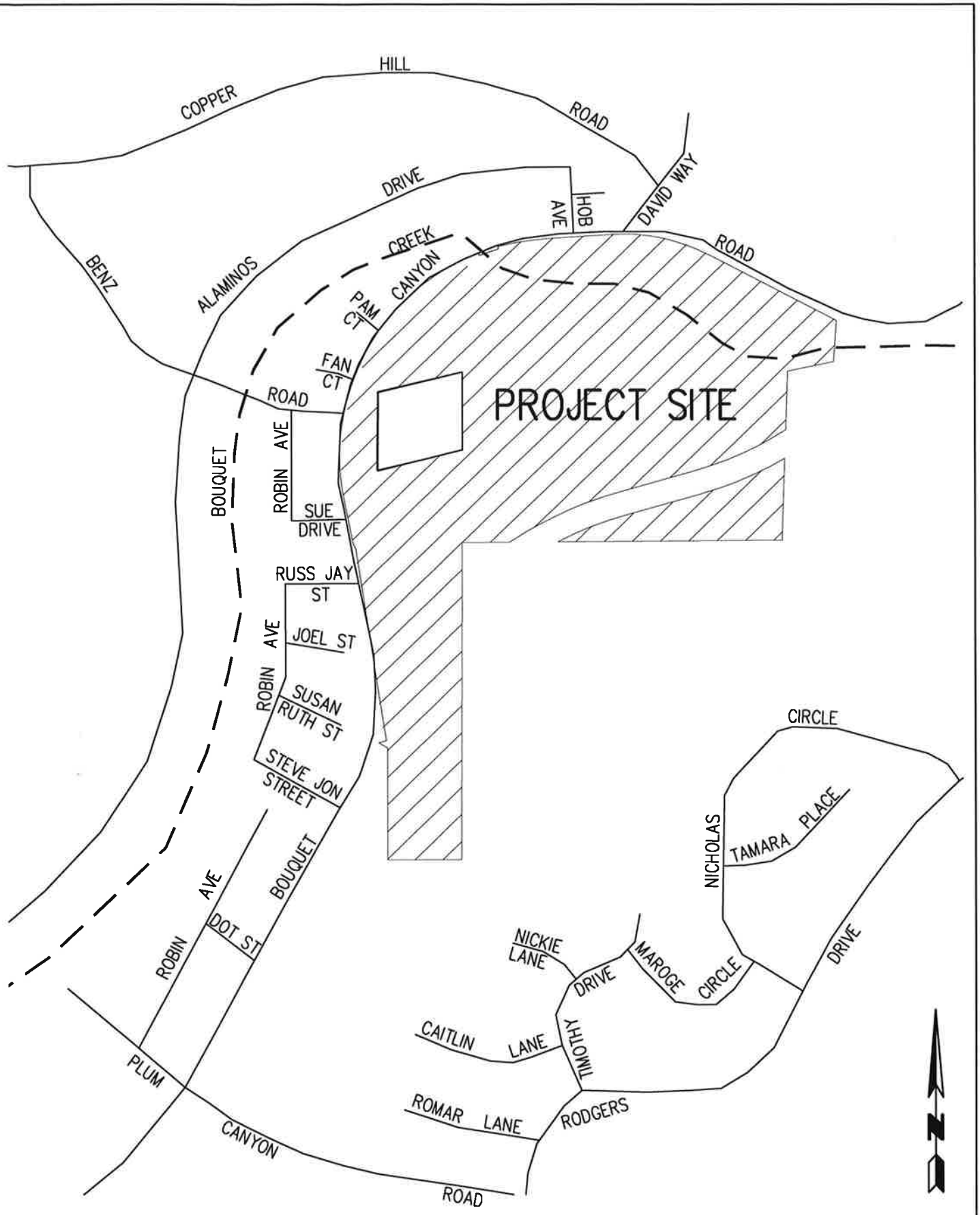
At the project buildout, runoff from the drainage areas would continue to flow through the site, but would be channeled through a storm system that would be constructed from the developed upland areas of the site down to Bouquet Creek. As required in the LACDPW

memorandum entitled, "Level of Flood Protection and Drainage Protection Standards," all onsite systems carrying runoff from developed areas will be designed from the 25-Year Design Storm (Urban Flood), while storm drains under major and secondary highways, open channels (main channels), debris carrying systems, and sumps will be designed for the 50-year capital flood. The City of Santa Clarita conforms to these Los Angeles County guidelines.

Since the project ties directly into Bouquet Creek which is an improved Los Angeles County Flood Control District maintained facility which ties into the Santa Clara River at its ultimate downstream end. Since the Santa Clara River has an estimated 100 year peak flow larger that 25,000 cfs, it is not susceptible to hydromodification requirements.

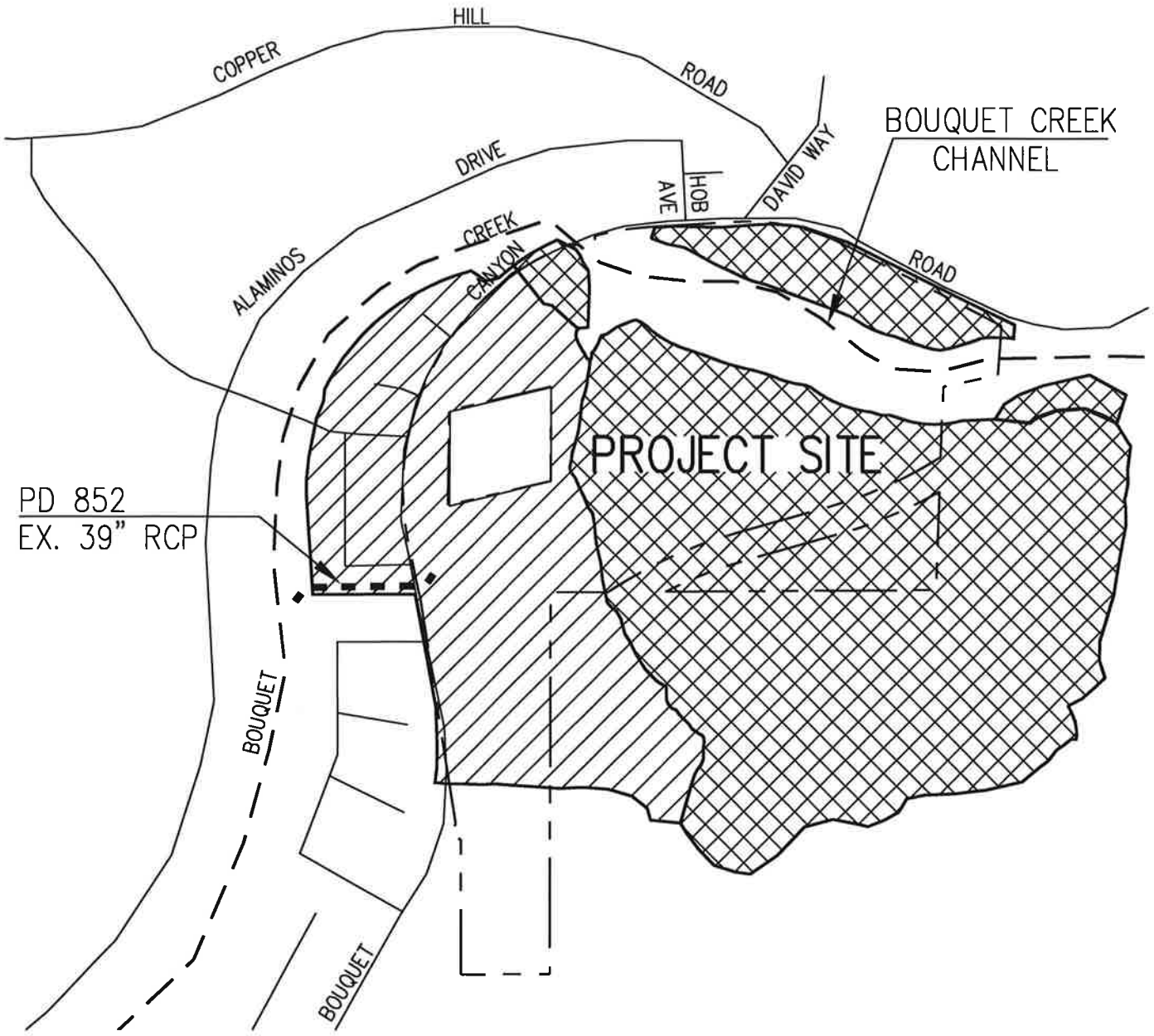
Preliminary alignments and layouts of the drainage devices, swales, debris basins, infiltration basins, access roads, and storm drain system are shown on the Proposed Conditions Map.

SECTION 2



EX. 1: VICINITY MAP

SCALE: 1"=500'



EXISTING TRIBUTARY AREA OUTLETTING TO PD 852

EXISTING TRIBUTARY AREA OUTLETTING TO
ON-SITE BOUQUET CREEK CHANNEL

N

EX. 2: REGIONAL MAP

SCALE: 1"=500'

1995000 FT

1990000 FT

JOINS PANEL 0810

ZONE A

ZONE AO
(DEPTH 3)

BOUQUET

ZONE AO
(DEPTH 3)

ZONE D

Bouquet Canyon Creek

ZONE A

ZONE AO
(DEPTH 3)

LOS ANGELES C
UNINCORPORATE
065043

LOS ANGELES COUNTY

CITY OF
SANTA CLARITA

ZONE AO
(DEPTH 2)

ZONE AO
(DEPTH 2)

ZONE D

BOUQUET CANYON RD

ZONE A

ZONE AO
(DEPTH 2)

ZONE A

ZONE AO
(DEPTH 2)

PROJECT
SITE

SHELTER DR

ALAMINOS DR

JOEL ST

ROBIN AVE

ZONE D

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 M

300 0 300 600

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0830F

FIRM

FLOOD INSURANCE RATE MAP

LOS ANGELES COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 830 OF 2350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LOS ANGELES COUNTY	065043	0830	F
SANTA CLARITA, CITY OF	060729	0830	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06037C0830F

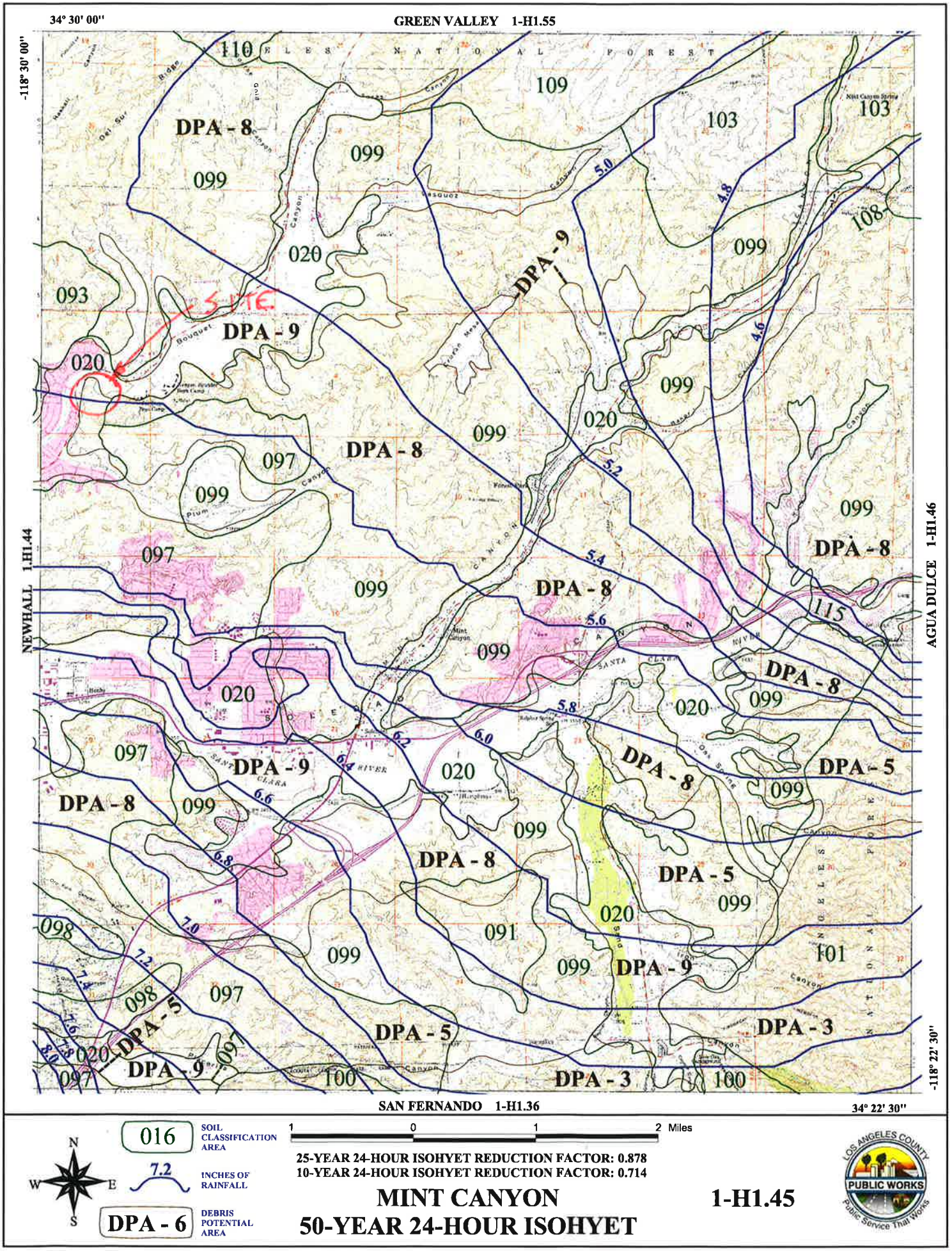
EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Proportion Impervious Data

Code	Land Use Description	% Impervious
1111	High-Density Single Family Residential	42
1112	Low-Density Single Family Residential	21
1121	Mixed Multi-Family Residential	74
1122	Duplexes, Triplexes and 2-or 3-Unit Condominiums and Townhouses	55
1123	Low-Rise Apartments, Condominiums, and Townhouses	86
1124	Medium-Rise Apartments and Condominiums	86
1125	High-Rise Apartments and Condominiums	90
1131	Trailer Parks and Mobile Home Courts, High-Density	91
1132	Mobile Home Courts and Subdivisions, Low-Density	42
1140	Mixed Residential	59
1151	Rural Residential, High-Density	15
1152	Rural Residential, Low-Density	10
1211	Low- and Medium-Rise Major Office Use	91
1212	High-Rise Major Office Use	91
1213	Skyscrapers	91
1221	Regional Shopping Center	95
1222	Retail Centers (Non-Strip With Contiguous Interconnected Off-Street	96
1223	Modern Strip Development	96
1224	Older Strip Development	97
1231	Commercial Storage	90
1232	Commercial Recreation	90
1233	Hotels and Motels	96
1234	Attended Pay Public Parking Facilities	91
1241	Government Offices	91
1242	Police and Sheriff Stations	91
1243	Fire Stations	91
1244	Major Medical Health Care Facilities	74
1245	Religious Facilities	82
1246	Other Public Facilities	91
1247	Non-Attended Public Parking Facilities	91
1251	Correctional Facilities	91
1252	Special Care Facilities	74
1253	Other Special Use Facilities	86
1261	Pre-Schools/Day Care Centers	68
1262	Elementary Schools	82
1263	Junior or Intermediate High Schools	82
1264	Senior High Schools	82
1265	Colleges and Universities	47
1266	Trade Schools and Professional Training Facilities	91
1271	Base (Built-up Area)	65
1271.01	Base High-Density Single Family Residential	42
1271.02	Base Duplexes, Triplexes and 2-or 3-Unit Condominiums and T	55


34° 30' 00"
GREEN VALLEY 1-H1.55
-118° 30' 00"
ANGELES NATIONAL FOREST
110
109
103
108
099
020
093
097
DPA - 8
DPA - 9
DPA - 5
DPA - 3
5.0
4.8
4.6
5.2
5.4
5.6
5.8
6.0
6.2
6.4
6.6
6.8
7.0
7.2
7.4
7.6
7.8
8.0
SITE
NEWHALL 1-H1.44
AGUA DULCE 1-H1.46
SAN FERNANDO 1-H1.36
34° 22' 30"
-118° 22' 30"
016
SOIL CLASSIFICATION AREA
7.2
INCHES OF RAINFALL
DPA - 6
DEBRIS POTENTIAL AREA
N
S
E
W
1 0 1 2 Miles
25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714
MINT CANYON
50-YEAR 24-HOUR ISOHYET
1-H1.45
LOS ANGELES COUNTY
PUBLIC WORKS
Public Service That Works

search our site..

Hydrology Map A GIS viewer application to view the data for the hydrology manual.

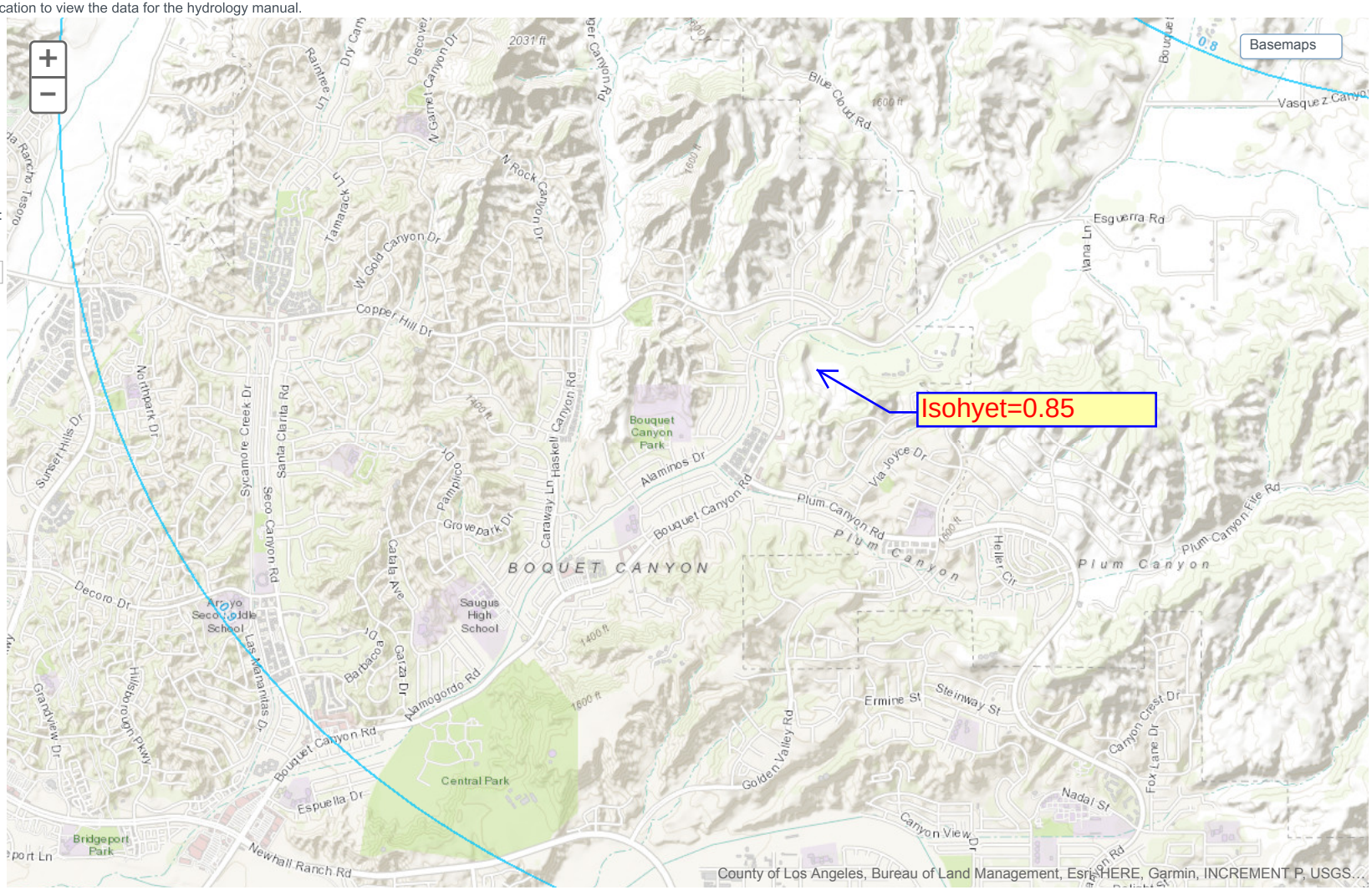
LAYERS

- 50yr Two Tenths (Rainfall)
- DPA Zones
- Soils 2004
- Final 85th Percentile, 24-hr Rainfall
- Final 95th Percentile, 24-hr Rainfall
- 1-year, 1-hour Rainfall Intensity

SEARCH

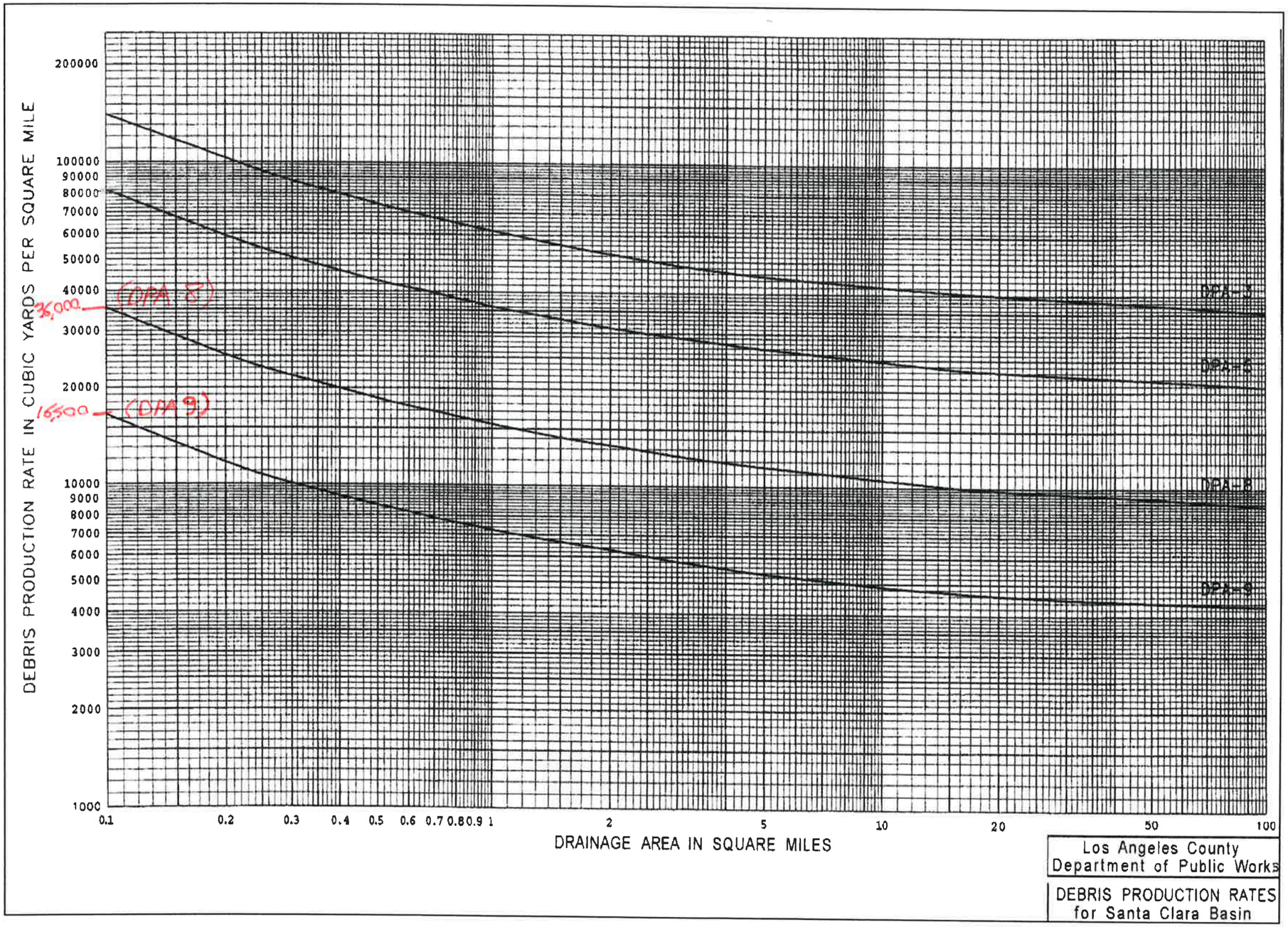
Enter Address, Cross Street, or Parcel No.:
(ex: 900 S. Fremont Ave., Fremont@Valley, 5342005904)

Search



Map Tips

PEAK BULKING FACTOR
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
1.36 (DPA 8)
1.22 (DPA 5)
DPA-5
DPA-8
DPA-9
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
2
5
10
20
50
100
DRAINAGE AREA IN SQUARE MILES
Los Angeles County
Department of Public Works
PEAK BULKING FACTORS
for Santa Clara Basin


DEBRIS PRODUCTION RATE IN CUBIC YARDS PER SQUARE MILE
200000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
35,000
(DPA 8)
16,500
(DPA 9)
DPA-3
DPA-5
DPA-8
DPA-9
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
2
5
10
20
50
100
DRAINAGE AREA IN SQUARE MILES
Los Angeles County
Department of Public Works
DEBRIS PRODUCTION RATES
for Santa Clara Basin

SECTION 3

Peak Flow Hydrologic Analysis

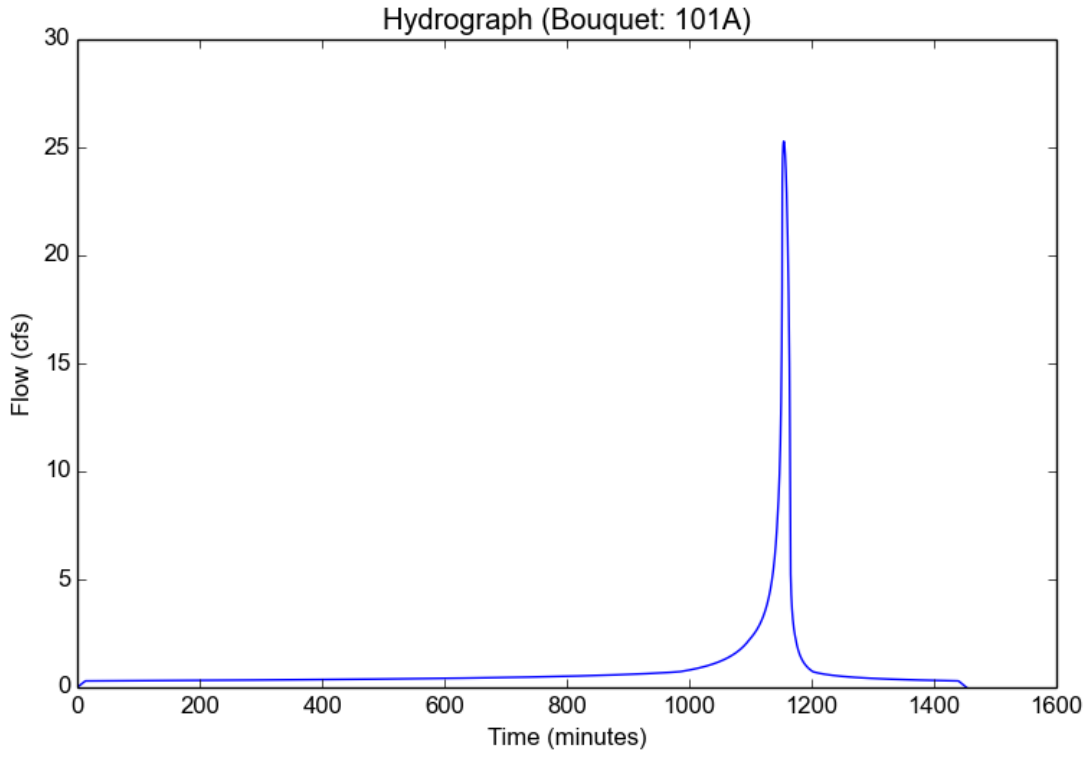
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/EX/Qburn/Bouquet Report.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	101A
Area (ac)	22.3
Flow Path Length (ft)	1661.0
Flow Path Slope (vft/hft)	0.191
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.1323
Undeveloped Runoff Coefficient (Cu)	0.5281
Developed Runoff Coefficient (Cd)	0.5318
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	25.2867
Burned Peak Flow Rate (cfs)	28.1127
24-Hr Clear Runoff Volume (ac-ft)	1.732
24-Hr Clear Runoff Volume (cu-ft)	75444.2317



Peak Flow Hydrologic Analysis

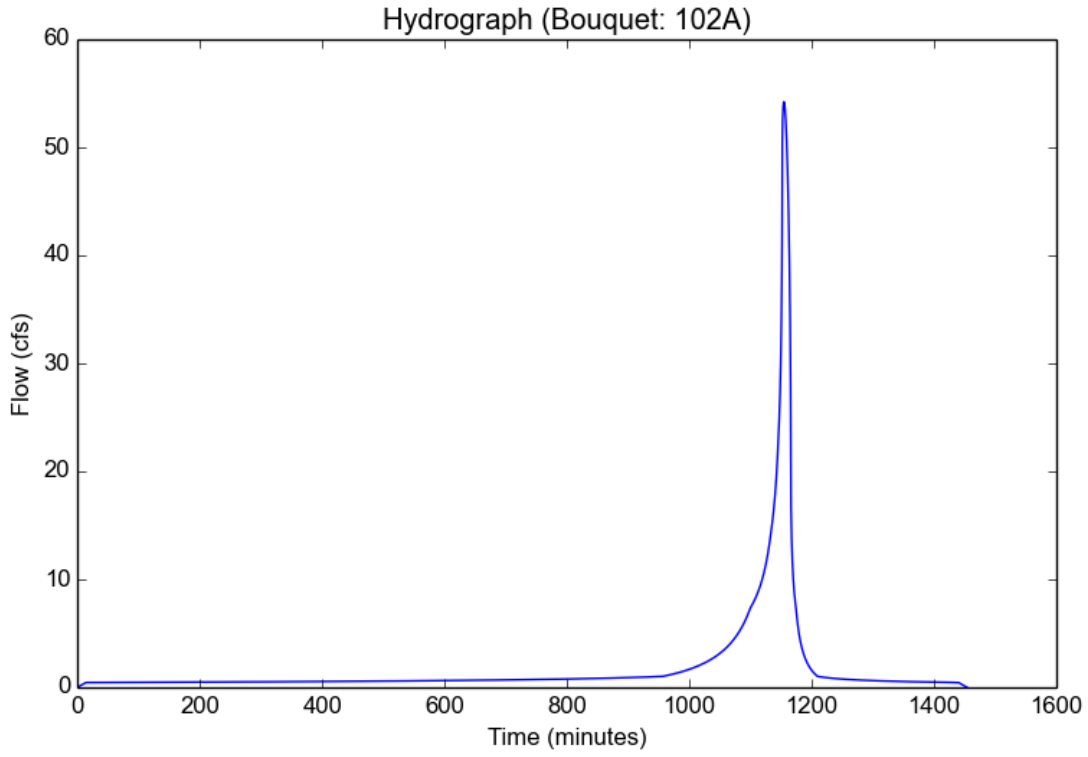
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/EX/Qburn/Bouquet Report.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	102A
Area (ac)	33.6
Flow Path Length (ft)	2454.0
Flow Path Slope (vft/hft)	0.13
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.0593
Undeveloped Runoff Coefficient (Cu)	0.7826
Developed Runoff Coefficient (Cd)	0.7838
Time of Concentration (min)	14.0
Clear Peak Flow Rate (cfs)	54.231
Burned Peak Flow Rate (cfs)	56.1189
24-Hr Clear Runoff Volume (ac-ft)	3.7744
24-Hr Clear Runoff Volume (cu-ft)	164414.7056



Peak Flow Hydrologic Analysis

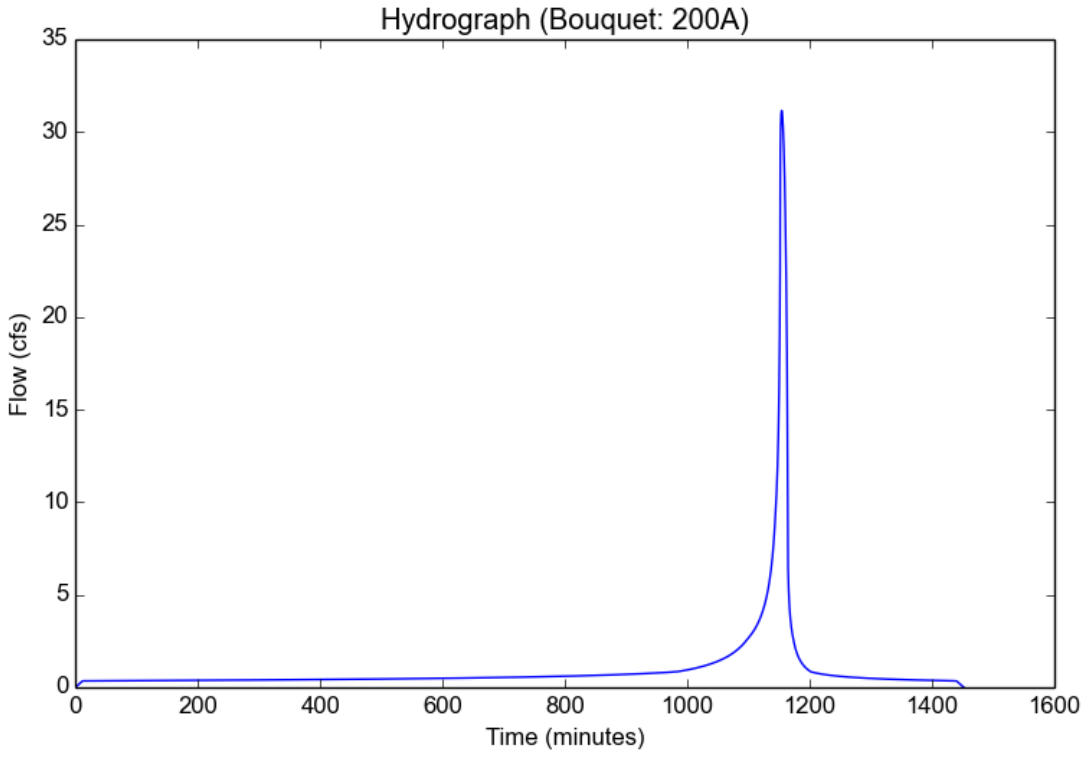
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/EX/Qburn/Bouquet Report.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	200A
Area (ac)	26.1
Flow Path Length (ft)	1500.0
Flow Path Slope (vft/hft)	0.179
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.2141
Undeveloped Runoff Coefficient (Cu)	0.5355
Developed Runoff Coefficient (Cd)	0.5391
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	31.1534
Burned Peak Flow Rate (cfs)	34.5558
24-Hr Clear Runoff Volume (ac-ft)	2.0295
24-Hr Clear Runoff Volume (cu-ft)	88403.1719



Peak Flow Hydrologic Analysis

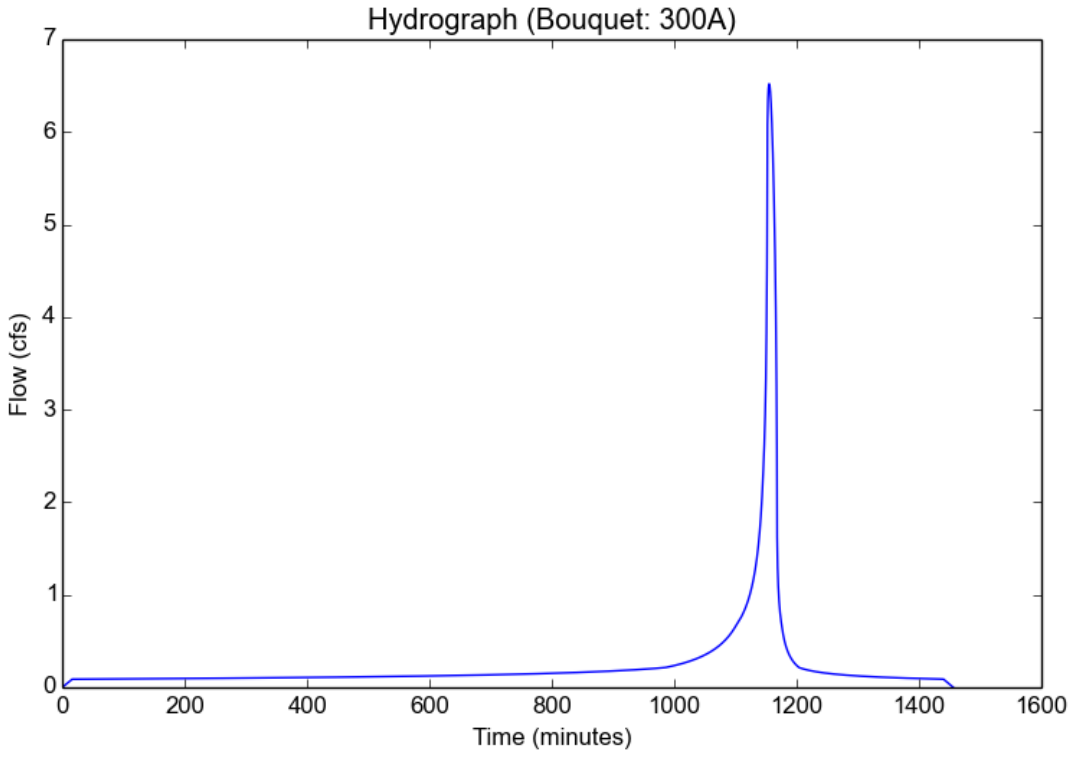
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/EX/Qburn/Bouquet Report.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	300A
Area (ac)	6.6
Flow Path Length (ft)	1212.0
Flow Path Slope (vft/hft)	0.021
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	1.9341
Undeveloped Runoff Coefficient (Cu)	0.5068
Developed Runoff Coefficient (Cd)	0.5108
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	6.5197
Burned Peak Flow Rate (cfs)	7.2991
24-Hr Clear Runoff Volume (ac-ft)	0.5104
24-Hr Clear Runoff Volume (cu-ft)	22231.6023



Peak Flow Hydrologic Analysis

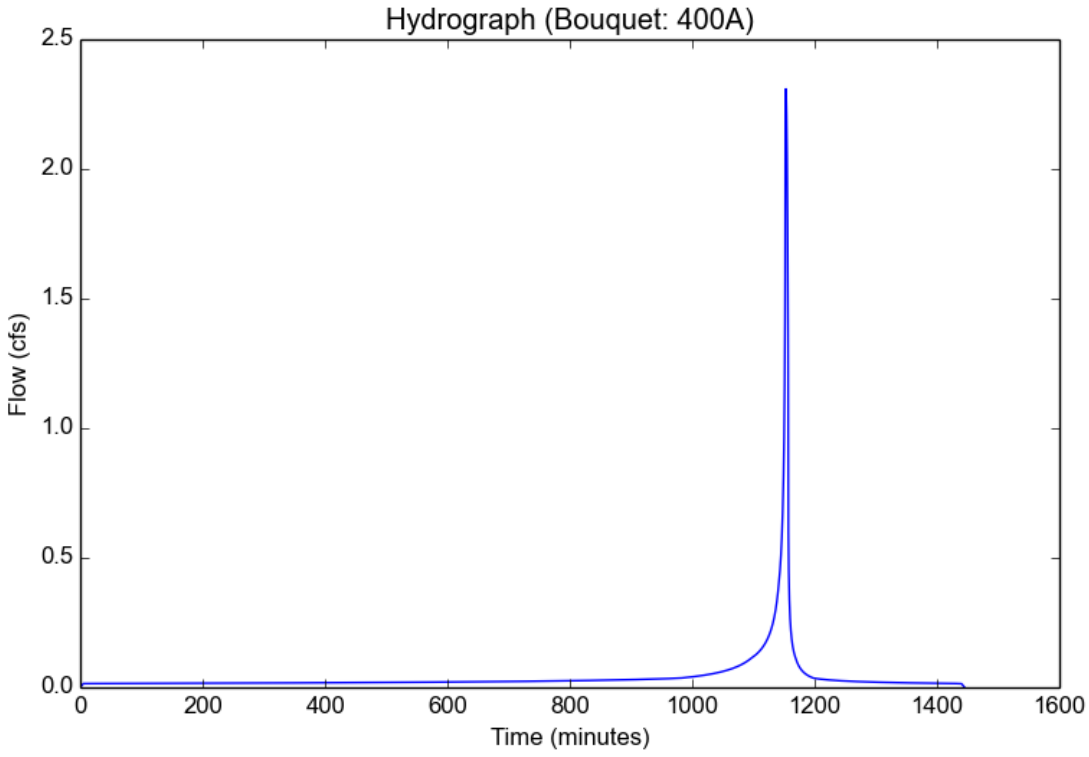
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/EX/Qburn/Bouquet Report.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	400A
Area (ac)	1.1
Flow Path Length (ft)	254.0
Flow Path Slope (vft/hft)	0.425
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	3.3411
Undeveloped Runoff Coefficient (Cu)	0.6255
Developed Runoff Coefficient (Cd)	0.6282
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.3088
Burned Peak Flow Rate (cfs)	2.4953
24-Hr Clear Runoff Volume (ac-ft)	0.0865
24-Hr Clear Runoff Volume (cu-ft)	3767.7641



Peak Flow Hydrologic Analysis

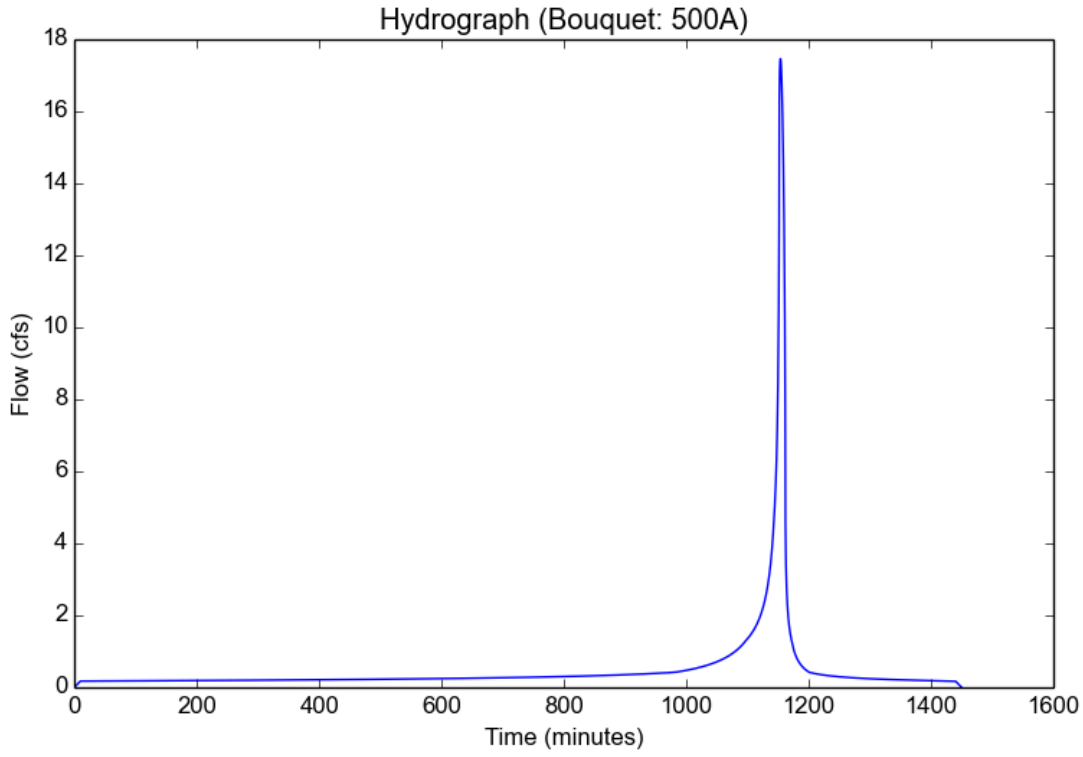
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/EX/Qburn/Bouquet Report.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	500A
Area (ac)	13.0
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.197
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.4122
Undeveloped Runoff Coefficient (Cu)	0.5534
Developed Runoff Coefficient (Cd)	0.5568
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	17.4617
Burned Peak Flow Rate (cfs)	19.2626
24-Hr Clear Runoff Volume (ac-ft)	1.0134
24-Hr Clear Runoff Volume (cu-ft)	44142.0558



Peak Flow Hydrologic Analysis

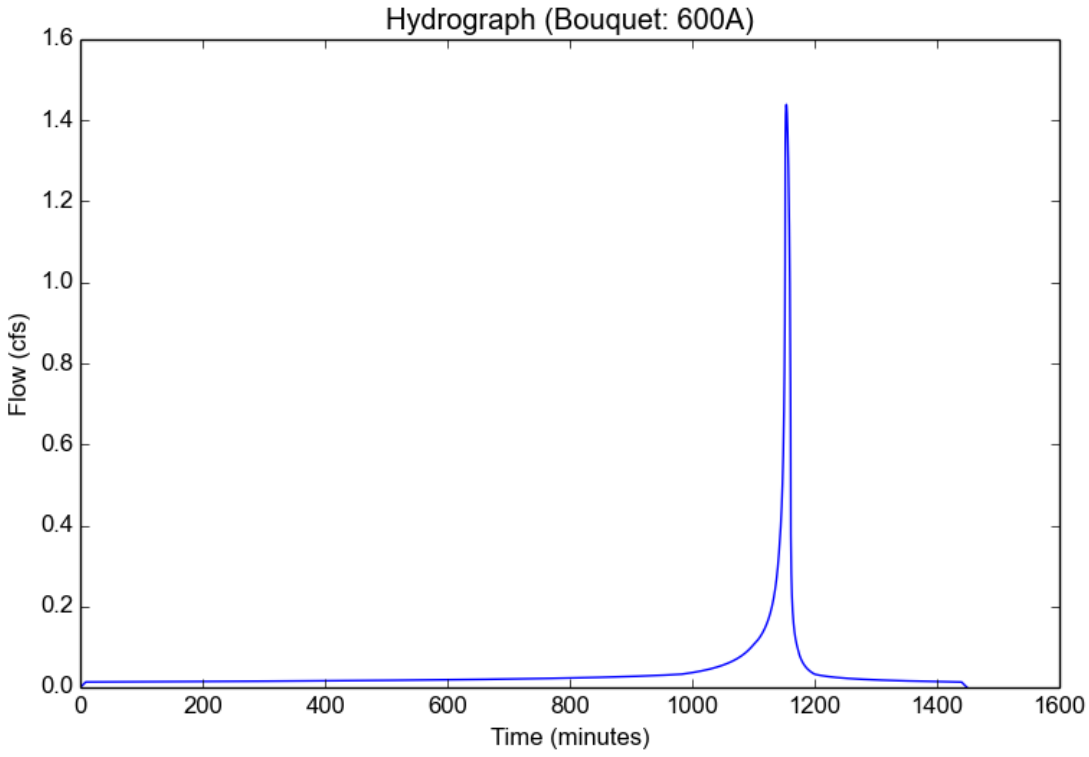
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/EX/Qburn/Bouquet Report.pdf
Version: HydroCalc 1.0.2

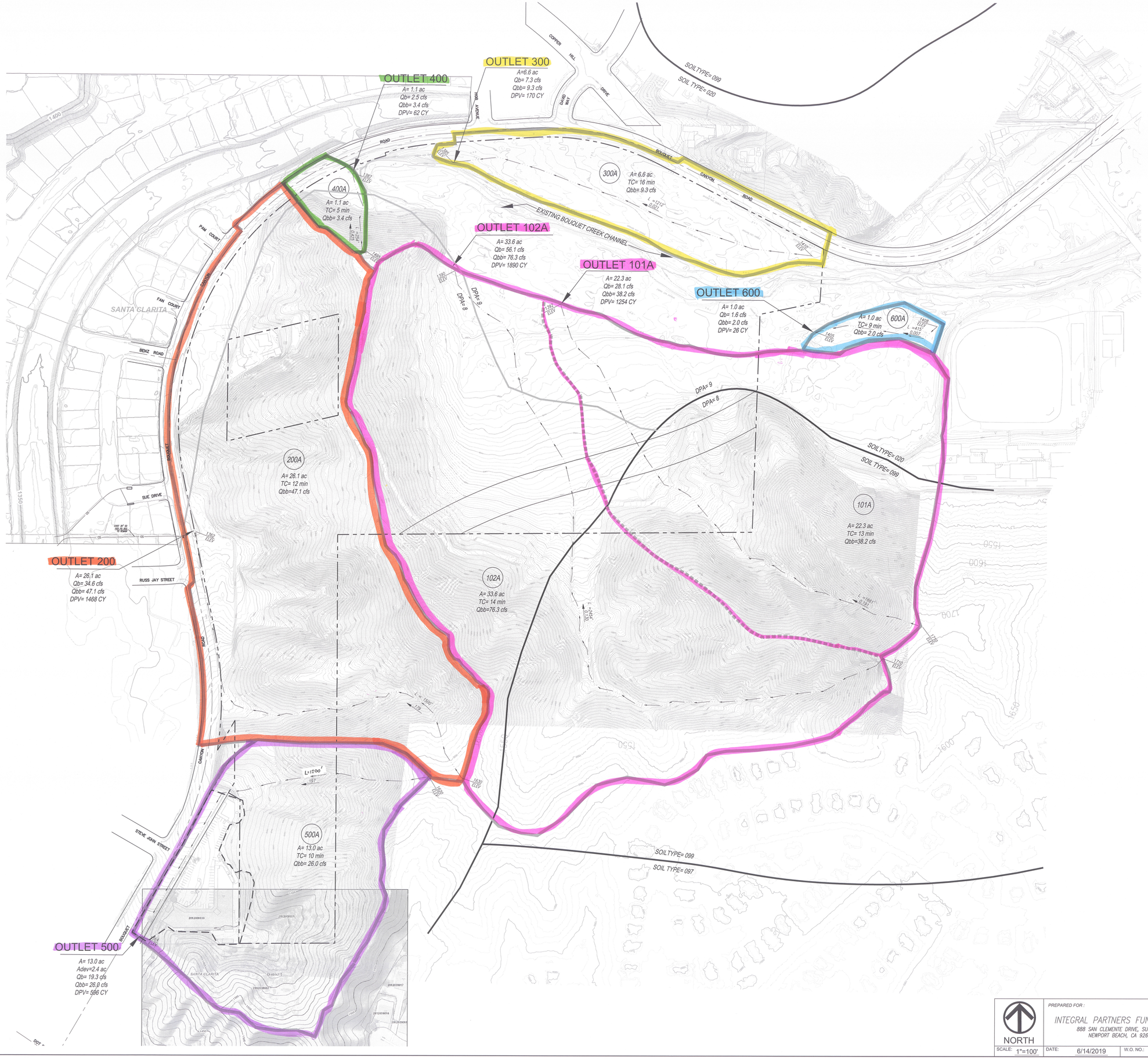
Input Parameters

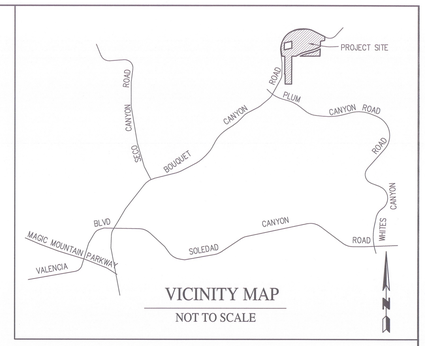
Project Name	Bouquet
Subarea ID	600A
Area (ac)	1.0
Flow Path Length (ft)	415.0
Flow Path Slope (vft/hft)	0.007
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.5346
Undeveloped Runoff Coefficient (Cu)	0.5645
Developed Runoff Coefficient (Cd)	0.5678
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	1.4392
Burned Peak Flow Rate (cfs)	1.5823
24-Hr Clear Runoff Volume (ac-ft)	0.0781
24-Hr Clear Runoff Volume (cu-ft)	3400.4408







LEGEND

- MAIN DRAINAGE BOUNDARY
- SUB-AREA BOUNDARY
- FLOW LINE
- TRACT BOUNDARY
- PROPOSED STORM DRAIN PIPE

3A & 13AC .... LOCATION NAMES
A .... AREA IN ACRES, Ac
Qb .... 50-YR, BURNED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs
Qbb .... 50-YR, BURNED & BULKED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs
Qd .... 50-YR OR 25-YR, DESIGN FLOW IN CUBIC FEET PER SECOND, cfs
Qb+d .... MIXED 25- & 50-YR, BURNED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs
Qbb+d .... MIXED 25- & 50-YR, BURNED & BULKED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs
DPV .... DEBRIS PRODUCTION VOLUME IN CUBIC YARDS, cy

FLOODPLAIN NOTES - SEE HYDRAULIC STUDY

1. THE PROJECT IS LOCATED WITHIN A FEMA FLOODPLAIN
2. THE PROJECT IS LOCATED WITHIN A LOS ANGELES COUNTY ORDINANCE FLOODPLAIN.

HYDROLOGY CRITERIA

- DESIGN STORM FREQUENCY:
  50-YR FOR DEVELOPED SUMP & UNDEVELOPED NATURAL AREAS
  DPA ZONE = 8,9
- BASIN NAME = SANTA CLARA
- SOIL TYPE NUMBER = 020,099
- PEAK BULKING FACTOR = 1.38 (FOR AREAS 64 Ac. OR UNDER) - DPA 8
  = 1.27 (FOR AREAS 64 Ac. OR UNDER) - DPA 9

DEBRIS PRODUCTION RATE = 36,000 cy / SQ MI. (FOR AREAS 64 Ac. OR UNDER) - DPA 8
= 16,500 cy / SQ MI. (FOR AREAS 64 Ac. OR UNDER) - DPA 9

- ISOHYET = 5.6" (50-YR, 24-HOUR)
  0.85" (85th Percentile, 24-hr)
- % IMPERVIOUSNESS:
  1% FOR UNDEVELOPED / NATURAL AREAS

EXISTING CONDITION
HYDROLOGY
TENTATIVE TRACT NO. 82126
IN THE CITY OF SANTA CLARITA

NORTH
SCALE: 1"=100'

PREPARED FOR :
INTEGRAL PARTNERS FUNDING, LLC
888 SAN CLEMENTE DRIVE, SUITE 100
NEWPORT BEACH, CA 92660

DATE: 6/14/2019
W.O. NO.: 5117-006

PREPARED BY :
SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd. #100, Van Nuys, CA 91411
Phone : (818) 787- 8550, Fax : (818) 901-7451
www.sikand.com, E-mail: info@sikand.com

REGISTERED PROFESSIONAL ENGINEER
LOUIS FARAUS
No.49041
Exp. 09-30-2020
CIVIL
STATE OF CALIFORNIA

SHEET 1 OF 1 SHEETS

SECTION 4

Peak Flow Hydrologic Analysis

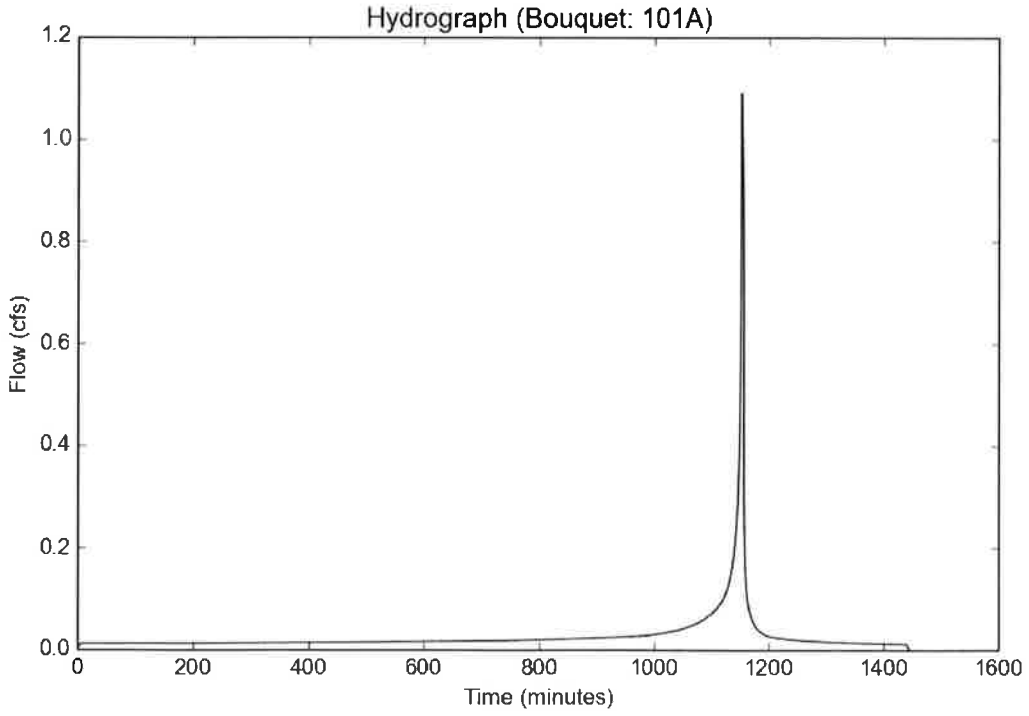
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	101A
Area (ac)	0.5
Flow Path Length (ft)	292.0
Flow Path Slope (vft/hft)	0.154
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.1
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	3.3411
Undeveloped Runoff Coefficient (Cu)	0.6255
Developed Runoff Coefficient (Cd)	0.6529
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.0907
Burned Peak Flow Rate (cfs)	1.0907
24-Hr Clear Runoff Volume (ac-ft)	0.0547
24-Hr Clear Runoff Volume (cu-ft)	2381.6548



Peak Flow Hydrologic Analysis

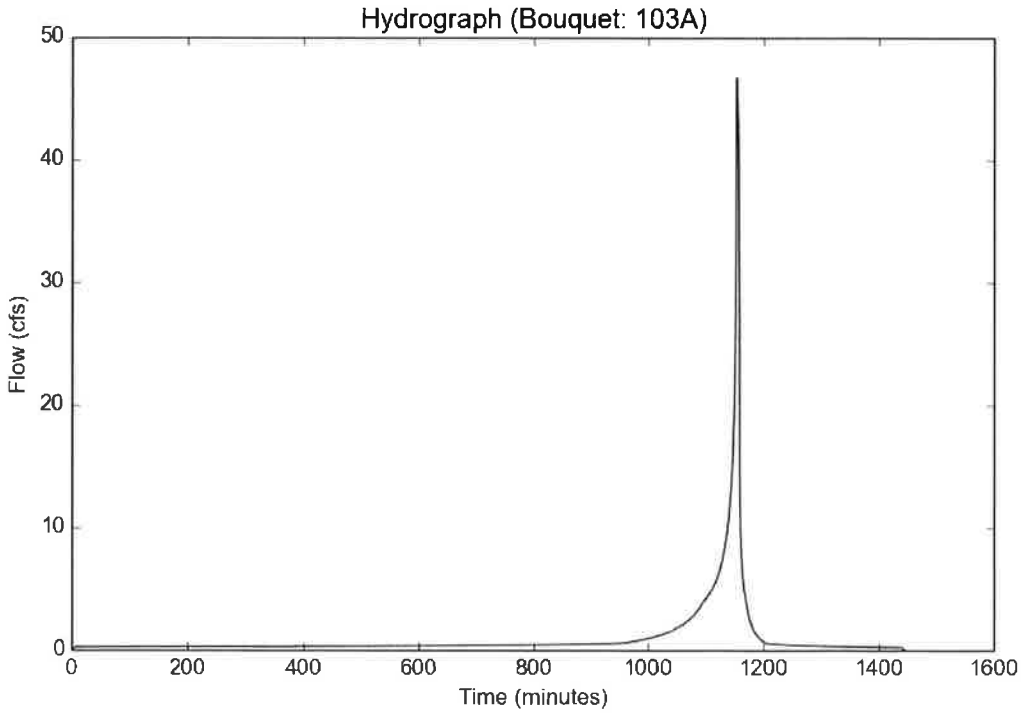
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	103A
Area (ac)	18.3
Flow Path Length (ft)	924.0
Flow Path Slope (vft/hft)	0.216
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	3.0667
Undeveloped Runoff Coefficient (Cu)	0.8315
Developed Runoff Coefficient (Cd)	0.8322
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	46.7031
Burned Peak Flow Rate (cfs)	47.9715
24-Hr Clear Runoff Volume (ac-ft)	2.0596
24-Hr Clear Runoff Volume (cu-ft)	89718.2066



Peak Flow Hydrologic Analysis

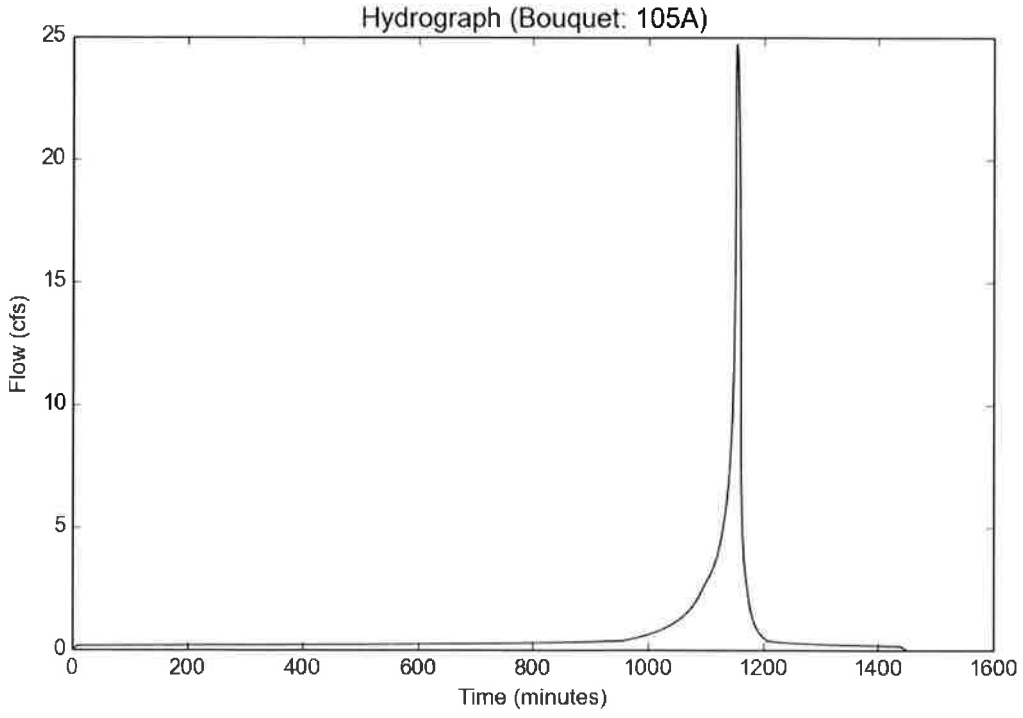
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	105A
Area (ac)	12.0
Flow Path Length (ft)	1400.0
Flow Path Slope (vft/hft)	0.215
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	99
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.5346
Undeveloped Runoff Coefficient (Cu)	0.8114
Developed Runoff Coefficient (Cd)	0.8122
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	24.7047
Burned Peak Flow Rate (cfs)	25.4508
24-Hr Clear Runoff Volume (ac-ft)	1.35
24-Hr Clear Runoff Volume (cu-ft)	58804.7355



Peak Flow Hydrologic Analysis

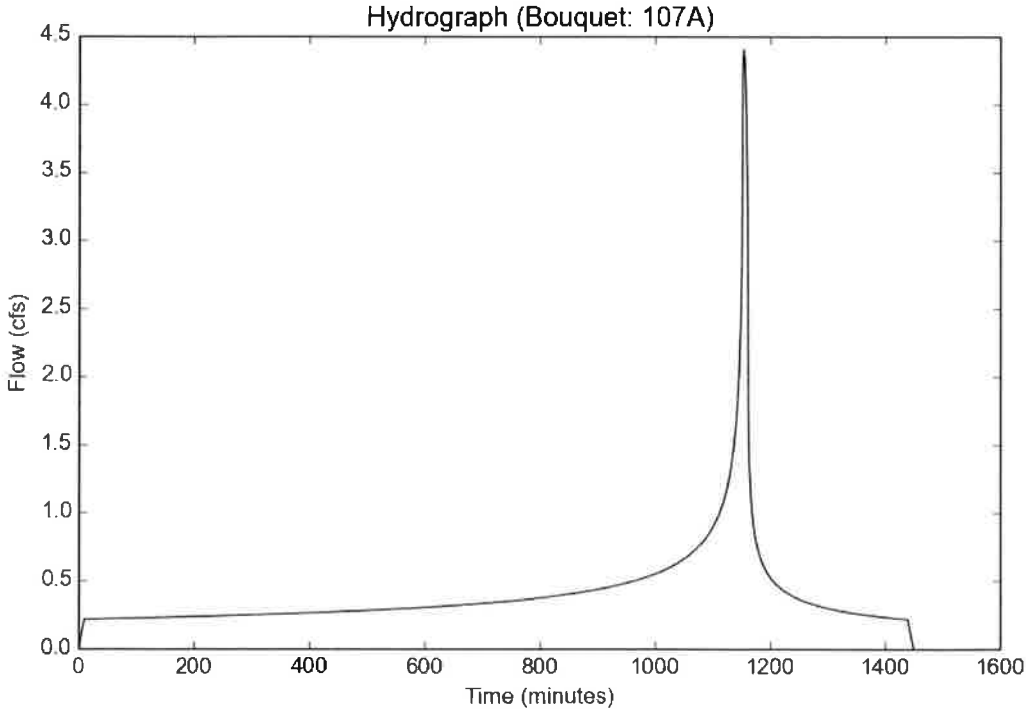
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	107A
Area (ac)	2.1
Flow Path Length (ft)	850.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.91
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.4122
Undeveloped Runoff Coefficient (Cu)	0.5534
Developed Runoff Coefficient (Cd)	0.8688
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	4.401
Burned Peak Flow Rate (cfs)	4.401
24-Hr Clear Runoff Volume (ac-ft)	0.8101
24-Hr Clear Runoff Volume (cu-ft)	35286.829



Peak Flow Hydrologic Analysis

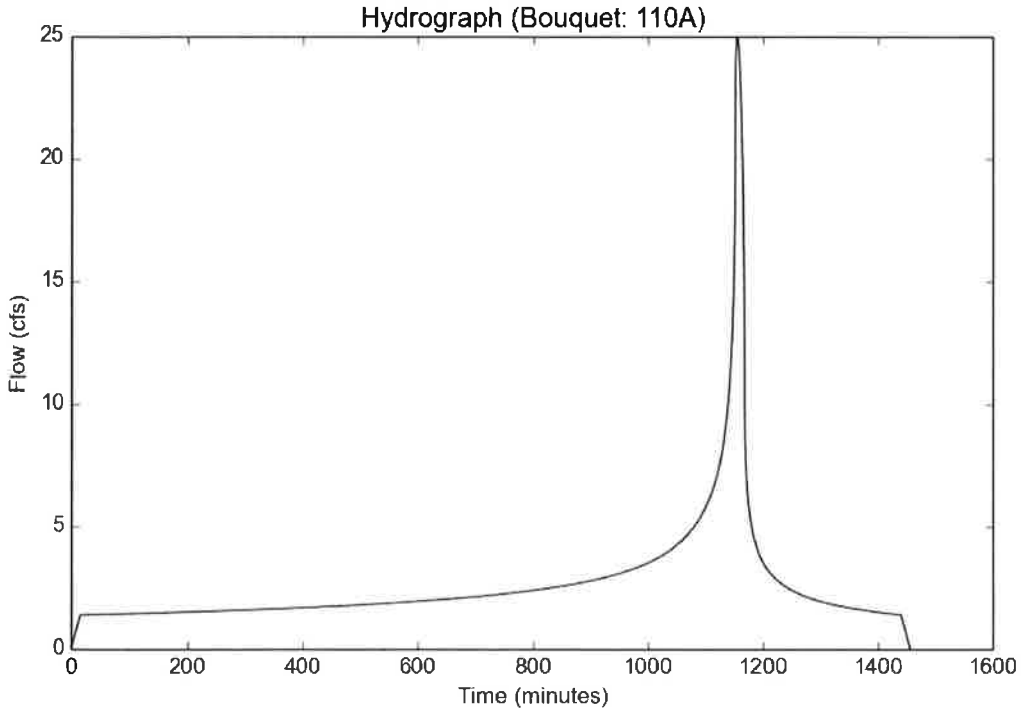
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	110A
Area (ac)	16.2
Flow Path Length (ft)	1530.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.74
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	1.9341
Undeveloped Runoff Coefficient (Cu)	0.5068
Developed Runoff Coefficient (Cd)	0.7978
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	24.9957
Burned Peak Flow Rate (cfs)	24.9957
24-Hr Clear Runoff Volume (ac-ft)	5.3046
24-Hr Clear Runoff Volume (cu-ft)	231070.1442



Peak Flow Hydrologic Analysis

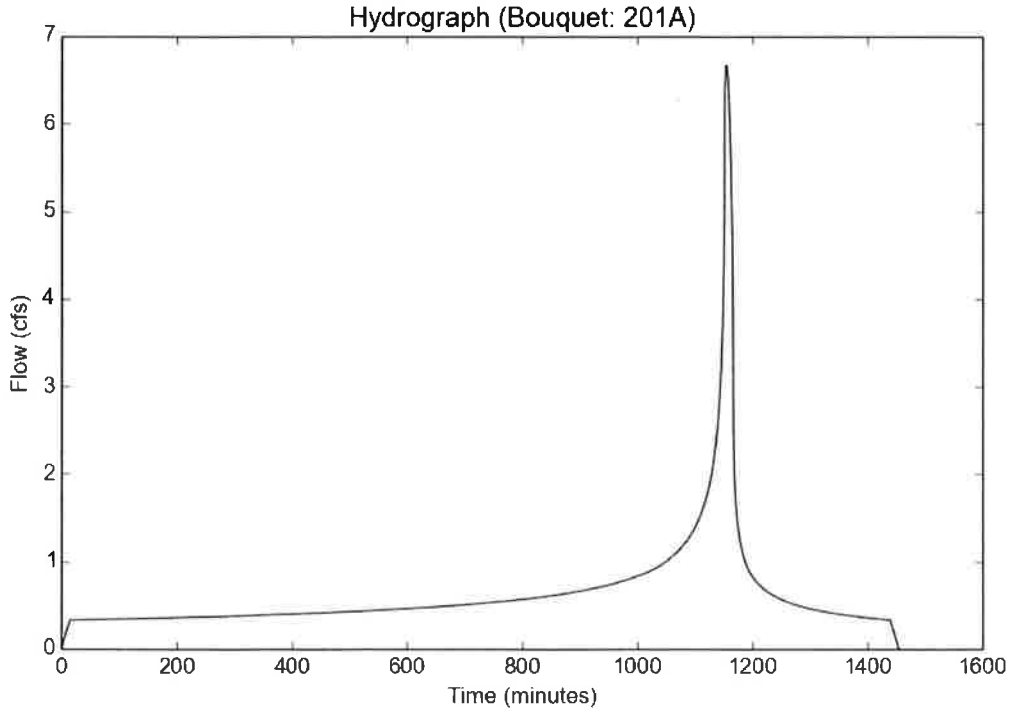
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	201A
Area (ac)	5.2
Flow Path Length (ft)	1503.0
Flow Path Slope (vft/hft)	0.0346
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.6
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.9168
Peak Intensity (in/hr)	1.7504
Undeveloped Runoff Coefficient (Cu)	0.481
Developed Runoff Coefficient (Cd)	0.7324
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	6.6665
Burned Peak Flow Rate (cfs)	6.6665
24-Hr Clear Runoff Volume (ac-ft)	1.2684
24-Hr Clear Runoff Volume (cu-ft)	55252.5685



Peak Flow Hydrologic Analysis

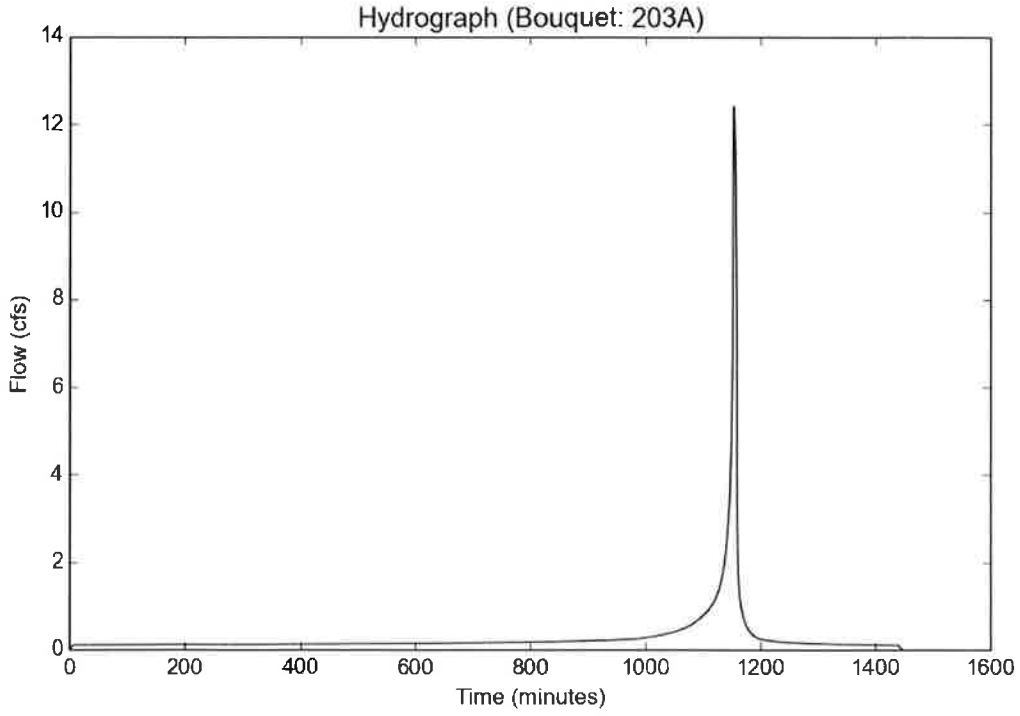
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	203A
Area (ac)	7.3
Flow Path Length (ft)	847.0
Flow Path Slope (vft/hft)	0.281
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.8524
Undeveloped Runoff Coefficient (Cu)	0.5932
Developed Runoff Coefficient (Cd)	0.5963
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	12.4161
Burned Peak Flow Rate (cfs)	13.5355
24-Hr Clear Runoff Volume (ac-ft)	0.5719
24-Hr Clear Runoff Volume (cu-ft)	24911.8195



Peak Flow Hydrologic Analysis

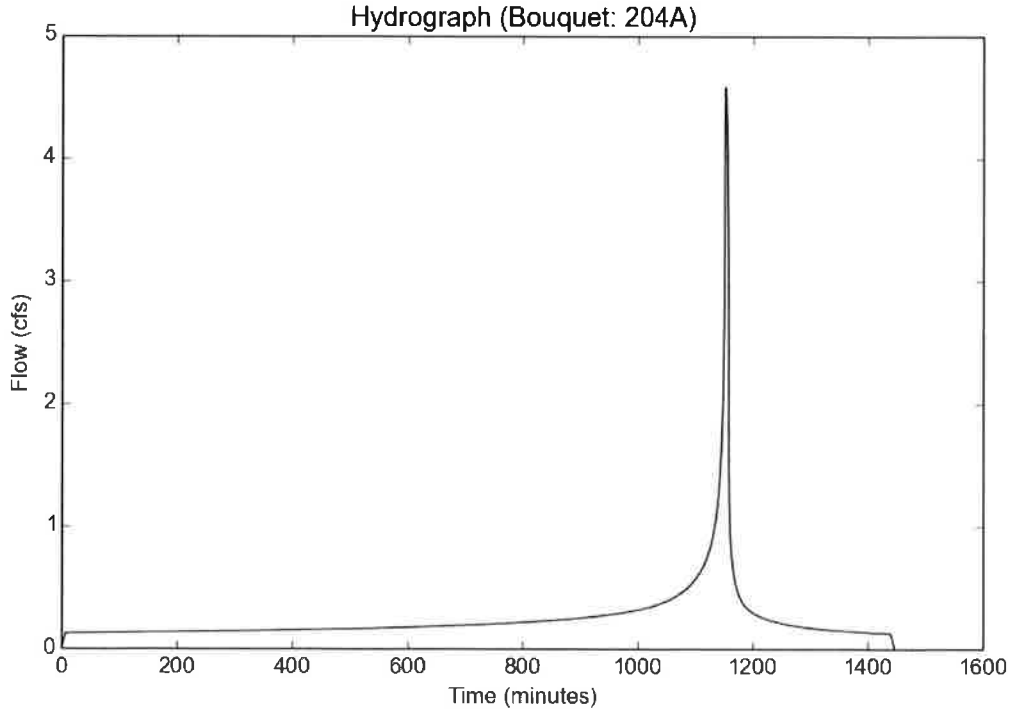
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	204A
Area (ac)	2.6
Flow Path Length (ft)	518.0
Flow Path Slope (vft/hft)	0.0502
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.42
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.9168
Peak Intensity (in/hr)	2.5044
Undeveloped Runoff Coefficient (Cu)	0.5617
Developed Runoff Coefficient (Cd)	0.7038
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	4.5828
Burned Peak Flow Rate (cfs)	4.5828
24-Hr Clear Runoff Volume (ac-ft)	0.493
24-Hr Clear Runoff Volume (cu-ft)	21476.5208



Peak Flow Hydrologic Analysis

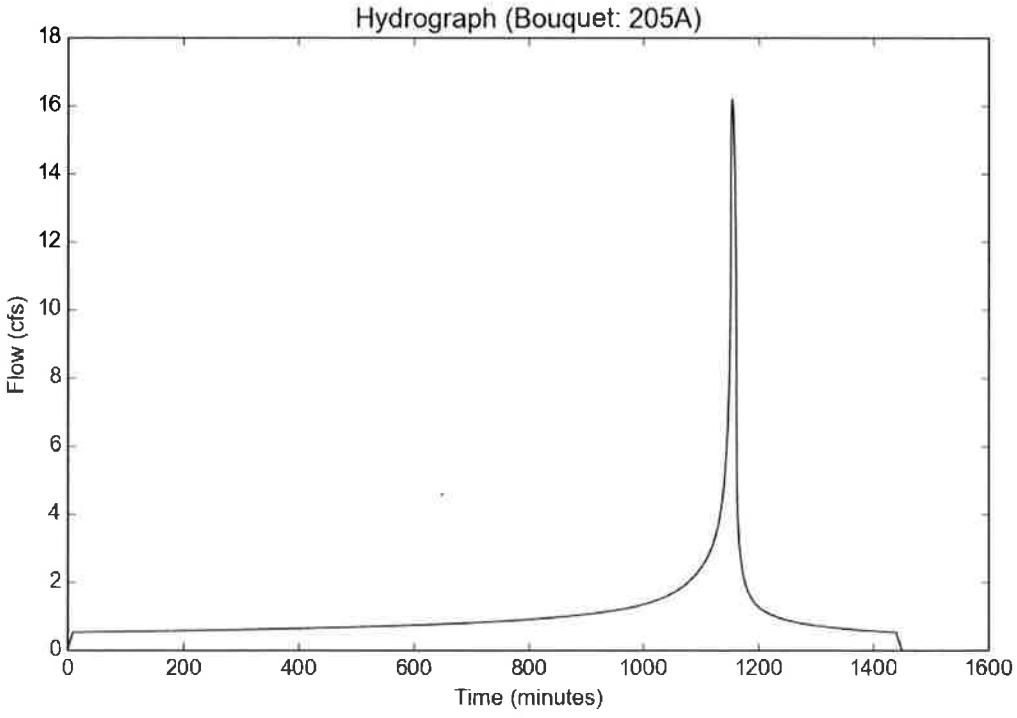
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	205A
Area (ac)	9.6
Flow Path Length (ft)	1228.0
Flow Path Slope (vft/hft)	0.0969
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.42
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.4122
Undeveloped Runoff Coefficient (Cu)	0.5534
Developed Runoff Coefficient (Cd)	0.699
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	16.1857
Burned Peak Flow Rate (cfs)	16.1857
24-Hr Clear Runoff Volume (ac-ft)	2.0944
24-Hr Clear Runoff Volume (cu-ft)	91233.5919



Peak Flow Hydrologic Analysis

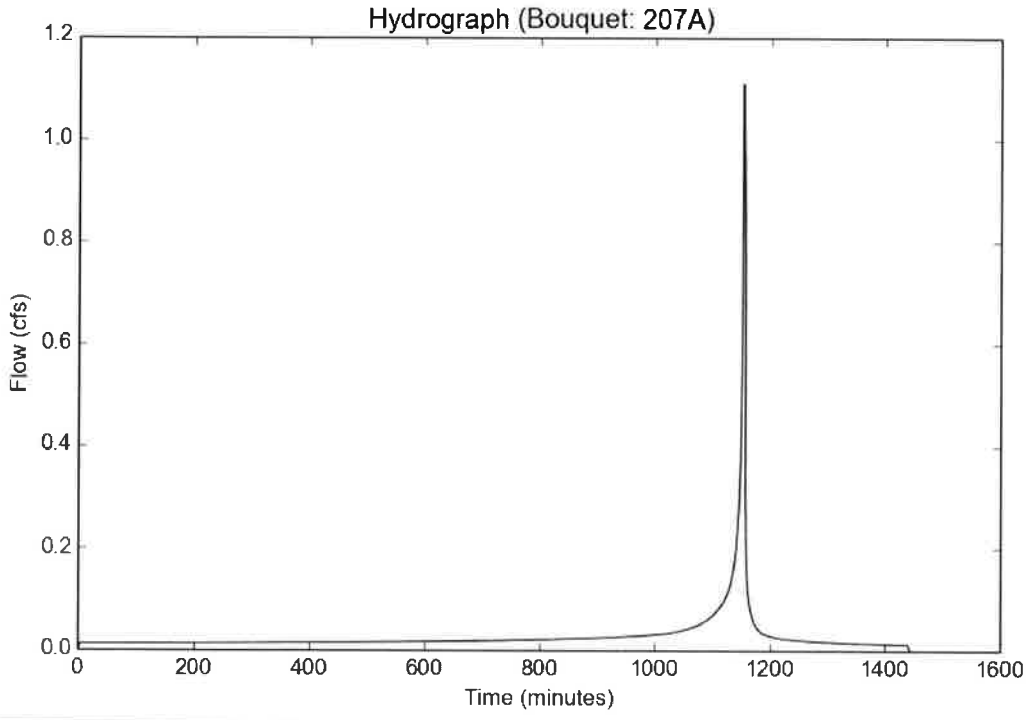
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	207A
Area (ac)	0.6
Flow Path Length (ft)	189.0
Flow Path Slope (vft/hft)	0.159
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.1
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.9168
Peak Intensity (in/hr)	2.9335
Undeveloped Runoff Coefficient (Cu)	0.6006
Developed Runoff Coefficient (Cd)	0.6305
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.1097
Burned Peak Flow Rate (cfs)	1.1097
24-Hr Clear Runoff Volume (ac-ft)	0.0556
24-Hr Clear Runoff Volume (cu-ft)	2423.7786



Peak Flow Hydrologic Analysis

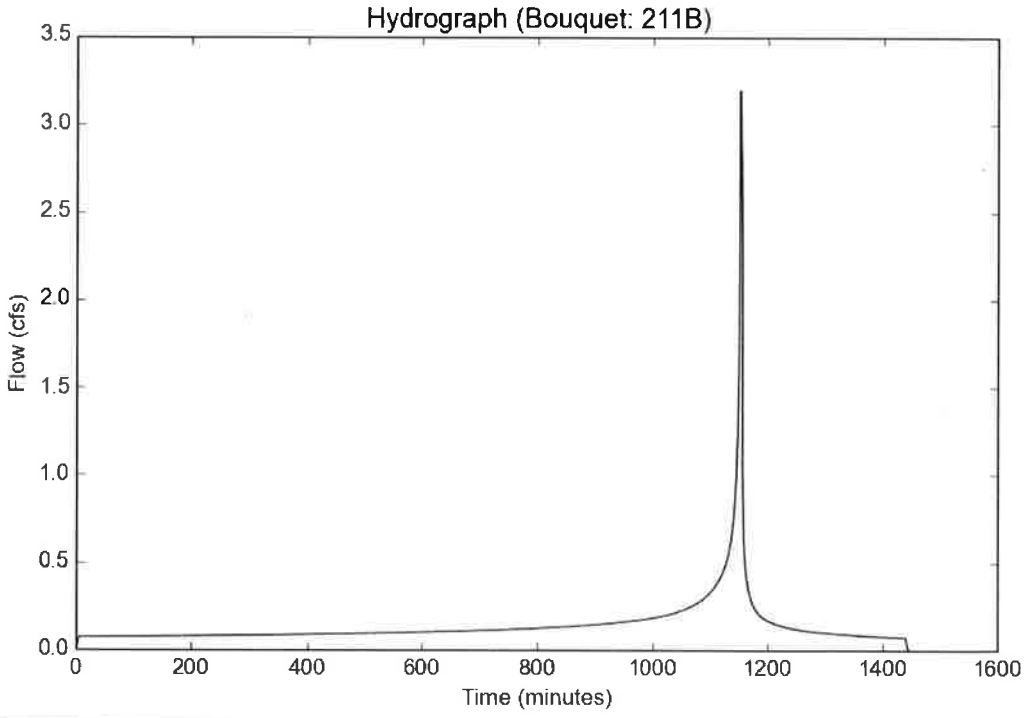
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	211B
Area (ac)	1.5
Flow Path Length (ft)	211.0
Flow Path Slope (vft/hft)	0.166
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.42
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.9168
Peak Intensity (in/hr)	2.9335
Undeveloped Runoff Coefficient (Cu)	0.6006
Developed Runoff Coefficient (Cd)	0.7263
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.196
Burned Peak Flow Rate (cfs)	3.196
24-Hr Clear Runoff Volume (ac-ft)	0.2847
24-Hr Clear Runoff Volume (cu-ft)	12401.2096



Peak Flow Hydrologic Analysis

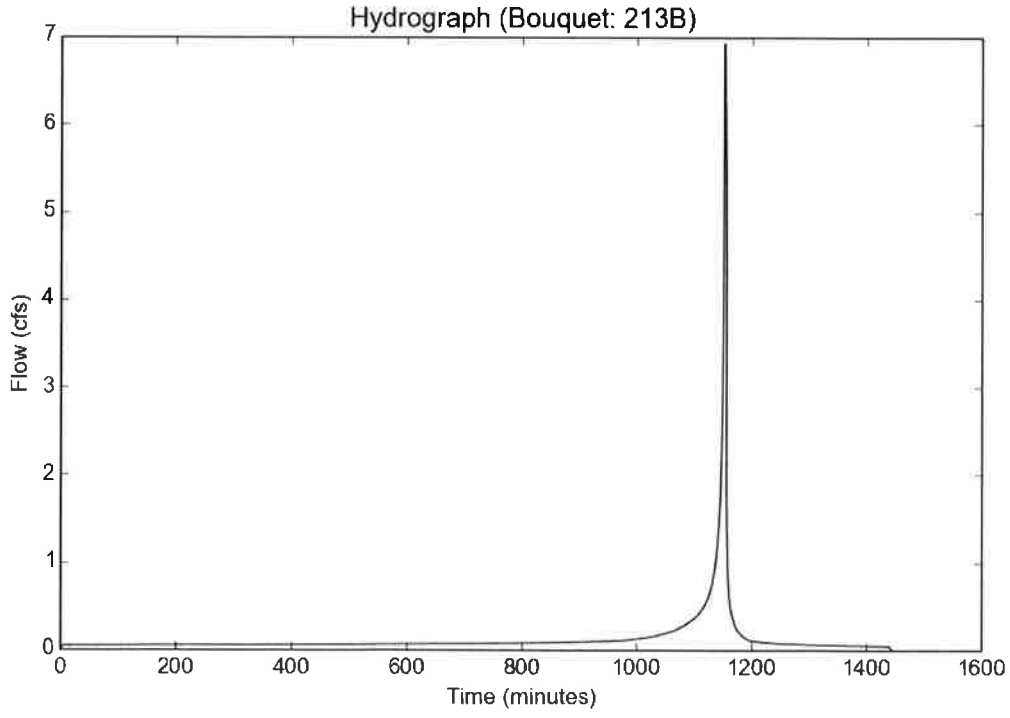
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	213B
Area (ac)	3.3
Flow Path Length (ft)	553.0
Flow Path Slope (vft/hft)	0.28
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	3.3411
Undeveloped Runoff Coefficient (Cu)	0.6255
Developed Runoff Coefficient (Cd)	0.6282
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.9264
Burned Peak Flow Rate (cfs)	6.9264
24-Hr Clear Runoff Volume (ac-ft)	0.2595
24-Hr Clear Runoff Volume (cu-ft)	11303.2923



Peak Flow Hydrologic Analysis

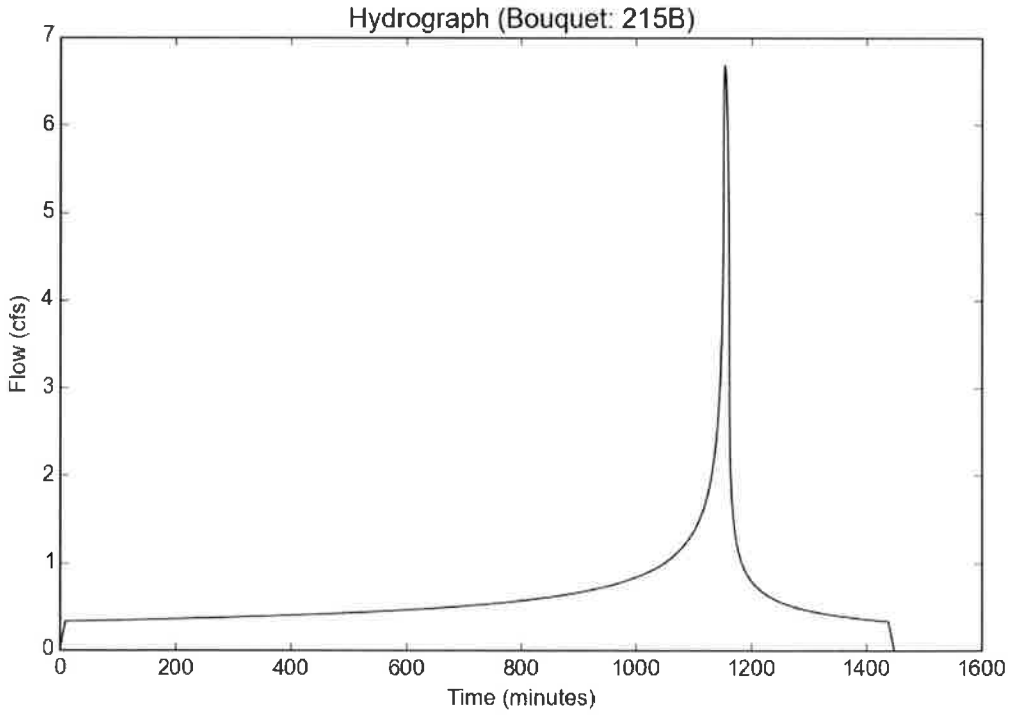
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	215B
Area (ac)	3.2
Flow Path Length (ft)	940.0
Flow Path Slope (vft/hft)	0.0223
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.9
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.4122
Undeveloped Runoff Coefficient (Cu)	0.5534
Developed Runoff Coefficient (Cd)	0.8653
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	6.6795
Burned Peak Flow Rate (cfs)	6.6795
24-Hr Clear Runoff Volume (ac-ft)	1.2235
24-Hr Clear Runoff Volume (cu-ft)	53293.6876



Peak Flow Hydrologic Analysis

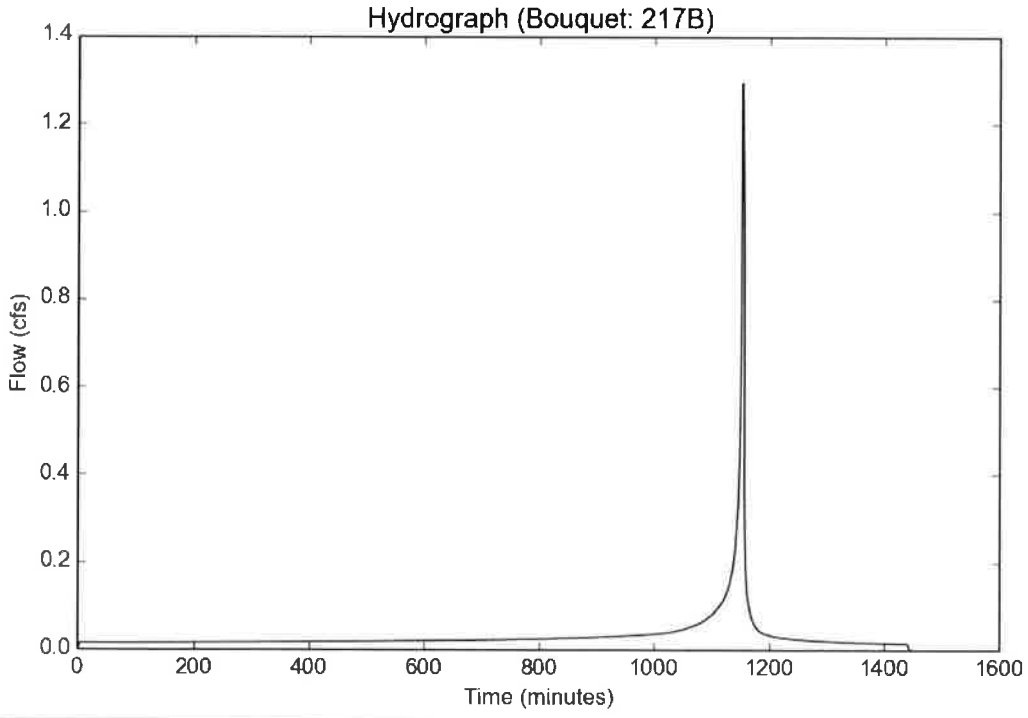
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Qmixed/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	217B
Area (ac)	0.7
Flow Path Length (ft)	229.0
Flow Path Slope (vft/hft)	0.196
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.1
Soil Type	20
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.9168
Peak Intensity (in/hr)	2.9335
Undeveloped Runoff Coefficient (Cu)	0.6006
Developed Runoff Coefficient (Cd)	0.6305
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2947
Burned Peak Flow Rate (cfs)	1.2947
24-Hr Clear Runoff Volume (ac-ft)	0.0649
24-Hr Clear Runoff Volume (cu-ft)	2827.7416



Peak Flow Hydrologic Analysis

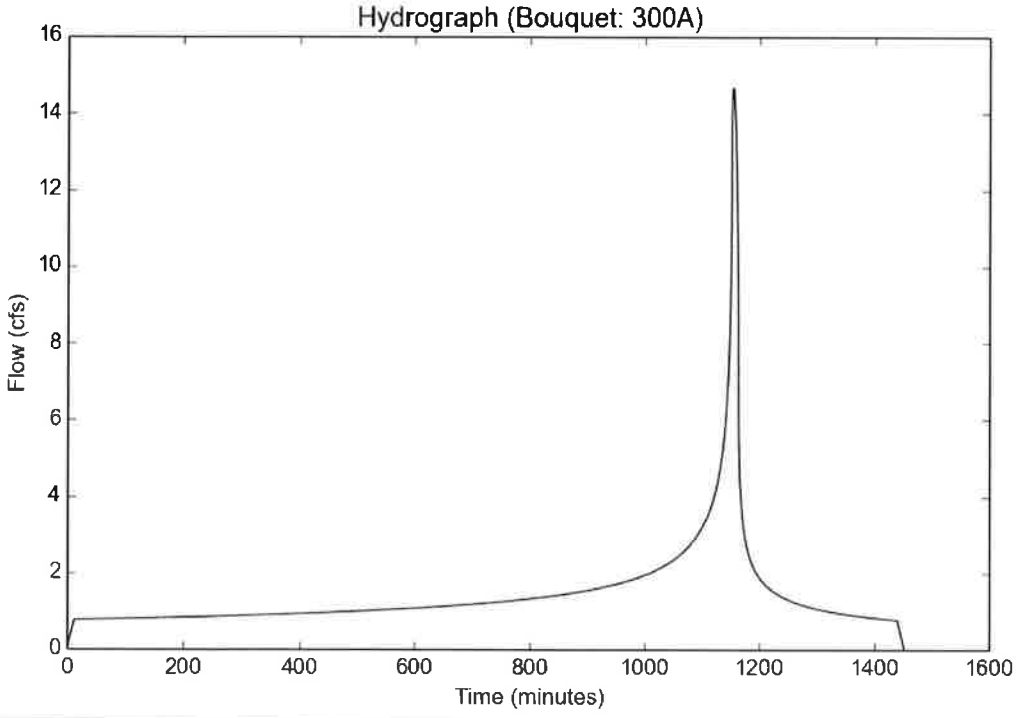
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	300A
Area (ac)	7.8
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.86
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.2141
Undeveloped Runoff Coefficient (Cu)	0.5355
Developed Runoff Coefficient (Cd)	0.849
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	14.6614
Burned Peak Flow Rate (cfs)	14.6614
24-Hr Clear Runoff Volume (ac-ft)	2.8753
24-Hr Clear Runoff Volume (cu-ft)	125246.1069



Peak Flow Hydrologic Analysis

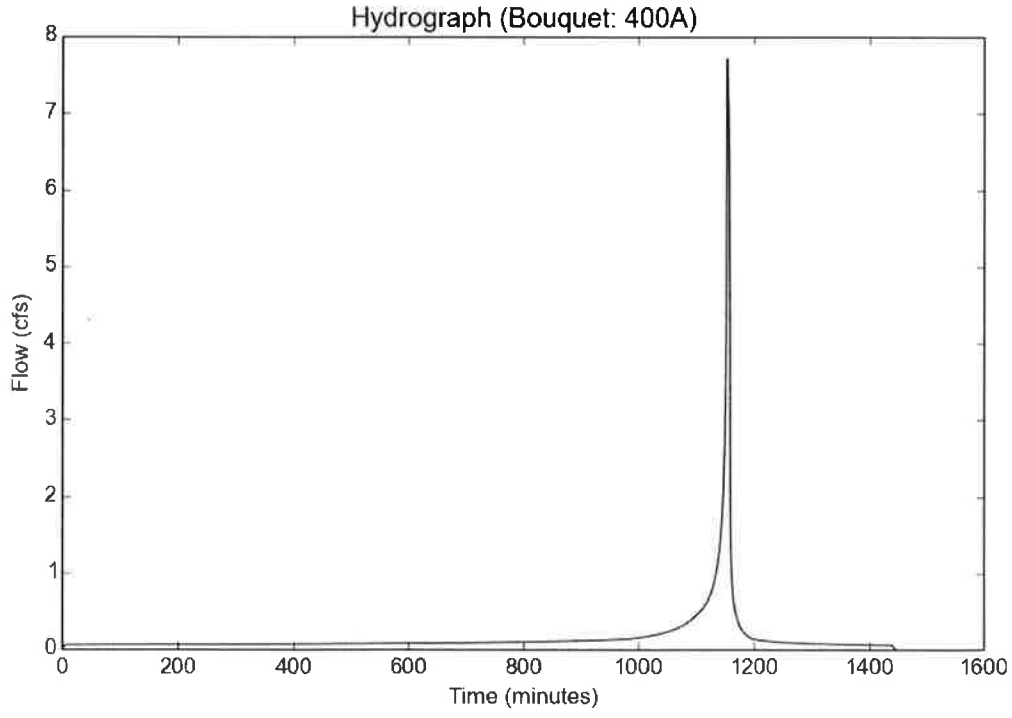
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	400A
Area (ac)	4.1
Flow Path Length (ft)	755.0
Flow Path Slope (vft/hft)	0.369
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	3.0667
Undeveloped Runoff Coefficient (Cu)	0.6103
Developed Runoff Coefficient (Cd)	0.6132
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	7.7097
Burned Peak Flow Rate (cfs)	8.3647
24-Hr Clear Runoff Volume (ac-ft)	0.3219
24-Hr Clear Runoff Volume (cu-ft)	14021.9381



Peak Flow Hydrologic Analysis

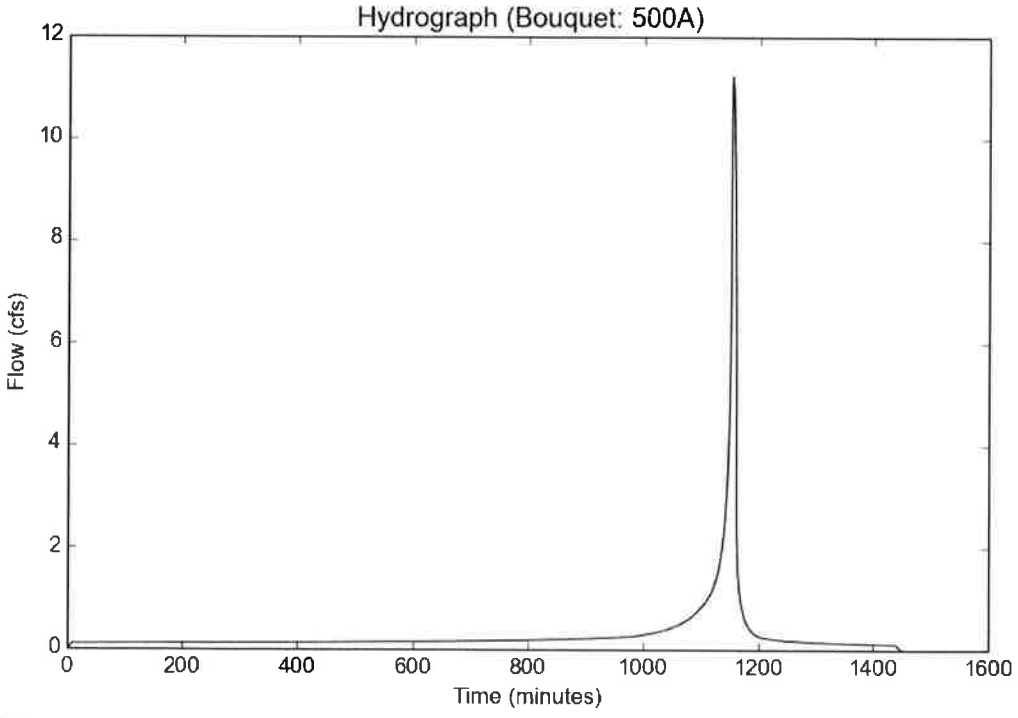
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	500A
Area (ac)	7.8
Flow Path Length (ft)	1034.0
Flow Path Slope (vft/hft)	0.204
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	2.5346
Undeveloped Runoff Coefficient (Cu)	0.5645
Developed Runoff Coefficient (Cd)	0.5678
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	11.2258
Burned Peak Flow Rate (cfs)	12.3421
24-Hr Clear Runoff Volume (ac-ft)	0.6089
24-Hr Clear Runoff Volume (cu-ft)	26523.4382



Peak Flow Hydrologic Analysis

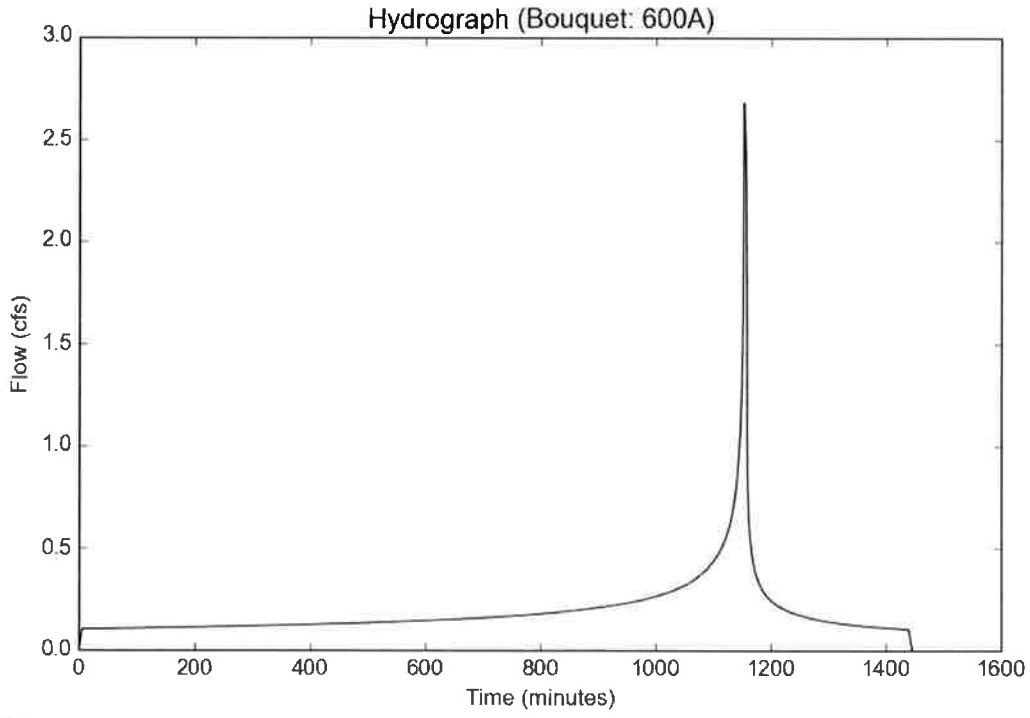
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	600A
Area (ac)	1.0
Flow Path Length (ft)	453.0
Flow Path Slope (vft/hft)	0.024
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.91
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	3.0667
Undeveloped Runoff Coefficient (Cu)	0.6103
Developed Runoff Coefficient (Cd)	0.8739
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	2.6801
Burned Peak Flow Rate (cfs)	2.6801
24-Hr Clear Runoff Volume (ac-ft)	0.3858
24-Hr Clear Runoff Volume (cu-ft)	16805.4606



Peak Flow Hydrologic Analysis

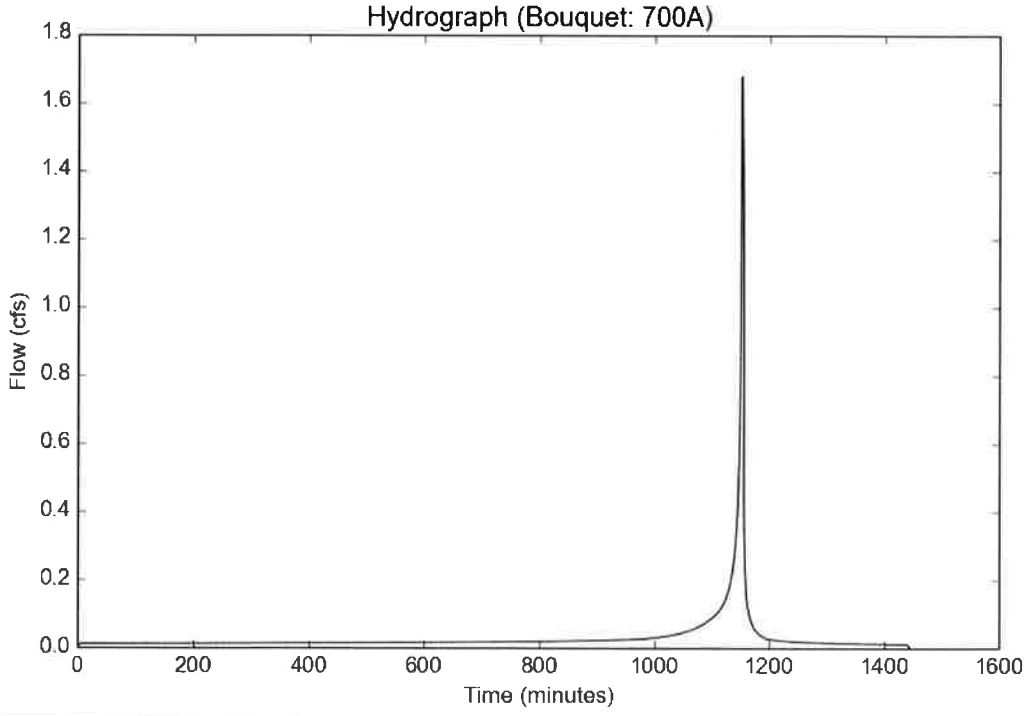
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/Qdesign/Bouquet Report oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	700A
Area (ac)	0.8
Flow Path Length (ft)	145.0
Flow Path Slope (vft/hft)	0.31
50-yr Rainfall Depth (in)	5.6
Percent Impervious	0.01
Soil Type	20
Design Storm Frequency	50-yr
Fire Factor	0.34
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.6
Peak Intensity (in/hr)	3.3411
Undeveloped Runoff Coefficient (Cu)	0.6255
Developed Runoff Coefficient (Cd)	0.6282
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.6791
Burned Peak Flow Rate (cfs)	1.8148
24-Hr Clear Runoff Volume (ac-ft)	0.0629
24-Hr Clear Runoff Volume (cu-ft)	2740.1921



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006     1  104A   20       99A284 1000 01000   3.0
006     1  105A 299  112.0 9A28
006     1  106A   20       99A28
006     1  107A   20 10 2.1 5A284  100 01000   3.0
006     1  108A   20       99A28
006     1  109A   20       99A28
006     1  110A   20 7416.216A28
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LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: X:\engineering\Programs\CIVILD\scr_soilx_34.dat
Bouquet Canyon, Area 200, Prop. DESIGN 50YR-BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
1	101A	.5	1.10	.5	1.10	0	0.	.00000	.00	.00	0.	20	5	A28	.10
1	102A	.0	.00	.5	1.10	4	275.	.01000	3.00	.00	0.	20	99	A28	.00
1	103A	18.3	47.48	18.8	48.51	0	0.	.00000	.00	.00	0.	299	6	A28	.01
1	104A	.0	.00	18.8	48.51	4	1000.	.01000	3.00	.00	0.	20	99	A28	.00
1	105A	12.0	25.30	30.8	69.50	0	0.	.00000	.00	.00	0.	299	9	A28	.01
1	106A	.0	.00	30.8	69.50	0	0.	.00000	.00	.00	0.	20	99	A28	.00
1	107A	2.1	4.62	32.9	72.20	4	100.	.01000	3.00	.00	0.	20	5	A28	.10
1	108A	.0	.00	32.9	71.98	0	0.	.00000	.00	.00	0.	20	99	A28	.00
1	109A	.0	.00	32.9	71.98	0	0.	.00000	.00	.00	0.	20	99	A28	.00
1	110A	16.2	24.97	49.1	96.95	0	0.	.00000	.00	.00	0.	20	16	A28	.74
1	111A	.0	.00	49.1	96.95	0	0.	.00000	.00	.00	0.	20	99	A28	.00

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006     1  204A  20 42 2.6 7A284   30 01000   3.0
006     1  205A  20 42 9.610A28
006     1  206A  20       99A284  350 04000   3.0
006     1  207A  20 10 0.6 5A25
006     1  208A  20       99A284  185 03300   3.0
006     1  209B  20       99A28
006     1  210B  20       99A284   40 02000   3.0
006     1  211B  20 42 1.5 5A25
006     1  212B  20       99A284  450 02000   3.0
006     1  213B 220  1 3.3 5A28
006     1  214B  20       99A284  300 02000   3.0
006     1  215B  20 90 3.210A28
006     1  216B  20       99A284  140 01000   3.0
006     1  217B  20 10 0.7 5A254  100 01000   3.0
006     1  218AB 20         A29
006     1  219A  20       99A29                                  2  2
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MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: X:\engineering\Programs\CIVILD\scr_soilx_

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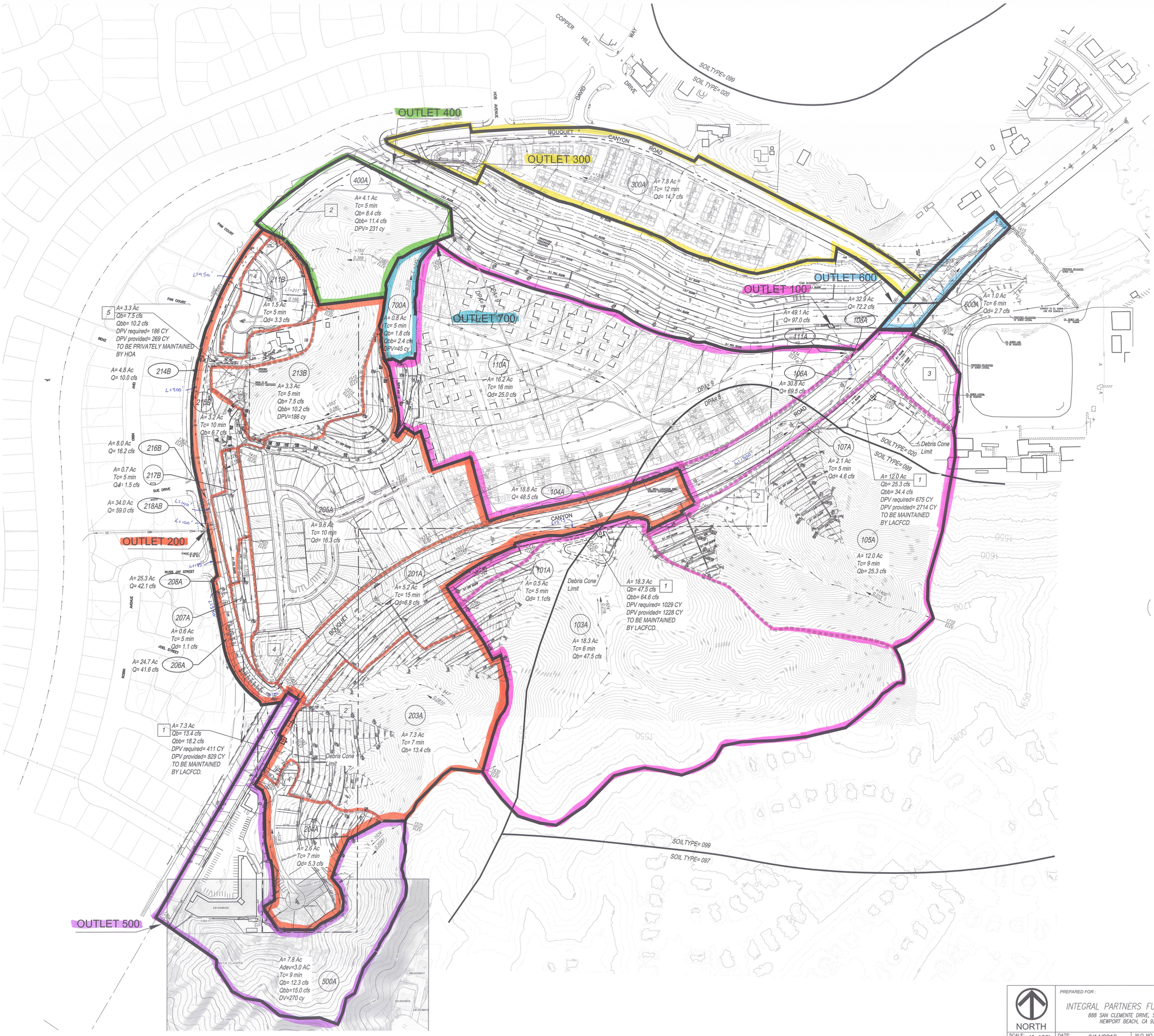
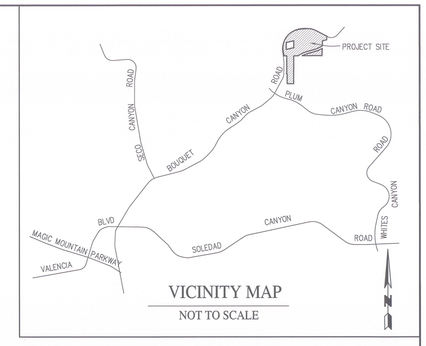
Bouquet Canyon, Area 200, Prop. DESIGN 50- & 25-yr BURNED

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
1 201A	5.2	6.81	5.2	6.81	0	0.	.00000	.00	.00	0.	20	15	A25	.60
1 202A	.0	.00	5.2	6.81	0	0.	.00000	.00	.00	0.	20	99	A28	.00
1 203A	7.3	13.37	12.5	20.09	4	120.	.01000	3.00	.00	0.	220	7	A28	.01
1 204A	2.6	5.28	15.1	25.35	4	30.	.01000	3.00	.00	0.	20	7	A28	.42
1 205A	9.6	16.31	24.7	41.62	0	0.	.00000	.00	.00	0.	20	10	A28	.42
1 206A	.0	.00	24.7	41.62	4	350.	.04000	3.00	.00	0.	20	99	A28	.00
1 207A	.6	1.14	25.3	42.14	0	0.	.00000	.00	.00	0.	20	5	A25	.10
1 208A	.0	.00	25.3	42.14	4	185.	.03300	3.00	.00	0.	20	99	A28	.00
1 209B	.0	.00	.0	.00	0	0.	.00000	.00	.00	0.	20	99	A28	.00
1 210B	.0	.00	.0	.00	4	40.	.02000	3.00	.00	0.	20	99	A28	.00
1 211B	1.5	3.27	1.5	3.27	0	0.	.00000	.00	.00	0.	20	5	A25	.42
1 212B	.0	.00	1.5	3.27	4	450.	.02000	3.00	.00	0.	20	99	A28	.00
1 213B	3.3	7.54	4.8	10.04	0	0.	.00000	.00	.00	0.	220	5	A28	.01
1 214B	.0	.00	4.8	10.04	4	300.	.02000	3.00	.00	0.	20	99	A28	.00
1 215B	3.2	6.69	8.0	16.24	0	0.	.00000	.00	.00	0.	20	10	A28	.90
1 216B	.0	.00	8.0	16.24	4	140.	.01000	3.00	.00	0.	20	99	A28	.00
1 217B	.7	1.33	8.7	16.99	4	100.	.01000	3.00	.00	0.	20	5	A25	.10
1 218AB	8.7	16.92	34.0	59.03	0	0.	.00000	.00	.00	0.	20	0	A29	.00
1 219A	.0	.00	34.0	59.03	0	0.	.00000	.00	.00	0.	20	99	A29	.00





VICINITY MAP

NOT TO SCALE

LEGEND

- MAIN DRAINAGE BOUNDARY
- SUB-AREA BOUNDARY
- FLOW LINE
- TRACT BOUNDARY
- PROPOSED STORM DRAIN PIPE

(3A) & (13AC) .... LOCATION NAMES

A .... AREA IN ACRES, Ac

Qb .... 50-YR, BURNED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs

Qbb .... 50-YR, BURNED & BULKED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs

Qd .... 50-YR OR 25-YR, DESIGN FLOW IN CUBIC FEET PER SECOND, cfs

Qb+d .... MIXED 25- & 50-YR, BURNED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs

Qbb+d .... MIXED 25- & 50-YR, BURNED & BULKED DESIGN FLOW IN CUBIC FEET PER SECOND, cfs

DPV .... DEBRIS PRODUCTION VOLUME IN CUBIC YARDS, cy

[1] .... DEBRIS OR DESILTING BASIN TO BE MAINTAINED BY LACFCD.

[2] .... DEBRIS CARRYING PAVED DITCH WITH 5% MIN SLOPE, OR OTHERWISE SHOWN, & SELF-CLEANING VELOCITY (TO BE PRIVATELY MAINTAINED)

[3] .... INFILTRATION BASIN TO BE MAINTAINED BY LA COUN TY

[4] .... BIOFILTRATION BASIN PER LID PLAN

[5] .... DESILTING INLET PER LID PLAN

FLOODPLAIN NOTES - SEE HYDRAULIC STUDY

1. THE PROJECT IS LOCATED WITHIN A FEMA FLOODPLAIN
2. THE PROJECT IS LOCATED WITHIN A LOS ANGELES COUNTY ORDINANCE FLOODPLAIN..

HYDROLOGY CRITERIA

- DESIGN STORM FREQUENCY:
  50-YR FOR DEVELOPED SUMP & UNDEVELOPED NATURAL AREAS
  25-YR FOR DEVELOPED AREAS.
- DPA ZONE = 8,9
- BASIN NAME = SANTA CLARA
- SOIL TYPE NUMBER = 020,099
- PEAK BULKING FACTOR = 1.36 (FOR AREAS 64 Ac. OR UNDER) - DPA 8
  = 1.27 (FOR AREAS 64 Ac. OR UNDER) - DPA 9

DEBRIS PRODUCTION RATE = 36,000 cy / SQ MI. (FOR AREAS 64 Ac. OR UNDER) - DPA 8
= 16,500 cy / SQ MI. (FOR AREAS 64 Ac. OR UNDER) - DPA 9

- ISOHYET = 5.6" (50-YR, 24-HOUR)
  0.85" (85th Percentile, 24-hr)
- % IMPERVIOUSNESS:
  1% FOR UNDEVELOPED / NATURAL AREAS
  10% GRADED AREAS WITH SLOPE BENCHING
  10% WATER QUALITY AREAS
  42% SINGLE FAMILY RESIDENTIAL
  74% MIXED MULTI-FAMILY RESIDENTIAL
  91% ROADS

GENERAL NOTES

1. STORM DRAIN ALIGNMENTS SHOWN ARE NOT NECESSARILY APPROVED.
2. COMPLY WITH ALL STREET DRAINAGE REQUIREMENTS TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3. DEDICATE THE NECESSARY EASEMENTS FOR THE STORM DRAIN SYSTEM TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS. EASEMENTS TO THE FCD FOR COVERED STORM DRAINS, APPURTENANT STRUCTURES, AND INGRESS & EGRESS PURPOSES SHALL BE DEDICATED OVER ALL PRIVATE DRIVEWAYS AND FIRELANES.
4. PROVIDE VEHICULAR ACCESS TO ALL INLETS AND OUTLETS TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
5. ALL PROPOSED STORM DRAINS & APPURTENANT STRUCTURES TO BE PUBLICLY MAINTAINED UNLESS OTHERWISE NOTED. ALL OTHER DRAINAGE DEVICES TO BE MAINTAINED BY HOA.

BEST MANAGEMENT PRACTICES (BMP'S) LIST

1. VEGETATE SLOPES WITH NATIVE OR DROUGHT TOLERANT VEGETATION TO MINIMIZE EROSION.

PROPOSED CONDITION
HYDROLOGY
TENTATIVE TRACT NO. 82126
IN THE CITY OF SANTA CLARITA

NORTH

SCALE: 1"=100'

PREPARED FOR :

INTEGRAL PARTNERS FUNDING, LLC
888 SAN CLEMENTE DRIVE, SUITE 100
NEWPORT BEACH, CA 92660

DATE: 6/14/2019

W.O. NO.: 5117-006

PREPARED BY :

SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd. #100, Van Nuys, CA 91411
Phone : (818) 787- 8550, Fax : (818) 901-7451
www.sikand.com, E-mail: info@sikand.com

REGISTERED PROFESSIONAL ENGINEER
DOUG FARMER
No.49041
Exp. 09-30-2020
CIVIL
STATE OF CALIFORNIA

SHEET 1 OF 1 SHEETS

SECTION 5

DPV & Bulking Calculation (Subarea)

Bouquet Canyon

Existing Condition, Design Frequency (50-yr)

AREA A

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
101A	8	22.3	22.3	0.035	1.360	28.1	38.2	36,000	1,254
102A	8	33.6	33.6	0.053	1.360	56.1	76.3	36,000	1,890
200A	8	26.1	26.1	0.041	1.360	34.6	47.1	36,000	1,468
300A	8	6.6	6.6	0.010	1.270	7.3	9.3	16,500	170
400A	8	1.1	1.1	0.002	1.360	2.5	3.4	36,000	62
500A	8	13.0	10.6	0.017	1.360	19.3	26.0	36,000	596
600A	8	1.0	1.0	0.002	1.270	1.6	2.0	16,500	26

DPV & Bulking Calculation (Subarea)

Bouquet Canyon

Proposed Condition, Design Frequency (50-yr)

AREA A

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
103A	8	18.3	18.3	0.029	1.360	47.5	64.6	36,000	1,029
105A	8	12.0	12.0	0.019	1.360	25.3	34.4	36,000	675
203A	8	7.3	7.3	0.011	1.360	13.4	18.2	36,000	411
213B	8	3.3	3.3	0.005	1.360	7.5	10.2	36,000	186
400A	8	4.1	4.1	0.006	1.360	8.4	11.4	36,000	231
500A	8	7.8	4.8	0.008	1.360	12.3	15.0	36,000	270
700A	8	0.8	0.8	0.001	1.360	1.8	2.4	36,000	45

Debris Basin Volume Calculation

VTTM 82126, Bouquet
Proposed Condition

Node 103A

Elevation	Area (ft^2)	Volume (ft^3)	Volume (cy)	Capacity (cy)
1430	6,308	-	-	-
1432	8,248	14,556.00	539	539
1434	10,340	18,588.00	688	1,228

Debris Production Volume Required (c.y.) = **1,029**
Basin Capacity Provided (c.y.) = **1,228**
Debris Cone Elevation = **1,433.4**

Elevation	Volume
1432.0	539
X	1029
1434.0	1228
X=	**1433.4**

Node 105A

Elevation	Area (ft^2)	Volume (ft^3)	Volume (cy)	Capacity (cy)
1408	9,538	-	-	-
1410	18,756	28,294.00	1,048	1,048
1412	26,226	44,982.00	1,666	2,714

Debris Production Volume Required (c.y.) = **675**
Basin Capacity Provided (c.y.) = **2,714**
Debris Cone Elevation = **1,409.3**

Elevation	Volume
1408.0	0
X	675
1410.0	1048
X=	**1409.3**

Node 203A

Elevation	Area (ft^2)	Volume (ft^3)	Volume (cy)	Capacity (cy)
1392	3,601	-	-	-
1394	5,608	9,209.00	341	341
1396	7,567	13,175.00	488	829

Debris Production Volume Required (c.y.) = **383**
Basin Capacity Provided (c.y.) = **829**
Debris Cone Elevation = **1,394.2**

Elevation	Volume
1394.0	341
X	383
1396.0	829
X=	**1394.2**

Node 213B

Elevation	Area (ft^2)	Volume (ft^3)	Volume (cy)	Capacity (cy)
1365	1,064	-	-	-
1367	1,771	2,835.00	105	105
1369	2,653	4,424.00	164	269

Debris Production Volume Required (c.y.) = **186**
Basin Capacity Provided (c.y.) = **269**
Debris Cone Elevation = **1,368.0**

Elevation	Volume
1367.0	105
X	186
1369.0	269
X=	**1368.0**

Appendix G:
Hydrology Report and Urban Stormwater Mitigation Plan

Part 2: Urban Stormwater Mitigation Plan

USMP
URBAN STORMWATER MITIGATION PLAN

FOR:

Tentative Tract 82126
Bouquet Canyon

FOR OWNER:

Integral Partners Funding, LLC
888 San Clemente Drive Suite 100
Newport Beach, CA 92660

PREPARED BY:

SIKAND ENGINEERING ASSOCIATES
15230 Burbank Boulevard, Suite 100
Van Nuys, California 91411
818-787-8550

Doug Farmer, Civil Engineer

Submittal Date: November 11, 2019

W.O. 5117-006

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Project Description
Project Location
Pre- and Post-Development Summary
Priority Planning Project Type

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2. Conserve Natural Areas
3. Minimize Stormwater Pollutants of Concern
4. Protect slopes and Channels
5. Provide Storm Drain System Stenciling and Signage
6. Properly Design Outdoor Material Storage Areas
7. Properly Design Trash Storage Areas
8. Provide Proof of Ongoing BMP Maintenance
9. Water Quality/Flow Reduction Management Criteria
   Alternative Compliance for Technical Infeasibility
10. Waiver
11. Limitation of Use of Infiltration BMPs

APPENDICES

Appendix A: Vicinity Map
Appendix B: Site and Project Plans
- LID Map

Appendix C: Soils Report
Appendix D: BMP Details and Calculations
Appendix E: Maintenance Covenant
Appendix F: BMP Inspection Instructions
Appendix G: Stenciling and Signage
Appendix H: Table 2-1, CASQA New Development & Redevelopment BMP Handbook

INTRODUCTION

Project Description

The project is a multifamily residential project known as Tract 82126, in the City of Santa Clarita, California. The project is located along Bouquet Canyon Road. Proposed improvements will consist of 305 detached condominium units, 63 single family homes, a recreation center, with associated private streets, storm drain, utilities, and landscaping.

Proposed water quality will be provided on the site through the use of 2 infiltration basins, 3 biofiltration basins and CDS units for pre-treatment purposes. The infiltration basins will be located adjacent to Bouquet Creek adjacent to Bouquet Canyon Road and northerly of Bouquet Creek on the east side of the project. The biofiltration basins will be located near the intersection of Pam Court and existing Bouquet Canyon Road, at the southeasterly corner of the project where the realignment of Bouquet Canyon Road begins and at the southerly most end of the project near the existing commercial development on Bouquet Canyon Road.

Pollutants of Concern related to the proposed development are based upon Table 2-1, CASQA New Development and Redevelopment BMP Handbook, and include Pathogens, Nutrients, Pesticides, Sediments, Trash & Debris, Oxygen Demanding Substances and Oil & Grease. Two Continuous Deflection System (CDS) units for pretreatment along with 3 Filterra units, 2 infiltration basins and 3 biofiltration basins are proposed for the project site that will provide water quality treatment for the Pollutants of Concern. Infiltration has a high removal effectiveness for targeted pollutants. Pollutants are anticipated to be generated by the building rooftops, private driveways from vehicle oil and grease, landscaping fertilizers, and the trash from litter.

Project Location

- Site Address: Bouquet Canyon Road between Russ Jay Street and David Way Santa Clarita, CA 91355
- APN: 2812-008-003,-013,-022 & -031
- Thomas Guide: T.G. 4461 D4
- Project Size: 54.4 Acres
- Watershed Size: 108.0 Acres

Pre and Post Development Summary

Project area for the watershed for the site is summarized below showing the imperviousness for the pre- and post-developed conditions:

	Pre-Development	Post-Development
Pervious Area (Ac.)	108.0	78.3
Pervious % of total project area	100%	72.5%
Impervious Area (Ac.)	0	29.7
Impervious % of total project area	0%	27.5%
Total Area (Ac.)	108.0	108.0

These totals are for the entire tributary watershed area including offsite and onsite natural and manufactured slopes and the proposed channel. These areas are not subject to LID since they do not contribute to the pollutants of concern and are therefore not included within the SWQDv calculations. 40.6 acres of the 54.4 acre site will contain new impervious surfaces which will be treated within the project's BMP devices. The remaining 13.8 acres are manufactured slopes which are considered to be self treating.

Priority Planning Project Type

The Priority Planning Project Type for the proposed development includes:

- New and redevelopment projects above 1 acre or 10,000 square feet of impervious area.

SUSMP SPECIFIC REQUIREMENTS

1. Hydromodification Control Criteria

   Requirement:
   The project is required to demonstrate hydromodification control in natural drainage systems by maintaining the Erosion Potential (Ep) in streams at a value of 1, unless an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries.

   Implementation:
   The project discharges into storm drain pipes that drain into Bouquet Creek which is lined and from there discharge to the Santa Clara River which is considered not susceptible to hydromodification impacts due to having a 100 year flow rate greater than 25,000 cfs (see attached highlighted section 8.2 of the Los Angeles County LID manual for reference).

2. Conserve Natural Areas

   Requirement:

A. The following items are required and must be implemented in the site layout during the design and approval process, consistent with applicable General Plan and local plan policies:
   - Concentrate or cluster development on portions of a site while leaving the remaining land in a natural undisturbed condition.
   - Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
   - Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
   - Preserve riparian areas and wetlands.

B. Provide implementation and maintenance of individual BMP's including inspection and maintenance frequency, inspection criteria, and the responsible entity or party.
C. Provide routing of hardscaped area drainage to natural areas for infiltration and treatment.

Implementation:

A. The project site borders existing development which includes single family residential to the North and West. The project site borders natural open space on the easterly and southeasterly side.

   Landscape Plans will be prepared as part of the project to meet City landscape requirements.

   There are existing riparian and wetland areas within Bouquet Creek. These areas will be replaced at the current location with buffer area on either side as part of the mitigation required for the jurisdictional permits (Army Corps of Engineers, California Department of Fish and Wildlife, Regional Water Quality Control Board) which will be obtained prior to grading this site. This area including the buffer area will be 1.3 acres.

B. BMP's have been implemented as part of the proposed project through the use of both infiltration and biofiltration basins. General maintenance should include inspection of landscaping each month, and maintenance to inspect for soil erosion, plant damage, sediment, and repair/unclogging of grates and underdrains to be performed semi- annually. Inspection frequency, maintenance frequency, and inspection criteria have been included in Appendix F, BMP Inspection Instructions.

   BMP's will be maintained by the City of Santa Clarita. The Property Owner (Integral Partners Funding, LLC) will initially be the responsible party for the Operations and Maintenance of the proposed BMP facilities. Upon formation of a Drainage Benefit Assessment Area (DBAA), the city will be the responsible party with funding from DBAA. Refer to Appendix E for Maintenance Covenant.

C. Initial runoff from private driveway and roof drainage will be conveyed to proposed CDS units for pretreatment and to basins for infiltration and / or biofiltration basins for treatment.

3. Minimize Stormwater Pollutants of Concern

Requirement:

A. Identify potential pollutants of concern associated with the proposed project uses.
B. Identify the presence of legacy pesticides, nutrients, or hazardous substances in the site's soils as a result of past uses, if applicable.
C. Provide a narrative describing one or more structural or treatment control BMP's of medium or high effectiveness in reducing the pollutants of concern identified. Refer to the CASQA New Development and Redevelopment Handbook for BMP effectiveness ratings.

Implementation:

A. Pollutants of Concern related to the proposed development are based upon Table 2-1, CASQA New Development and Redevelopment BMP Handbook:
    - Anticipated pollutants: Pathogens, Nutrients, Pesticides, Sediments, Trash and Debris, Oxygen Demanding Substances, and Oil and Grease.
B. The existing condition of the site is not known to be subject to any obvious environmental hazards.
C. To minimize the storm water pollutants, the RET-2 Infiltration Basin BMP is proposed for the project. This BMP will prevent pollutants in the SWQDv from being discharged offsite since the SWQDv will infiltrate through the use of this device. Three of the areas (200A, 400A and 500A) drain to sites where infiltration is technically infeasible due to low in-situ infiltration rates. Per the LID Manual Section 7.3 and GMED Policy 200.1 infiltration is considered to be technically infeasible when the in-situ infiltration rate is less than 0.3 inches per hour. In these areas the BIO-1 biofiltration basin will be used. This device will treat 1.5 times the SWQDv through a variety of natural mechanisms as stormwater flows through vegetation root zone. To provide pretreatment to reduce trash, sediment and oil and grease from entering the Infiltration Basin, T-6 Proprietary Devices, Continuous Deflective Separation Units (CDS) are also proposed for this project. This BMP will remove trash, debris and coarse sediment from incoming flows using screening, gravity settling and centrifugal forces generated by forcing the influent into a circular motion. To treat Bouquet Canyon Road where it joins the existing road on the north as well as the easterly side of existing Bouquet Canyon Road, Filterra units are proposed. Per the manufacturer "Stormwater runoff enters the Filterra system through a curb-inlet opening or pipe and flows through a specially designed filter media mixture contained in a landscaped concrete container. The filter media captures and immobilizes pollutants; those pollutants

are then decomposed, volatilized and incorporated into the biomass of the Filterra system's micro/macro fauna and flora. Stormwater runoff flows through the media and into an underdrain system at the bottom of the container, where the treated water is discharged." This combination of BMP's has a high removal effectiveness on all of the above pollutants.

4. Protect Slopes and Channels

Requirement:

A. Provide a narrative describing each of the "protect slopes and channels" site design BMP concepts incorporated into the project plans.
B. Provide an explanation as to why a BMP concept cannot be implemented, if applicable.
C. BMP's have been implemented as part of the proposed project through the use of landscape and irrigation of manufactured slopes. General maintenance should include inspection of landscaping each month,

Implementation:

A. The site is generally flat, however there are graded slopes on the southerly and easterly side of the project. The proposed slopes will be protected utilizing landscape and irrigation methods. Bouquet Creek will be channelized with a reinforced concrete trapezoidal channel to allow offsite upstream flows to go through the project site.
B. Landscape and irrigation shall be constructed to provide protection of the proposed slopes.
C. BMP's have been implemented for the proposed slope through the use of landscape and irrigation. General maintenance should include inspection of landscaping and irrigation each month, that can be performed by the maintenance landscape contractor. BMP's will be privately maintained. The Property Owner (Integral Partners Funding, LLC) will initially be the responsible party for the operations and Maintenance of the proposed BMP facilities. Upon formation of the Homeowner's Association (HOA), they will be the responsible party. Refer to Appendix E for Maintenance Covenant.

5. Provide Storm Drain System Stenciling and Signage

Requirement:

A. Provide a narrative that states the number of inlets on the project site.
B. Provide a sample of all stencils and signage to be used on the project site.
C. Provide a sample of prohibitive language such as "No Dumping – Drains to River" and /or graphical icons to discourage illegal dumping.

Implementation:

A. Multiple catch basin inlets are proposed for the project site.

B. A sample of the proposed stencil and signage to be used on the project site has been included in Appendix G.
C. Language that states, "No Dumping – Drains to River", is included in the proposed stenciling for the project site.

6. Properly Design Outdoor Material Storage Areas

Requirement:

A. Provide a narrative describing the materials to be stored that have the potential to contaminate stormwater runoff.
B. Identify all enclosures or structures that will be provided for material storage to prevent contact with runoff or spillage to the stormwater conveyance system.
C. Demonstrate that the material storage area is paved and sufficiently impervious to contain leaks and spills within a secondary containment area.
D. Demonstrate that the material storage area has a roof or awning to minimize collection of stormwater within the secondary containment area.

Implementation:

Outdoor material storage areas have not been proposed as part of this project.

7. Properly Design Trash Storage Areas

Requirement:

A. Provide a narrative describing the design of onsite trash storage areas.
B. Demonstrate that drainage from adjoining roofs and pavement is diverted around the trash container areas.
C. Demonstrate that trash container areas are screened or walled to prevent offsite transport of trash and has a solid roof to prevent contact with stormwater.

Implementation:

No onsite trash storage areas are proposed as part of this project.

8. Provide proof of Ongoing BMP Maintenance

Requirement:

A. Identify each BMP that requires operation and maintenance.
B. Provide a thorough description of O&M activities, the O&M process, a maintenance schedule for all BMPs, and the handling and placement of any wastes.
C. Provide a City of Santa Clarita Maintenance Covenant signed by the current owner of the property, notarized, and recorded at the Los Angeles County Registrar-Recorder/County Clerk's office.

D. Identify the parties responsible for O&M and provide a written agreement with the entities responsible for O&M. (Covenant and Agreement, HOA, POA, CC&Rs, formation of an assessment or maintenance district, etc). Copies of these supporting documents are included in an Appendix.
E. Identifies self-inspection and recordkeeping requirements for the BMPS including responsible parties.

Implementation:

A. All infiltration basins, biofiltration basins and CDS units will require operation and maintenance. Refer to LID Map for locations.
B. O&M activities include inspection and maintenance of the proposed infiltration basins, biofiltration basins and CDS Units

   Inspection:

   1. Conduct regular inspection.

   Maintenance:

   1. Monthly: Litter and debris should be removed.
   2. After Rain Events: Inspect infiltration and biobasins to ensure that water infitrates into the subsurface completely within maximum retention time of 96 hours. If water is present in the basins more than 96 hours after a major storm the basins may be clogged and require the following maintenance activities.
      a. Check for debris/ sediment accumulation and remove sediment (if any) and evaluate potential sources of sediment and vegetative or other debris.
      b. Determine if it is necessary to remove the top layer of native soil to restore infiltrative capacity.
   3. As Needed: Eliminate standing water to prevent vector breeding
   4. Inspect and maintain vegetation as need to sustain the aesthetic appearance of the site.

   Refer to CASQA and LA County Maintenance and Inspection Requirements outlined in Appendix F.
C. Maintenance Covenant has been provided in Appendix E.
D. The Property Owner (Integral Partners Funding, LLC) will initially be the responsible party for the operations and Maintenance of the proposed BMP facilities. Upon formation of the Homeowner's Association (HOA), they will be the responsible party. Refer to Appendix E.
E. Self-inspection and recordkeeping requirements have been identified in Appendix F, BMP Inspection Instructions.

9. Water Quality/Flow Reduction/ Resources Management Criteria

Requirement:

A. Provide a narrative describing one or more structural or treatment control BMPs of medium or high effectiveness in reducing the pollutants of concern identified.
B. Demonstrate that selected BMPs are properly designed to treat and infiltrate the stormwater runoff generated by the project site.
C. Provide a hydrologic analysis to retain onsite the SWQDv for the 0.75-inch, 24-hour rain event or the 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyetal map, whichever is greater. Supporting details and Tc for each subarea should be included.
D. Bioretention and biofiltration systems meet the design specifications provided in Attachment H of the Los Angeles County MS4 NPDES permit.
E. Demonstrate the evaluation of the maximum potential for onsite retention considering evapotranspiration from green roofs and rainfall harvest and use.
F. Provide site specific hydraulic calculations along with the recommended structural BMP manufacturer's product specifications to demonstrate the BMPs will adequately handle the SWQDv, minimum design flow required for treatment, and the proposed project improvements provide the required minimum level of flood protection.
G. Demonstrates measures to control peak flow discharge to provide stream channel and over bank flood protection.

Implementation:

A. Two infiltration basins, three biofiltration basins and one CDS unit for pretreatment and storage pipes are proposed for the project site will be designed per County of Los Angeles Department of Public Works, Low Impact Development, RET-2, BIO-1 and T-6 standards, and Attachment H of the Los Angeles County MS4 NPDES Permit. To minimize the storm water pollutants, the RET-2 Infiltration Basin BMP is proposed for the project. This BMP will prevent pollutants in the SWQDv from being discharged offsite since the SWQDv will infiltrate through the use of this device. Where infiltration is infeasible, the BIO-1 biofiltration basin will be used. This device will treat 1.5 times the SWQDv through a variety of natural mechanisms as stormwater flows through vegetation root zone. To provide pretreatment to reduce trash, sediment and oil and grease from entering the infiltration basins, a T-6 Propietary Device, Continuous Deflective Separation Unit (CDS) is also proposed for this project. This BMP will remove trash, debris and coarse sediment from incoming flows using screening, gravity settling and centrifugal forces generated by forcing the influent into a circular motion. To treat Bouquet Canyon Road where it joins the existing road on the north as well as the easterly side of existing Bouquet Canyon Road, Filterra units are proposed. Per the manufacturer "Stormwater runoff enters the Filterra system through a curb-inlet opening or pipe and flows through a specially designed filter media mixture contained in a landscaped concrete container. The filter media captures and immobilizes pollutants; those pollutants are then decomposed, volatilized and incorporated into the biomass of the Filterra system's micro/macro fauna and flora. Stormwater runoff flows through the media and into an underdrain system at the bottom of the container, where the

treated water is discharged." This combination of BMP's has a high removal effectiveness on all of the above pollutants.

B. BMPs are properly designed to treat and infiltrate the stormwater runoff generated by the project site. BMP calculations are based on a required square footage that provides an associated infiltration and storage volume for each treatment facility. Calculations supporting the required mitigation volume and volume provided for each BMP can be found in Appendix D, BMP Details and Calculations. The results are as follows:

Area 100A:
Storage Required = 0.86 Acre Feet = 37,482 cf
Storage Provided = 1.75 Acre Feet = 76,230 cf

Area 300A:
Storage Required = 0.38 Acre Feet = 16,517 cf
Storage Provided = 0.38 Acre Feet = 16,517 cf

Area 200A:
Storage Required = 0.53 Acre Feet x 1.5 = 0.79 Acre Feet = 34,621 cf
Volume Treated = 1.14 Acre Feet = 49,832 cf

Area 400A:
Storage Required = 0.07 Acre Feet x 1.5 = 0.10 Acre Feet = 4,446 cf
Volume Treated = 0.29 Acre Feet = 12,483 cf

Area 500A:
Storage Required = 0.05 Acre Feet x 1.5 = 0.07 Acre Feet = 3,201 cf
Volume Treated = 0.11 Acre Feet = 4,953 cf

Area 600A:
Storage Required = 0.07 Acre Feet x 1.5 = 0.10 Acre Feet = 4,560 cf
Volume Treated = 0.11 Acre Feet = 4,953 cf

C. Hydrocalc was utilized to determine the Tc's based on the 85th percentile, 24-hour rain event. A precipitation depth of 0.85" was determined from the Los Angeles County 85th percentile precipitation isohyetal map. A copy of the map and Tc results have been included in Appendix D.
D. Infiltration systems meet the design specifications provided in Attachment H of the Los Angeles County MS4 NPDES permit.
E. Since infiltration through the use of infiltration basins is being used and is considered the preferred alternative for BMP devices, evapotranspiration from green roofs and rainfall harvest were not considered as a BMP design element for water quality treatment.

F. Calculations to support the BMPs have been adequately designed to handle the SWQDv and the Qpm have been included in Appendix D. Storm drain facilities for the proposed project improvements will be sized to meet the City's required minimum level of flood protection.
G. The project directly discharges to Bouquet Creek which discharges to the Santa Clara River which is exempt from Erosion Potential as discussed in Section 1.

10. Provisions Applicable to Individual Priority Project Categories

A. SINGLE FAMILY HILLSIDE HOME

Roof runoff and surface flows of each condominium will be directed through rear yard and side yard swales through landscaped yards prior to being discharged into the storm drain system.

B. 100,000 SQUARE FOOT COMMERCIAL DEVELOPMENTS

1. LOADING/UNLOADING DOCK AREAS – Not applicable

2. REPAIR/MAINTENANCE BAYS – Not applicable

3. VEHICLE/EQUIPMENT WASH AREAS – Not applicable

C. RESTAURANTS – Not applicable

D. RETAIL GASOLINE OUTLETS – Not applicable

E. AUTOMOTIVE REPAIR SHOPS – Not applicable

F. PARKING LOT – Not applicable

11. Waiver

Requirement:

A. Provide a narrative describing all structural or treatment control BMPs considered and rejected as infeasible.
B. Demonstrates that the project has an extreme limitation of space for treatment.

Implementation:

This development does not require a waiver for impracticability. Infiltration is feasible per the site geotechnical report.

12. Limitation of Use of infiltration BMPs

Requirement:

Provide a narrative and demonstrate any infiltration BMPs considered at the project site and rejected as infeasible.

Implementation:

The mitigation measures for this project include infiltration BMPs.

SECTION 8. HYDROMODIFICATION REQUIREMENTS

8.1. Introduction

All Designated and Non-Designated projects located within natural drainage systems that have not been improved (e.g., channelized or armored with concrete, shotcrete, or rip-rap) or drainage systems that are tributary to a natural drainage system, except as excluded, are required to implement hydromodification controls. The project must fully mitigate off-site drainage impacts caused by hydromodification and changes in water quality, flow velocity, flow volume, and depth/width of flow. The following hydromodification control criteria must be implemented by project applicants to control potential adverse impacts of changes in hydrology that may result from projects located within natural drainage systems.

8.2. Exemptions to Hydromodification Requirements

Projects may be exempt from implementation of hydromodification control measures where assessments of downstream channel conditions and proposed discharge hydrology indicate that adverse hydromodification effects to beneficial uses of natural drainage systems are unlikely. The Director of Public Works may grant exemptions for requiring hydromodification control measures for the following types of projects:

- The replacement, maintenance, or repair of an existing permitted publicly-maintained flood control facility, storm drain, or transportation network;
- Redevelopment of a previously developed site in an urbanized area that does not increase the effective impervious area or decrease the infiltration capacity of pervious areas compared to the pre-project conditions;
- Projects that have any increased discharge directly or through a storm drain to a sump, lake, area under tidal influence, into a waterway that has an estimated hundred (100)-year peak flow of 25,000 cfs or more, or other receiving water that is not susceptible to hydromodification impacts;
- Projects that discharge directly or through a storm drain into concrete or otherwise engineered channel (i.e., channelized or armored with rip-rap, shotcrete), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts.
- Non-Designated Project disturbing less than 1 acre or creating less than 10,000 square feet of new impervious area; or
- Single-family homes that incorporate LID BMPs in accordance with the LID Standards Manual.

8.3. Frequency Analyses

Projects required to analyze for hydromodification impacts must conduct hydrology and hydraulic frequency analyses for LID, 2-, 5-, 10-, 25-, and 50-year storm events per the LACDPW Hydraulic and Hydrology manuals. The frequency analyses, which analyze

search our site..

Flood Zone Determination Website

Click for more Information.

LA County Flood Insurance Study Volumes: 1 2 3 4 5 6

Layers

County Floodway Map
- [x] Floodplain
- [x] Floodway
- [x] ML Map Index
- [ ] Water Surface Elevation

FEMA Flood Zone (NAVD 88)
- [ ] FEMA FIRM Panels
- [ ] FEMA FIRM Prelim
- [ ] FEMA FIRM Prelim Boundary
- [ ] FEMA Flood Zones (1% Annual Chance Flood)
  - Zone X - Shaded (0.2% Annual Chance Flood)
- [ ] FEMA Flood Zone D
- [ ] FEMA Base Flood Elevation
- [ ] Letter of Map Revision (LOMR)
- [ ] City and County Unincorporated Boundaries
- [ ] Building Footprints
- [ ] Parcel Boundaries

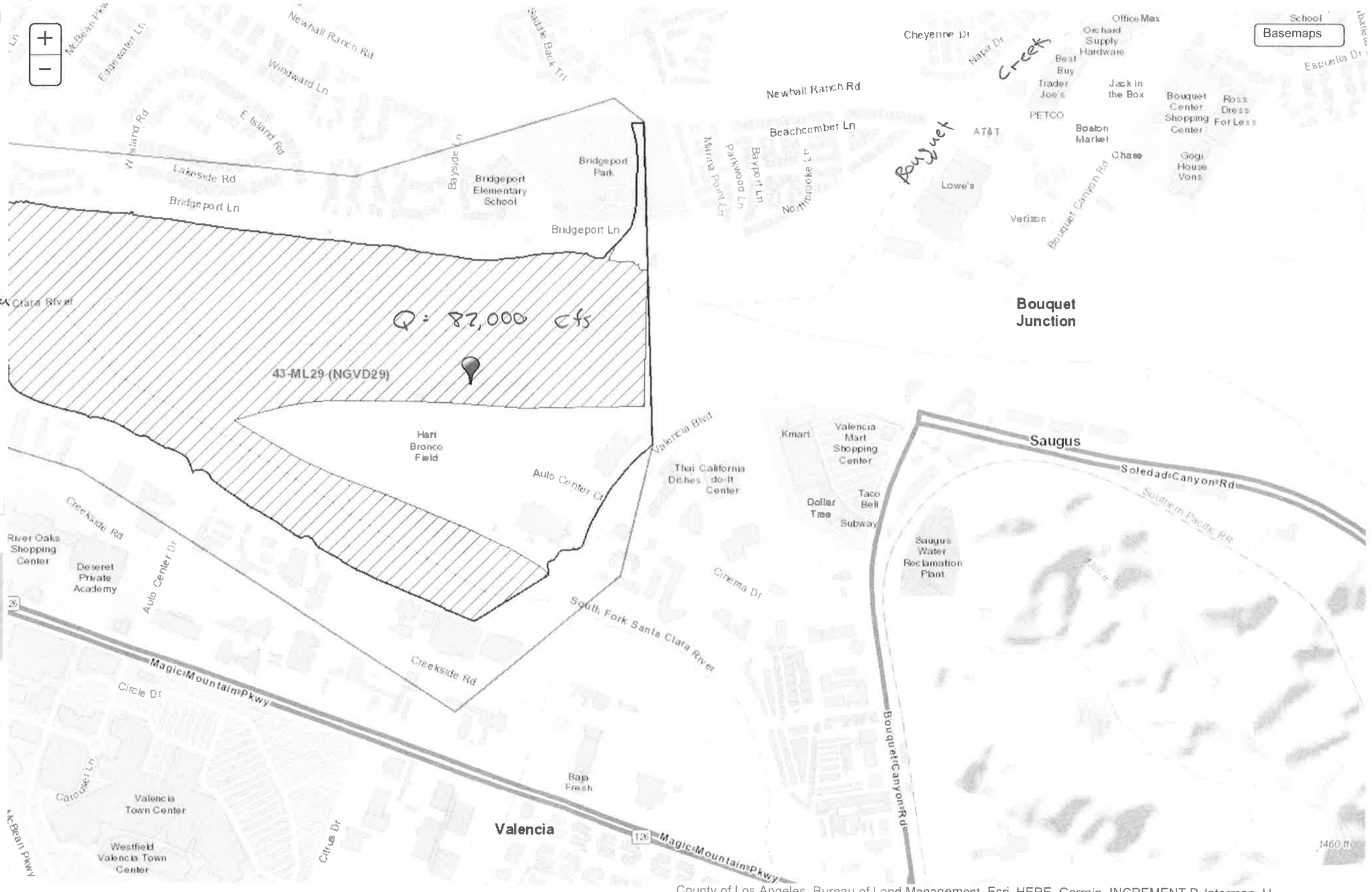
SEARCH
Enter Address or Parcel No.:
(ex: 900 S. Fremont Ave., 5342005904)

Search

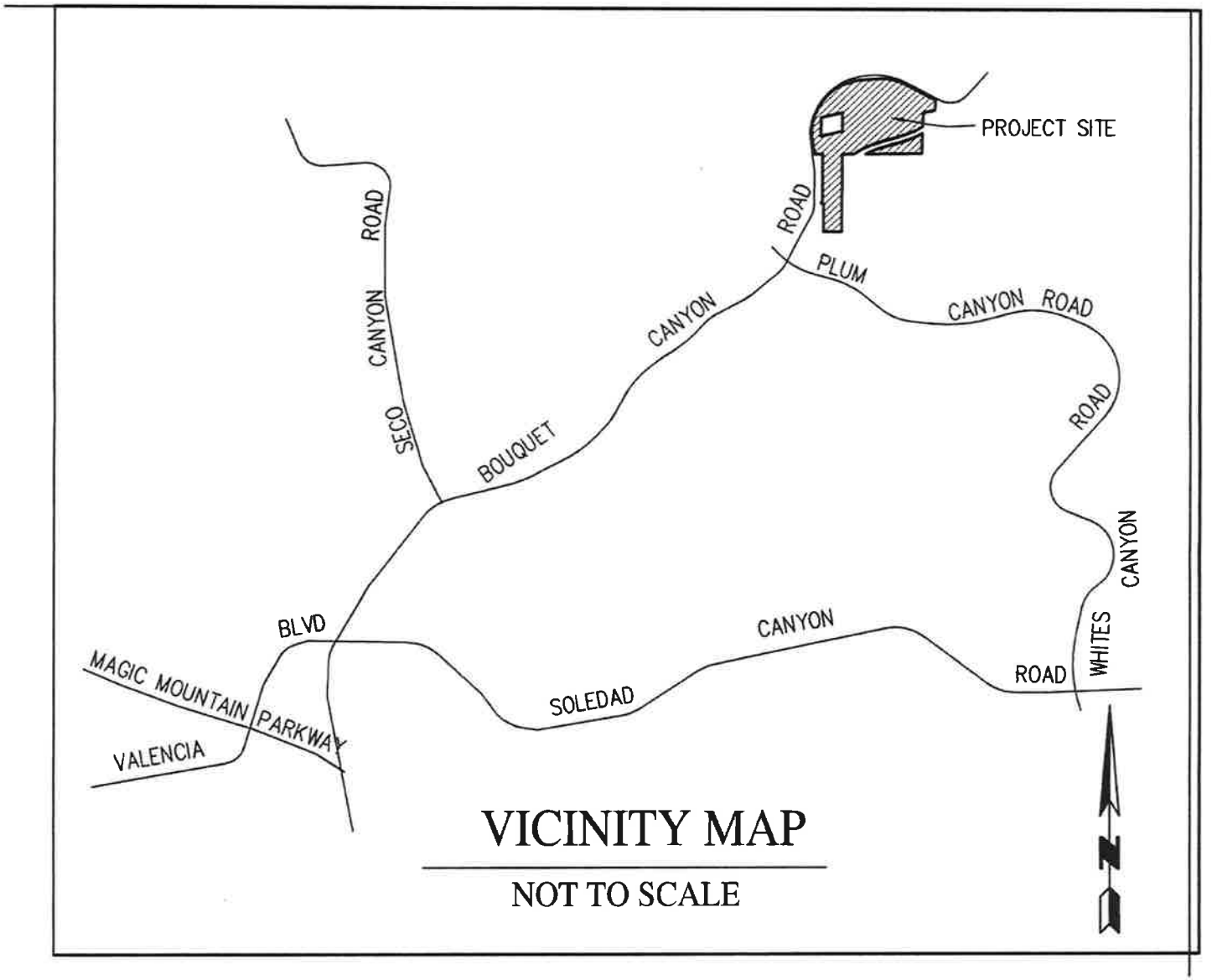
AIN 2811067902
0 0

County Floodway Map
Name: Santa Clara River
ML Index Number: 43-ML29
Status: adopted
Floodplain: Yes
Floodway: Yes

FEMA Flood Zone
FIRM Panel: 06037C0820F
Effective Date: 09/26/2008



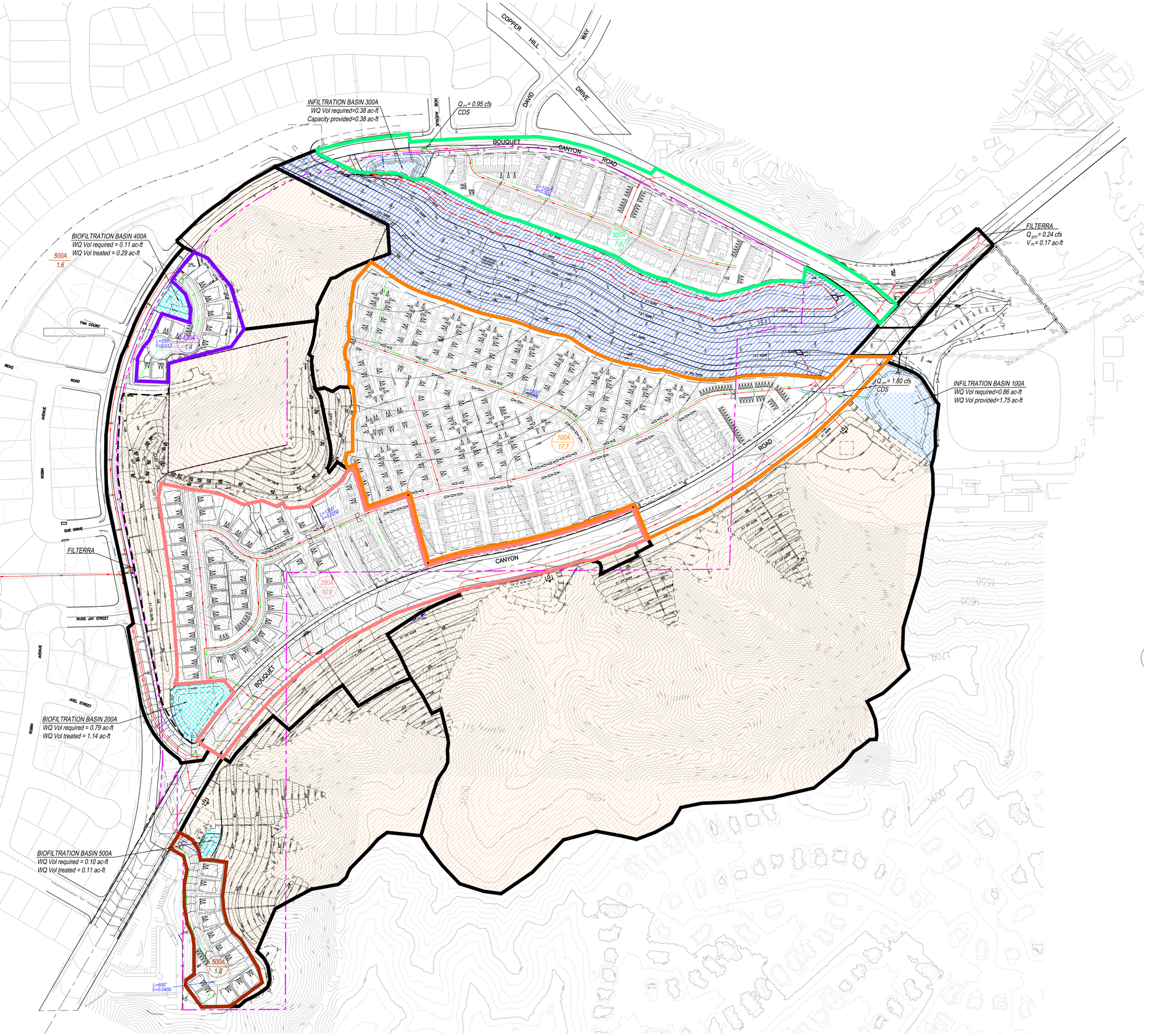
Appendix A

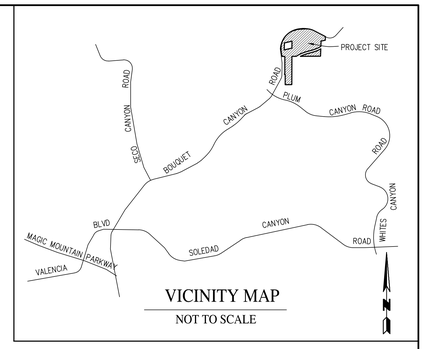


VICINITY MAP

NOT TO SCALE

Appendix B





LEGEND

- MAIN DRAINAGE BOUNDARY
- SUB-AREA BOUNDARY
- FLOW LINE
- TRACT BOUNDARY
- PROPOSED STORM DRAIN PIPE
- LOW FLOW STORM DRAIN
- (C) .... CDS UNIT
- F .... FILTERRA
- INFILTRATION BASIN PER RET-2
- BIOFILTRATION BASIN PER BIO-1
- PERVIOUS AREA INCLUDING NATIVE AND MANUFACTURED SLOPES (NOT SUBJECT TO LID REQUIREMENTS)
- DRAINAGE FACILITIES INCLUDING COUNTY MAINTAINED CHANNEL, LOW FLOW CHANNEL, AND BRIDGE (NOT SUBJECT TO LID REQUIREMENTS)
- RIPARIAN / WETLAND AREAS IN BOUQUET CREEK TO BE REPLACED INCLUDING BUFFER AREA

LID EXHIBIT

TENTATIVE TRACT NO. 82126

IN THE CITY OF SANTA CLARITA

NORTH

SCALE: 1"=100'

DATE: 6/14/2019

W.O. NO.: 5117-006

PREPARED FOR :

INTEGRAL PARTNERS FUNDING, LLC
888 SAN CLEMENTE DRIVE, SUITE 100
NEWPORT BEACH, CA 92660

PREPARED BY :

SIKAND
Engineering | Planning | Surveying
15230 Burbank Blvd. #100, Van Nuys, CA 91411
Phone : (818) 787- 8550, Fax : (818) 901-7451
www.sikand.com, E-mail: info@sikand.com

REGISTERED PROFESSIONAL ENGINEER
DOUG FARMER
No.49041
Exp. 09-30-2020
CIVIL
STATE OF CALIFORNIA

SHEET 1 OF 1 SHEETS

Appendix C

EXPLANATION

HS-16	Approximate Location of Hollow Stem Boring
BA-15	Approximate Location of Flight Auger Boring
TP-16	Approximate Location of Test Pit
CPT-7	Approximate Location of Cone Penetrometer Sounding (Prefix P before the CPT number corresponds to the CPT previously performed on 2017)
P-5	Approximate Location of Percolation Test Boring
	Approximate Site Limits

PETRA GEOSCIENCES, INC.

3186 Airway Avenue, Suite K
Costa Mesa, California 92626
PHONE: (714) 549-8921

COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA

AERIAL PHOTO WITH EXPLORATION LOCATIONS

Bouquet Canyon Project
Santa Clarita, California

PETRA GEOSCIENCES INC.

DATE: April, 2019

J.N.: 18-322

Figure 3b

Doug Farmer

From: Henry Walsh
Sent: Thursday, May 09, 2019 10:00 AM
To: Doug Farmer; Djoni Supangkat
Cc: Mari Prutz
Subject: FW: Bouquet Canyon Infiltration Rates
Attachments: 18-322 - Aerial Photo with Exploration Location.pdf

Henry S. Walsh
Senior Vice President
Sikand Engineering Associates
15230 Burbank Blvd., Suite 100
Van Nuys, CA 91411
(818) 787-8550 x148
(818) 267-6148 direct
(818) 618-9660 cell
hwalsh@sikand.com

From: Ted Wolfe <twolfe@petra-inc.com>
Sent: Thursday, May 09, 2019 9:55 AM
To: Scott Covington <scovington@integralcommunities.com>; dennis@devplan.net
Cc: Henry Walsh <hwalsh@sikand.com>; Ron Reed <rreed@petra-inc.com>
Subject: FW: Bouquet Canyon Infiltration Rates

Good Morning Henry- in order to keep the process moving forward, we would like to provide you with information/analysis as it is developed. As we understand it, you are looking for slope stability/buttress geometries for cut slopes. Specifically, for slopes and backcuts that may extend past project boundaries/property lines. Is there additional geotechnical/remedial information that you require at this time.

Regards, Ted

---------- Forwarded message ---------
From: **Ted Wolfe** <tedwolfe430@gmail.com>
Date: Wed, May 8, 2019 at 6:35 AM
Subject: Fwd: Bouquet Canyon Infiltration Rates
To: Ron Reed <rreed@petra-inc.com>, dennis@devplan.net <dennis@devplan.net>, hwalsh@sikand.com <hwalsh@sikand.com>, scovington@integralcommunities.com <scovington@integralcommunities.com>

Team- here are the results of the recent percolation testing as well as revised Infiltration rates for the two, previously completed tests. The attached plan shows the locations of the 5 tests. The latest County guidelines have modified reduction factors which correspondingly lowered the infiltration rates for Test Nos. 1 and 2. It should be noted that P-2 and P-3 are below the minimum values of 0.3 inches/hour. These locations correspond to the basins located adjacent to Bouquet Canyon

Road, north and south of the "donut hole". Test location P-1 is located adjacent to the active drainage channel and test locations P-4 and P-5 are within the limits of the basin adjacent to the Joseph Scott Detentions School. We would recommend that the lower value (Test No. 4) be used for this basin.

The percolation tests were performed in general conformance with the County of Los Angeles Low Impact Development Best Management Practice Guideline for Design, Investigation and Reporting prepared by the County of Los Angeles Department of Public Works. The soil percolation rates obtained during our study were converted to infiltration rates using a appropriate reduction factors. Please note that these are raw results that do not include factors of safety nor do they account for a reduction factor for long-term siltation, plugging and maintenance.

Summary of Percolation Test Results

Test Location	Total Depth (ft.)	Depth Interval Represented (ft)	Infiltration Rate (in./hr.)	Adjusted Infiltration Rate (in./hr.)
P-1	13	7-13	10.26	5.14
P-2	15	10-15	0.17	0.08
P-3	10	5-10	0.48	0.24
P-4	15	5-15	1.73	0.86
P-5	25	15-25	11.92	5.96

Regards,

Ted Wolfe

Vice President, Senior Associate Geologist

Petra Geosciences, Inc.

28358 Constellation Road, Unit 680

Valencia, CA 91355

Main: (661) 255-5790

Direct: (661) 425-9414

Cell: (714) 423-2784
twolfe@petra-inc.com

www.petra-inc.com

PETRA GEOSCIENCES INC.

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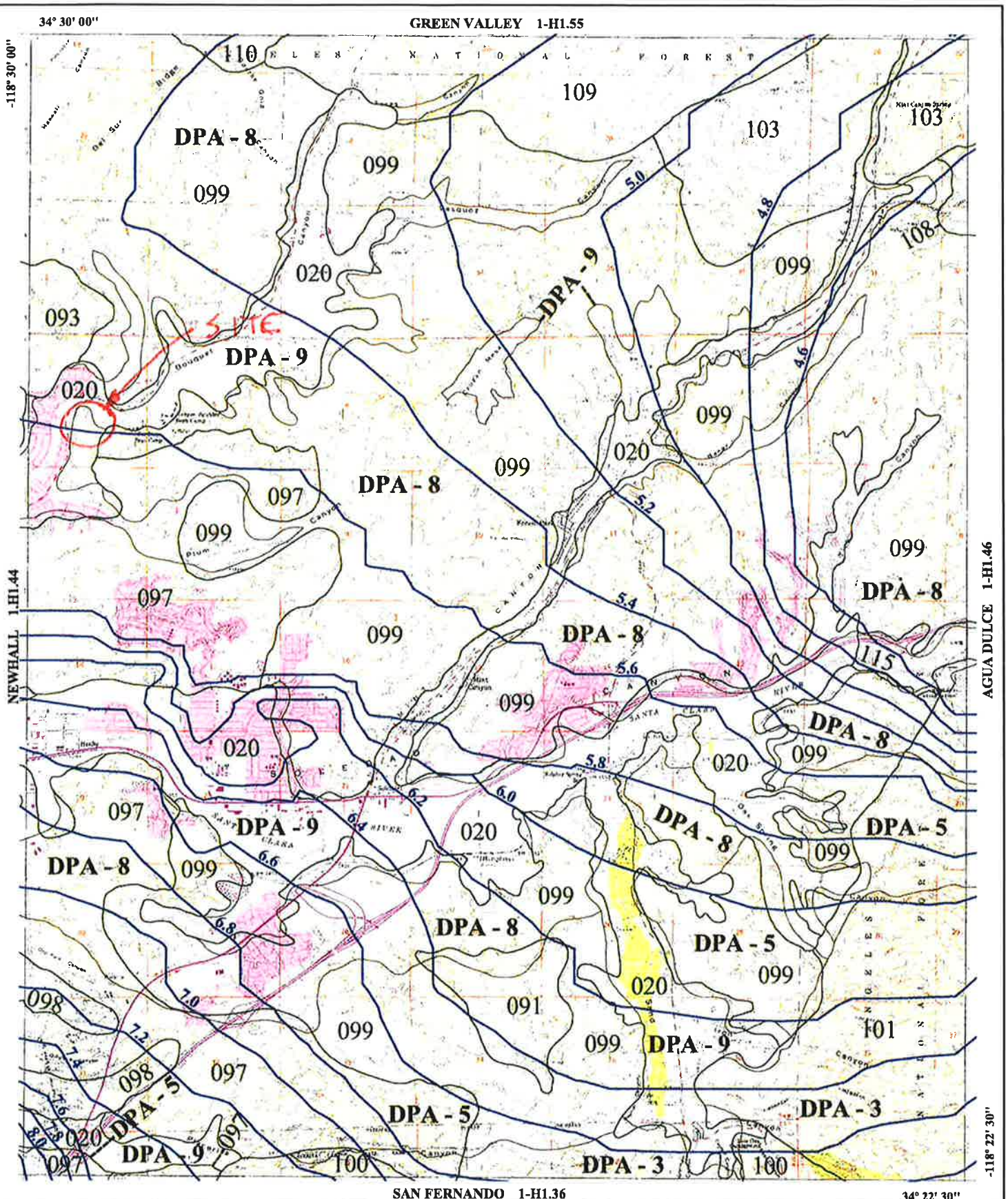
Appendix D

HYDROCALC Results

Bouquet Canyon
Proposed Condition

LID Frequency

Project	Subarea	Area (acres)	Length (ft)	Slope (ft/ft)	Isohyet (in.)	% Imp	Soil Type	Frequency		Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)	Volume (Ac-ft)
Bouquet	100A	17.7	1800	0.011	0.85	0.74	20	85th %		70	0.15	0.10	0.69	1.80	0.86
Bouquet	200A	10.9	1350	0.025	0.85	0.74	20	85th %		50	0.17	0.10	0.69	1.30	0.53
Bouquet	300A	7.8	1200	0.02	0.85	0.74	20	85th %		48	0.18	0.10	0.69	0.95	0.38
Bouquet	400A	1.4	550	0.013	0.85	0.74	20	85th %		32	0.21	0.10	0.69	0.21	0.07
Bouquet	500A	1.6	600	0.04	0.85	0.42	20	85th %		47	0.20	0.10	0.44	0.14	0.05
Bouquet	600A	1.2	450	0.016	0.85	0.91	20	85th %		24	0.24	0.1	0.83	0.24	0.07



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

MINT CANYON
50-YEAR 24-HOUR ISOHYET

1-H1.45

LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

search our site..

Hydrology Map

A GIS viewer application to view the data for the hydrology manual.

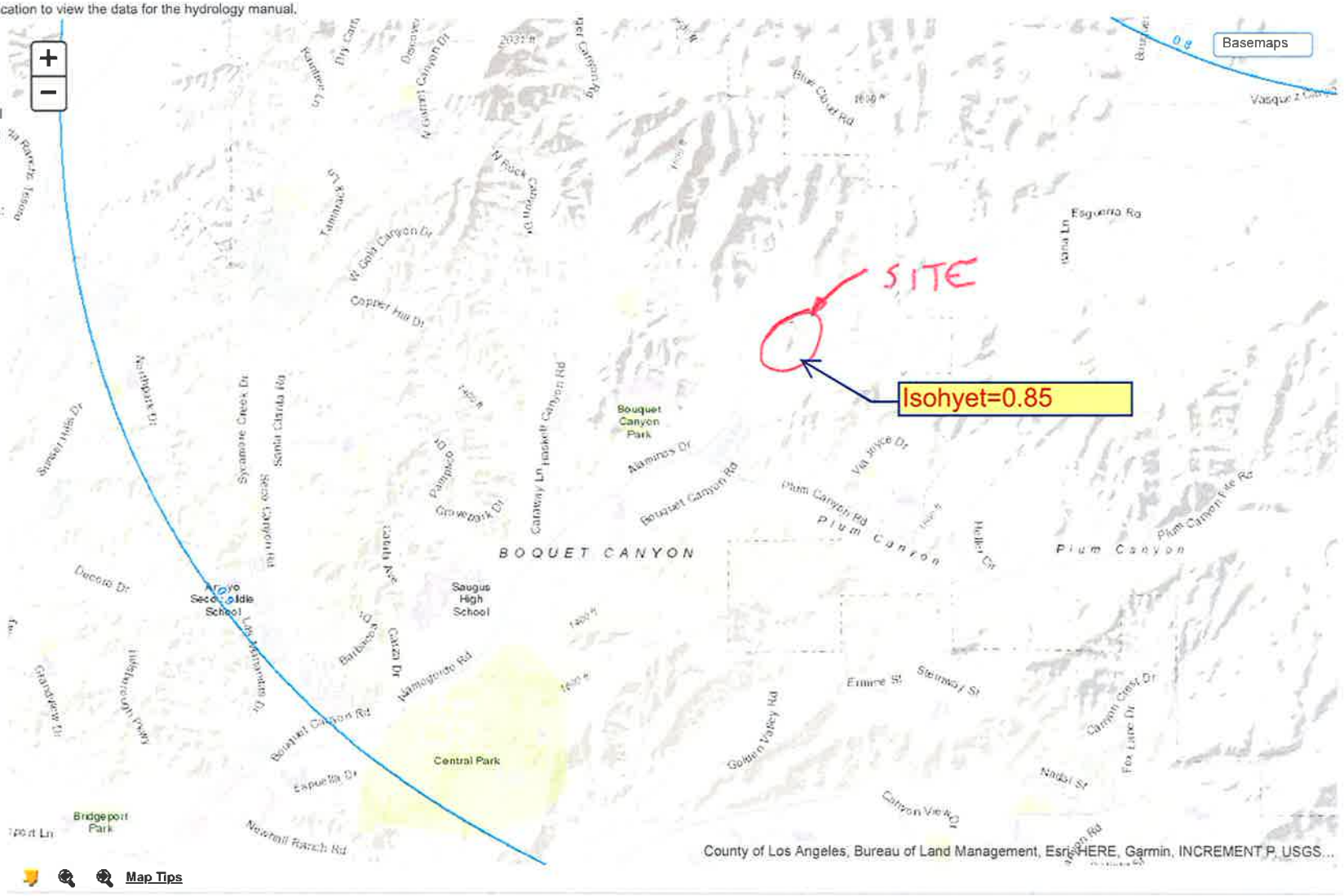
LAYERS

- 50yr Two Tenths (Rainfall)
- DPA Zones
- Soils 2004
- Final 85th Percentile, 24-hr Rainfall
- Final 95th Percentile, 24-hr Rainfall
- 1-year, 1-hour Rainfall Intensity

SEARCH

Enter Address, Cross Street, or Parcel No.:
(ex: 900 S. Fremont Ave., Fremont@Valley, 5342005904)

Search



IMPERVIOUS AREA CALCULATIONS
VTTM 82126, BOUQUET CANYON

Area Number	Area (ac)	Exist %Imp	Exist Impervious Area (ac)	Exist Pervious Area (ac)	Prop %Imp	Prop Impervious Area (ac)	Prop Pervious Area (ac)
100A	17.7	0	0	17.7	0.74	13.1	4.6
200A	10.9	0	0	10.9	0.74	8.1	2.8
300A	7.8	0	0	7.8	0.74	5.8	2.0
400A	1.4	0	0	1.4	0.74	1.0	0.4
500A	1.6	0	0	1.6	0.42	0.7	0.9
600A	1.2	0	0	1.2	0.91	1.1	0.1
Channel	8.9	0	0	8.9	0.77	6.9	2.0
Riparian/Wetland Areas within channel to be replaced	1.3	0	0	1.3	0	0.0	1.3
Manufactured slopes (On-site)	5.6	0	0	5.6	0	0.0	5.6
Natural hillside area (On-site)	8.2	0	0	8.2	0	0.0	8.2
Manufactured slopes (Off-site)	13.9	0	0	13.9	0	0.0	13.9
Natural hillside area (Off-site)	29.5	0	0	29.5	0	0.0	29.5
TOTAL	**108.0**		**0.0**	**108.0**		**36.6**	**71.4**

Peak Flow Hydrologic Analysis

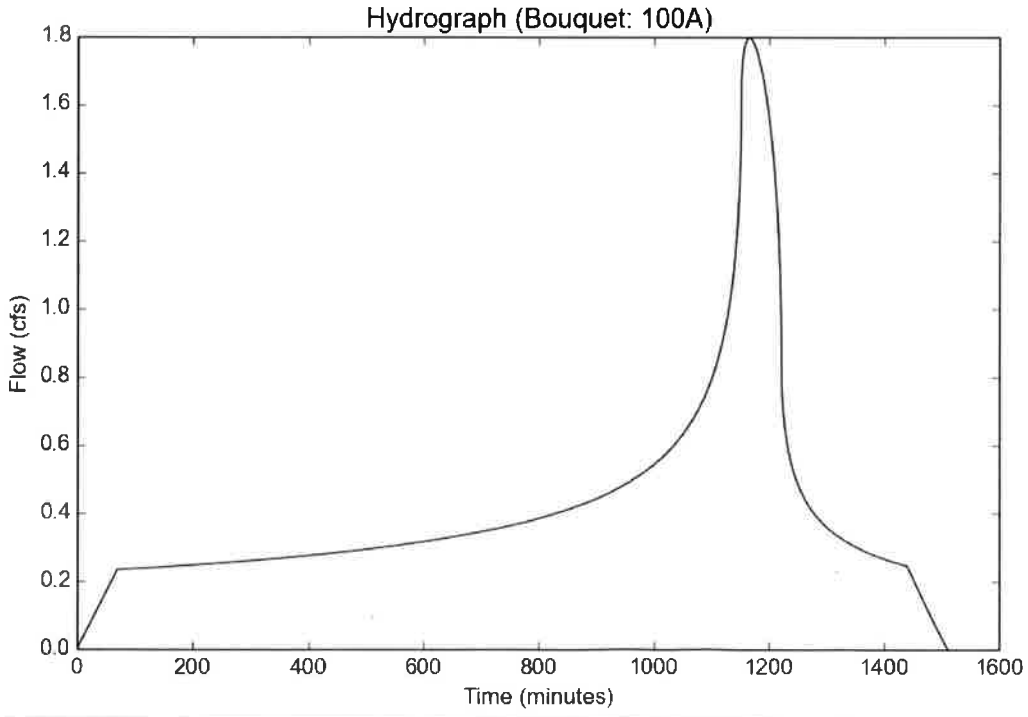
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/LID/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	100A
Area (ac)	17.7
Flow Path Length (ft)	1800.0
Flow Path Slope (vft/hft)	0.011
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.74
Soil Type	20
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1467
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.692
Time of Concentration (min)	70.0
Clear Peak Flow Rate (cfs)	1.7969
Burned Peak Flow Rate (cfs)	1.7969
24-Hr Clear Runoff Volume (ac-ft)	0.8605
24-Hr Clear Runoff Volume (cu-ft)	37482.5096



Peak Flow Hydrologic Analysis

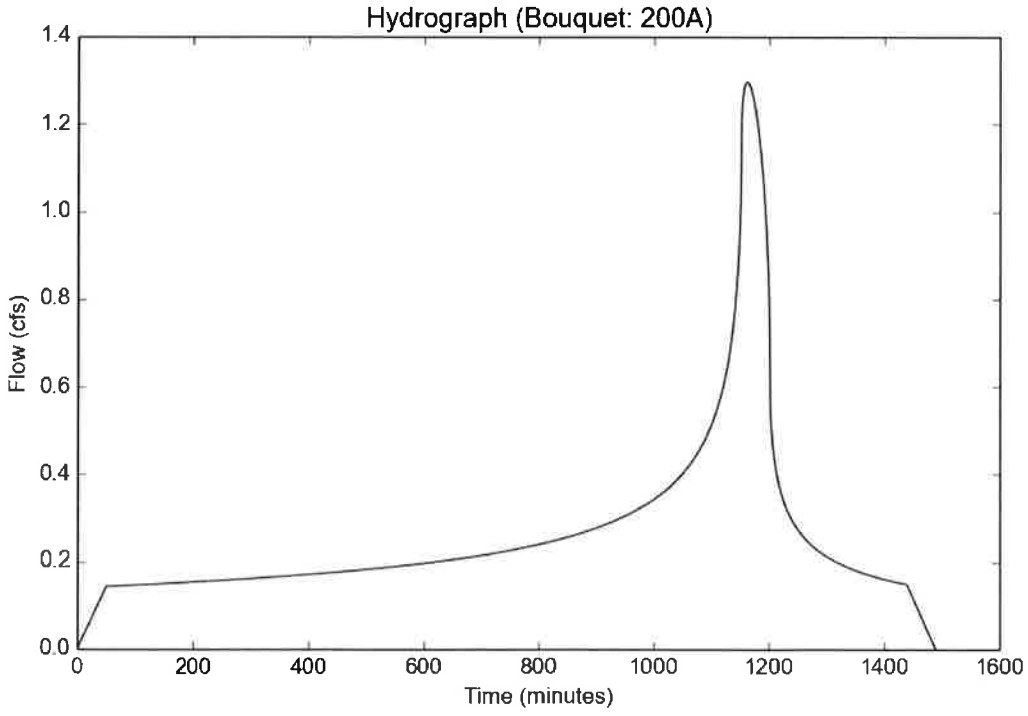
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/LID/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	200A
Area (ac)	10.9
Flow Path Length (ft)	1350.0
Flow Path Slope (vft/hft)	0.025
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.74
Soil Type	20
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1718
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.692
Time of Concentration (min)	50.0
Clear Peak Flow Rate (cfs)	1.2961
Burned Peak Flow Rate (cfs)	1.2961
24-Hr Clear Runoff Volume (ac-ft)	0.5299
24-Hr Clear Runoff Volume (cu-ft)	23081.7138



Peak Flow Hydrologic Analysis

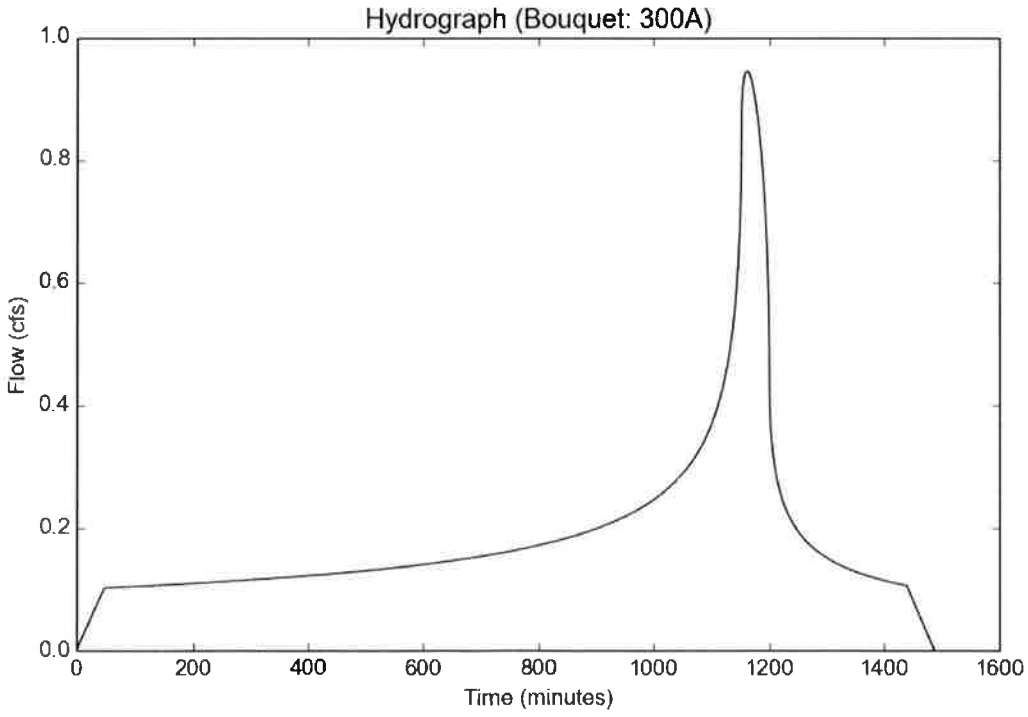
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/LID/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	300A
Area (ac)	7.8
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.02
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.74
Soil Type	20
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1752
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.692
Time of Concentration (min)	48.0
Clear Peak Flow Rate (cfs)	0.9455
Burned Peak Flow Rate (cfs)	0.9455
24-Hr Clear Runoff Volume (ac-ft)	0.3792
24-Hr Clear Runoff Volume (cu-ft)	16517.1472



Peak Flow Hydrologic Analysis

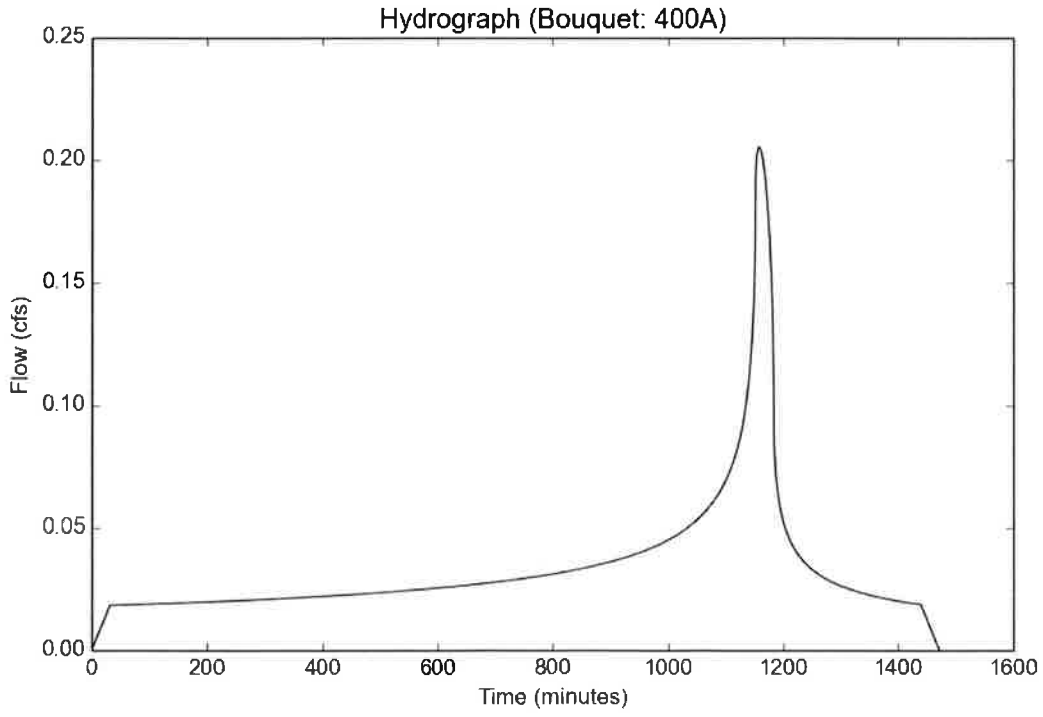
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/LID/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	400A
Area (ac)	1.4
Flow Path Length (ft)	550.0
Flow Path Slope (vft/hft)	0.013
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.74
Soil Type	20
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.2119
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.692
Time of Concentration (min)	32.0
Clear Peak Flow Rate (cfs)	0.2053
Burned Peak Flow Rate (cfs)	0.2053
24-Hr Clear Runoff Volume (ac-ft)	0.0681
24-Hr Clear Runoff Volume (cu-ft)	2964.5668



Peak Flow Hydrologic Analysis

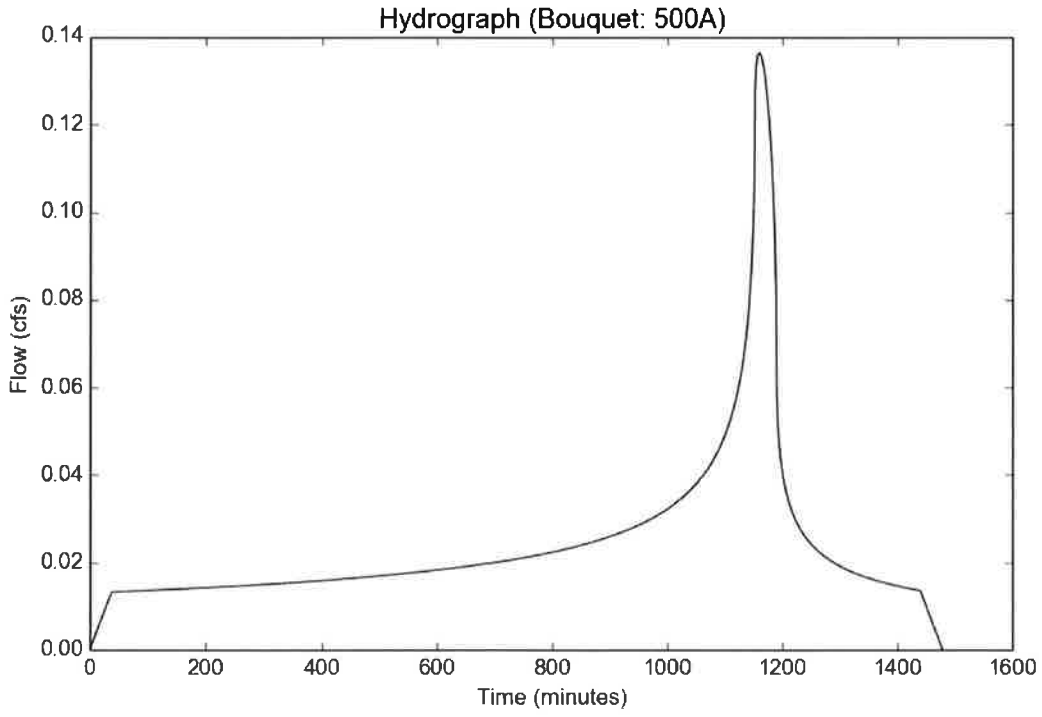
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/LID/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	500A
Area (ac)	1.6
Flow Path Length (ft)	600.0
Flow Path Slope (vft/hft)	0.04
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.42
Soil Type	20
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.1955
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.436
Time of Concentration (min)	38.0
Clear Peak Flow Rate (cfs)	0.1364
Burned Peak Flow Rate (cfs)	0.1364
24-Hr Clear Runoff Volume (ac-ft)	0.049
24-Hr Clear Runoff Volume (cu-ft)	2134.6955



Peak Flow Hydrologic Analysis

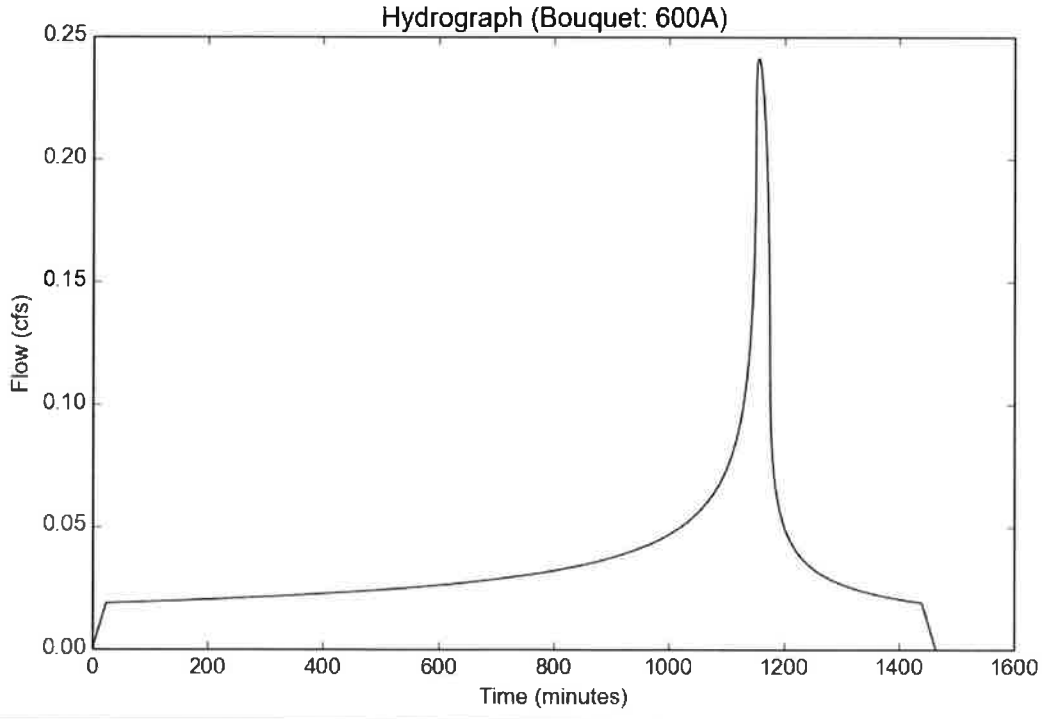
File location: X:/Civil3D/5117-006/Storm/HYDROLOGY/CALCULATIONS/HYDROCALC/PR/LID/Bouquet Report Oct.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Bouquet
Subarea ID	600A
Area (ac)	1.2
Flow Path Length (ft)	450.0
Flow Path Slope (vft/hft)	0.016
85th Percentile Rainfall Depth (in)	0.85
Percent Impervious	0.91
Soil Type	20
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.85
Peak Intensity (in/hr)	0.2426
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.828
Time of Concentration (min)	24.0
Clear Peak Flow Rate (cfs)	0.2411
Burned Peak Flow Rate (cfs)	0.2411
24-Hr Clear Runoff Volume (ac-ft)	0.0698
24-Hr Clear Runoff Volume (cu-ft)	3040.4383



Perc Basin Volume Calculation

VTTM 82126, Bouquet
Proposed Condition

Node 100A - LID WSE

Elevation	Area (ft^2)	Volume (ft^3)	Volume (ac-ft)	Capacity (ac-ft)
1407	15,865	-	-	-
1409	19,015	34,880	0.80	0.80
1411	22,426	41,441	0.95	1.75
			Perc Basin LID Volume Required (ac-ft) =	**0.86**
			Basin Capacity Provided (ac-ft) =	**1.75**
			WS Elevation =	**1,409.1**

Elevation	Volume
1409.0	0.80
X	0.86
1411.0	1.75

X= **1409.1**

Node 300A - LID WSE

Elevation	Area (ft^2)	Volume (ft^3)	Volume (ac-ft)	Capacity (ac-ft)
1378	2,917	-	-	-
1380	4,116	7,033	0.16	0.16
1382	5,416	9,532	0.22	0.38
			Perc Basin LID Volume Required (ac-ft) =	**0.38**
			Basin Capacity Provided (ac-ft) =	**0.38**
			WS Elevation =	**1,382.0**

Elevation	Volume
1380.0	0.16
X	0.38
1382.0	0.38

X= **1382.0**

Drawdown Calculation

TTM 82126 Bouquet
Proposed Condition

Node 100A

$d=t_p \times f_{design}/12$

Known:
d= 2.2' Storage
F_{design}= 0.86 in/hr
t_p= detention time

$2.2' = t_p * (0.86/12)$

t_p= 30.7 hours
t_p < 96 hours Max drawdown allowed

Node 300A

$d=t_p \times f_{design}/12$

Known:
d= 4.0' Storage
F_{design}= 5.1 in/hr
t_p= detention time

$4.0' = t_p * (5.1/12)$

t_p= 9.4 hours
t_p < 96 hours Max drawdown allowed

BMP VOLUMES

Bouquet Canyon
Proposed Condition

LID Frequency

Project	Subarea	Area (acres)	Vreq	Bio Vol Req (Vreq x 1.5)	Vtreated
Bouquet	100A	17.7	0.86	0.86	1.75
Bouquet	200A	10.9	0.53	0.79	1.14
Bouquet	300A	7.8	0.38	0.38	0.38
Bouquet	400A	1.4	0.07	0.10	0.29
Bouquet	500A	1.6	0.05	0.07	0.11
Bouquet	600A	1.2	0.07	0.10	0.11
Total		**40.6**	**1.96**	**2.31**	**3.78**

Biofiltration Summary

Bouquet - Tract 82126

Proposed Condition

Area 200A

Time (min)	Q (cfs)	1.5*Q (cfs)	Biofiltration (5 in/hr)	Biofiltered Rate (cfs)	Biofiltered Volume (cf)	Stored Flow (cfs)	Stored Vol (cf)	Area
0	0	0.0000	1.044	0	0	0.0000	0	9023
0.2	7.36E-05	0.0001	1.044	0.0001	0.0007	0.0000	0.0000	
0.4	0.000147	0.0002	1.044	0.0002	0.0020	0.0000	0.0000	
0.6	0.000221	0.0003	1.044	0.0003	0.0033	0.0000	0.0000	
0.8	0.000294	0.0004	1.044	0.0004	0.0046	0.0000	0.0000	
1	0.000368	0.0006	1.044	0.0006	0.0060	0.0000	0.0000	
1.2	0.000442	0.0007	1.044	0.0007	0.0073	0.0000	0.0000	
1.4	0.000515	0.0008	1.044	0.0008	0.0086	0.0000	0.0000	
1.6	0.000589	0.0009	1.044	0.0009	0.0099	0.0000	0.0000	
1.8	0.000663	0.0010	1.044	0.0010	0.0113	0.0000	0.0000	
2	0.000736	0.0011	1.044	0.0011	0.0126	0.0000	0.0000	
2.2	0.00081	0.0012	1.044	0.0012	0.0139	0.0000	0.0000	
2.4	0.000884	0.0013	1.044	0.0013	0.0152	0.0000	0.0000	
2.6	0.000957	0.0014	1.044	0.0014	0.0166	0.0000	0.0000	
2.8	0.001031	0.0015	1.044	0.0015	0.0179	0.0000	0.0000	
3	0.001105	0.0017	1.044	0.0017	0.0192	0.0000	0.0000	
3.2	0.001179	0.0018	1.044	0.0018	0.0206	0.0000	0.0000	
3.4	0.001252	0.0019	1.044	0.0019	0.0219	0.0000	0.0000	
3.6	0.001326	0.0020	1.044	0.0020	0.0232	0.0000	0.0000	
3.8	0.0014	0.0021	1.044	0.0021	0.0245	0.0000	0.0000	
4	0.001473	0.0022	1.044	0.0022	0.0259	0.0000	0.0000	
4.2	0.001547	0.0023	1.044	0.0023	0.0272	0.0000	0.0000	
4.4	0.001621	0.0024	1.044	0.0024	0.0285	0.0000	0.0000	
4.6	0.001695	0.0025	1.044	0.0025	0.0298	0.0000	0.0000	
4.8	0.001768	0.0027	1.044	0.0027	0.0312	0.0000	0.0000	
5	0.001842	0.0028	1.044	0.0028	0.0325	0.0000	0.0000	
5.2	0.001916	0.0029	1.044	0.0029	0.0338	0.0000	0.0000	
5.4	0.00199	0.0030	1.044	0.0030	0.0352	0.0000	0.0000	
5.6	0.002063	0.0031	1.044	0.0031	0.0365	0.0000	0.0000	
5.8	0.002137	0.0032	1.044	0.0032	0.0378	0.0000	0.0000	
6	0.002211	0.0033	1.044	0.0033	0.0391	0.0000	0.0000	
6.2	0.002285	0.0034	1.044	0.0034	0.0405	0.0000	0.0000	
6.4	0.002359	0.0035	1.044	0.0035	0.0418	0.0000	0.0000	
6.6	0.002432	0.0036	1.044	0.0036	0.0431	0.0000	0.0000	
6.8	0.002506	0.0038	1.044	0.0038	0.0444	0.0000	0.0000	
7	0.00258	0.0039	1.044	0.0039	0.0458	0.0000	0.0000	
7.2	0.002654	0.0040	1.044	0.0040	0.0471	0.0000	0.0000	
7.4	0.002728	0.0041	1.044	0.0041	0.0484	0.0000	0.0000	
7.6	0.002802	0.0042	1.044	0.0042	0.0498	0.0000	0.0000	
7.8	0.002875	0.0043	1.044	0.0043	0.0511	0.0000	0.0000	

8	0.002949	0.0044	1.044	0.0044	0.0524	0.0000	0.0000
8.2	0.003023	0.0045	1.044	0.0045	0.0538	0.0000	0.0000
8.4	0.003097	0.0046	1.044	0.0046	0.0551	0.0000	0.0000
8.6	0.003171	0.0048	1.044	0.0048	0.0564	0.0000	0.0000
8.8	0.003245	0.0049	1.044	0.0049	0.0577	0.0000	0.0000
9	0.003319	0.0050	1.044	0.0050	0.0591	0.0000	0.0000
9.2	0.003392	0.0051	1.044	0.0051	0.0604	0.0000	0.0000
9.4	0.003466	0.0052	1.044	0.0052	0.0617	0.0000	0.0000
9.6	0.00354	0.0053	1.044	0.0053	0.0631	0.0000	0.0000
9.8	0.003614	0.0054	1.044	0.0054	0.0644	0.0000	0.0000
10	0.003688	0.0055	1.044	0.0055	0.0657	0.0000	0.0000
10.2	0.003762	0.0056	1.044	0.0056	0.0671	0.0000	0.0000
10.4	0.003836	0.0058	1.044	0.0058	0.0684	0.0000	0.0000
10.6	0.00391	0.0059	1.044	0.0059	0.0697	0.0000	0.0000
10.8	0.003984	0.0060	1.044	0.0060	0.0710	0.0000	0.0000
11	0.004058	0.0061	1.044	0.0061	0.0724	0.0000	0.0000
11.2	0.004132	0.0062	1.044	0.0062	0.0737	0.0000	0.0000
11.4	0.004206	0.0063	1.044	0.0063	0.0750	0.0000	0.0000
11.6	0.00428	0.0064	1.044	0.0064	0.0764	0.0000	0.0000
11.8	0.004354	0.0065	1.044	0.0065	0.0777	0.0000	0.0000
12	0.004428	0.0066	1.044	0.0066	0.0790	0.0000	0.0000
12.2	0.004502	0.0068	1.044	0.0068	0.0804	0.0000	0.0000
12.4	0.004575	0.0069	1.044	0.0069	0.0817	0.0000	0.0000
12.6	0.004649	0.0070	1.044	0.0070	0.0830	0.0000	0.0000
12.8	0.004723	0.0071	1.044	0.0071	0.0844	0.0000	0.0000
13	0.004797	0.0072	1.044	0.0072	0.0857	0.0000	0.0000
13.2	0.004871	0.0073	1.044	0.0073	0.0870	0.0000	0.0000
13.4	0.004946	0.0074	1.044	0.0074	0.0884	0.0000	0.0000
13.6	0.00502	0.0075	1.044	0.0075	0.0897	0.0000	0.0000
13.8	0.005094	0.0076	1.044	0.0076	0.0910	0.0000	0.0000
14	0.005168	0.0078	1.044	0.0078	0.0924	0.0000	0.0000
14.2	0.005242	0.0079	1.044	0.0079	0.0937	0.0000	0.0000
14.4	0.005316	0.0080	1.044	0.0080	0.0950	0.0000	0.0000
14.6	0.00539	0.0081	1.044	0.0081	0.0963	0.0000	0.0000
14.8	0.005464	0.0082	1.044	0.0082	0.0977	0.0000	0.0000
15	0.005538	0.0083	1.044	0.0083	0.0990	0.0000	0.0000
15.2	0.005612	0.0084	1.044	0.0084	0.1003	0.0000	0.0000
15.4	0.005686	0.0085	1.044	0.0085	0.1017	0.0000	0.0000
15.6	0.00576	0.0086	1.044	0.0086	0.1030	0.0000	0.0000
15.8	0.005834	0.0088	1.044	0.0088	0.1043	0.0000	0.0000
16	0.005908	0.0089	1.044	0.0089	0.1057	0.0000	0.0000
16.2	0.005982	0.0090	1.044	0.0090	0.1070	0.0000	0.0000
16.4	0.006056	0.0091	1.044	0.0091	0.1083	0.0000	0.0000
16.6	0.006131	0.0092	1.044	0.0092	0.1097	0.0000	0.0000
16.8	0.006205	0.0093	1.044	0.0093	0.1110	0.0000	0.0000
17	0.006279	0.0094	1.044	0.0094	0.1124	0.0000	0.0000
17.2	0.006353	0.0095	1.044	0.0095	0.1137	0.0000	0.0000

17.4	0.006427	0.0096	1.044	0.0096	0.1150	0.0000	0.0000
17.6	0.006501	0.0098	1.044	0.0098	0.1164	0.0000	0.0000
17.8	0.006575	0.0099	1.044	0.0099	0.1177	0.0000	0.0000
18	0.00665	0.0100	1.044	0.0100	0.1190	0.0000	0.0000
18.2	0.006724	0.0101	1.044	0.0101	0.1204	0.0000	0.0000
18.4	0.006798	0.0102	1.044	0.0102	0.1217	0.0000	0.0000
18.6	0.006872	0.0103	1.044	0.0103	0.1230	0.0000	0.0000
18.8	0.006946	0.0104	1.044	0.0104	0.1244	0.0000	0.0000
19	0.00702	0.0105	1.044	0.0105	0.1257	0.0000	0.0000
19.2	0.007095	0.0106	1.044	0.0106	0.1270	0.0000	0.0000
19.4	0.007169	0.0108	1.044	0.0108	0.1284	0.0000	0.0000
19.6	0.007243	0.0109	1.044	0.0109	0.1297	0.0000	0.0000
19.8	0.007317	0.0110	1.044	0.0110	0.1310	0.0000	0.0000
20	0.007391	0.0111	1.044	0.0111	0.1324	0.0000	0.0000
20.2	0.007466	0.0112	1.044	0.0112	0.1337	0.0000	0.0000
20.4	0.00754	0.0113	1.044	0.0113	0.1350	0.0000	0.0000
20.6	0.007614	0.0114	1.044	0.0114	0.1364	0.0000	0.0000
20.8	0.007688	0.0115	1.044	0.0115	0.1377	0.0000	0.0000
21	0.007763	0.0116	1.044	0.0116	0.1391	0.0000	0.0000
21.2	0.007837	0.0118	1.044	0.0118	0.1404	0.0000	0.0000
21.4	0.007911	0.0119	1.044	0.0119	0.1417	0.0000	0.0000
21.6	0.007985	0.0120	1.044	0.0120	0.1431	0.0000	0.0000
21.8	0.00806	0.0121	1.044	0.0121	0.1444	0.0000	0.0000
22	0.008134	0.0122	1.044	0.0122	0.1457	0.0000	0.0000
22.2	0.008208	0.0123	1.044	0.0123	0.1471	0.0000	0.0000
22.4	0.008282	0.0124	1.044	0.0124	0.1484	0.0000	0.0000
22.6	0.008357	0.0125	1.044	0.0125	0.1498	0.0000	0.0000
22.8	0.008431	0.0126	1.044	0.0126	0.1511	0.0000	0.0000
23	0.008505	0.0128	1.044	0.0128	0.1524	0.0000	0.0000
23.2	0.00858	0.0129	1.044	0.0129	0.1538	0.0000	0.0000
23.4	0.008654	0.0130	1.044	0.0130	0.1551	0.0000	0.0000
23.6	0.008728	0.0131	1.044	0.0131	0.1564	0.0000	0.0000
23.8	0.008803	0.0132	1.044	0.0132	0.1578	0.0000	0.0000
24	0.008877	0.0133	1.044	0.0133	0.1591	0.0000	0.0000
24.2	0.008951	0.0134	1.044	0.0134	0.1605	0.0000	0.0000
24.4	0.009026	0.0135	1.044	0.0135	0.1618	0.0000	0.0000
24.6	0.0091	0.0137	1.044	0.0137	0.1631	0.0000	0.0000
24.8	0.009174	0.0138	1.044	0.0138	0.1645	0.0000	0.0000
25	0.009249	0.0139	1.044	0.0139	0.1658	0.0000	0.0000
25.2	0.009323	0.0140	1.044	0.0140	0.1671	0.0000	0.0000
25.4	0.009398	0.0141	1.044	0.0141	0.1685	0.0000	0.0000
25.6	0.009472	0.0142	1.044	0.0142	0.1698	0.0000	0.0000
25.8	0.009546	0.0143	1.044	0.0143	0.1712	0.0000	0.0000
26	0.009621	0.0144	1.044	0.0144	0.1725	0.0000	0.0000
26.2	0.009695	0.0145	1.044	0.0145	0.1738	0.0000	0.0000
26.4	0.00977	0.0147	1.044	0.0147	0.1752	0.0000	0.0000
26.6	0.009844	0.0148	1.044	0.0148	0.1765	0.0000	0.0000

26.8	0.009918	0.0149	1.044	0.0149	0.1779	0.0000	0.0000
27	0.009993	0.0150	1.044	0.0150	0.1792	0.0000	0.0000
27.2	0.010067	0.0151	1.044	0.0151	0.1805	0.0000	0.0000
27.4	0.010142	0.0152	1.044	0.0152	0.1819	0.0000	0.0000
27.6	0.010216	0.0153	1.044	0.0153	0.1832	0.0000	0.0000
27.8	0.010291	0.0154	1.044	0.0154	0.1846	0.0000	0.0000
28	0.010365	0.0155	1.044	0.0155	0.1859	0.0000	0.0000
28.2	0.01044	0.0157	1.044	0.0157	0.1872	0.0000	0.0000
28.4	0.010514	0.0158	1.044	0.0158	0.1886	0.0000	0.0000
28.6	0.010589	0.0159	1.044	0.0159	0.1899	0.0000	0.0000
28.8	0.010663	0.0160	1.044	0.0160	0.1913	0.0000	0.0000
29	0.010738	0.0161	1.044	0.0161	0.1926	0.0000	0.0000
29.2	0.010812	0.0162	1.044	0.0162	0.1939	0.0000	0.0000
29.4	0.010887	0.0163	1.044	0.0163	0.1953	0.0000	0.0000
29.6	0.010961	0.0164	1.044	0.0164	0.1966	0.0000	0.0000
29.8	0.011036	0.0166	1.044	0.0166	0.1980	0.0000	0.0000
30	0.01111	0.0167	1.044	0.0167	0.1993	0.0000	0.0000
30.2	0.011185	0.0168	1.044	0.0168	0.2007	0.0000	0.0000
30.4	0.011259	0.0169	1.044	0.0169	0.2020	0.0000	0.0000
30.6	0.011334	0.0170	1.044	0.0170	0.2033	0.0000	0.0000
30.8	0.011408	0.0171	1.044	0.0171	0.2047	0.0000	0.0000
31	0.011483	0.0172	1.044	0.0172	0.2060	0.0000	0.0000
31.2	0.011557	0.0173	1.044	0.0173	0.2074	0.0000	0.0000
31.4	0.011632	0.0174	1.044	0.0174	0.2087	0.0000	0.0000
31.6	0.011707	0.0176	1.044	0.0176	0.2100	0.0000	0.0000
31.8	0.011781	0.0177	1.044	0.0177	0.2114	0.0000	0.0000
32	0.011856	0.0178	1.044	0.0178	0.2127	0.0000	0.0000
32.2	0.01193	0.0179	1.044	0.0179	0.2141	0.0000	0.0000
32.4	0.012005	0.0180	1.044	0.0180	0.2154	0.0000	0.0000
32.6	0.01208	0.0181	1.044	0.0181	0.2168	0.0000	0.0000
32.8	0.012154	0.0182	1.044	0.0182	0.2181	0.0000	0.0000
33	0.012229	0.0183	1.044	0.0183	0.2194	0.0000	0.0000
33.2	0.012303	0.0185	1.044	0.0185	0.2208	0.0000	0.0000
33.4	0.012378	0.0186	1.044	0.0186	0.2221	0.0000	0.0000
33.6	0.012453	0.0187	1.044	0.0187	0.2235	0.0000	0.0000
33.8	0.012527	0.0188	1.044	0.0188	0.2248	0.0000	0.0000
34	0.012602	0.0189	1.044	0.0189	0.2262	0.0000	0.0000
34.2	0.012677	0.0190	1.044	0.0190	0.2275	0.0000	0.0000
34.4	0.012751	0.0191	1.044	0.0191	0.2289	0.0000	0.0000
34.6	0.012826	0.0192	1.044	0.0192	0.2302	0.0000	0.0000
34.8	0.012901	0.0194	1.044	0.0194	0.2315	0.0000	0.0000
35	0.012975	0.0195	1.044	0.0195	0.2329	0.0000	0.0000
35.2	0.01305	0.0196	1.044	0.0196	0.2342	0.0000	0.0000
35.4	0.013125	0.0197	1.044	0.0197	0.2356	0.0000	0.0000
35.6	0.013199	0.0198	1.044	0.0198	0.2369	0.0000	0.0000
35.8	0.013274	0.0199	1.044	0.0199	0.2383	0.0000	0.0000
36	0.013349	0.0200	1.044	0.0200	0.2396	0.0000	0.0000

36.2	0.013424	0.0201	1.044	0.0201	0.2410	0.0000	0.0000
36.4	0.013498	0.0202	1.044	0.0202	0.2423	0.0000	0.0000
36.6	0.013573	0.0204	1.044	0.0204	0.2436	0.0000	0.0000
36.8	0.013648	0.0205	1.044	0.0205	0.2450	0.0000	0.0000
37	0.013722	0.0206	1.044	0.0206	0.2463	0.0000	0.0000
37.2	0.013797	0.0207	1.044	0.0207	0.2477	0.0000	0.0000
37.4	0.013872	0.0208	1.044	0.0208	0.2490	0.0000	0.0000
37.6	0.013947	0.0209	1.044	0.0209	0.2504	0.0000	0.0000
37.8	0.014022	0.0210	1.044	0.0210	0.2517	0.0000	0.0000
38	0.014096	0.0211	1.044	0.0211	0.2531	0.0000	0.0000
38.2	0.014171	0.0213	1.044	0.0213	0.2544	0.0000	0.0000
38.4	0.014246	0.0214	1.044	0.0214	0.2558	0.0000	0.0000
38.6	0.014321	0.0215	1.044	0.0215	0.2571	0.0000	0.0000
38.8	0.014395	0.0216	1.044	0.0216	0.2584	0.0000	0.0000
39	0.01447	0.0217	1.044	0.0217	0.2598	0.0000	0.0000
39.2	0.014545	0.0218	1.044	0.0218	0.2611	0.0000	0.0000
39.4	0.01462	0.0219	1.044	0.0219	0.2625	0.0000	0.0000
39.6	0.014695	0.0220	1.044	0.0220	0.2638	0.0000	0.0000
39.8	0.01477	0.0222	1.044	0.0222	0.2652	0.0000	0.0000
40	0.014844	0.0223	1.044	0.0223	0.2665	0.0000	0.0000
40.2	0.014919	0.0224	1.044	0.0224	0.2679	0.0000	0.0000
40.4	0.014994	0.0225	1.044	0.0225	0.2692	0.0000	0.0000
40.6	0.015069	0.0226	1.044	0.0226	0.2706	0.0000	0.0000
40.8	0.015144	0.0227	1.044	0.0227	0.2719	0.0000	0.0000
41	0.015219	0.0228	1.044	0.0228	0.2733	0.0000	0.0000
41.2	0.015294	0.0229	1.044	0.0229	0.2746	0.0000	0.0000
41.4	0.015369	0.0231	1.044	0.0231	0.2760	0.0000	0.0000
41.6	0.015443	0.0232	1.044	0.0232	0.2773	0.0000	0.0000
41.8	0.015518	0.0233	1.044	0.0233	0.2787	0.0000	0.0000
42	0.015593	0.0234	1.044	0.0234	0.2800	0.0000	0.0000
42.2	0.015668	0.0235	1.044	0.0235	0.2814	0.0000	0.0000
42.4	0.015743	0.0236	1.044	0.0236	0.2827	0.0000	0.0000
42.6	0.015818	0.0237	1.044	0.0237	0.2840	0.0000	0.0000
42.8	0.015893	0.0238	1.044	0.0238	0.2854	0.0000	0.0000
43	0.015968	0.0240	1.044	0.0240	0.2867	0.0000	0.0000
43.2	0.016043	0.0241	1.044	0.0241	0.2881	0.0000	0.0000
43.4	0.016118	0.0242	1.044	0.0242	0.2894	0.0000	0.0000
43.6	0.016193	0.0243	1.044	0.0243	0.2908	0.0000	0.0000
43.8	0.016268	0.0244	1.044	0.0244	0.2921	0.0000	0.0000
44	0.016343	0.0245	1.044	0.0245	0.2935	0.0000	0.0000
44.2	0.016418	0.0246	1.044	0.0246	0.2948	0.0000	0.0000
44.4	0.016493	0.0247	1.044	0.0247	0.2962	0.0000	0.0000
44.6	0.016568	0.0249	1.044	0.0249	0.2975	0.0000	0.0000
44.8	0.016643	0.0250	1.044	0.0250	0.2989	0.0000	0.0000
45	0.016718	0.0251	1.044	0.0251	0.3002	0.0000	0.0000
45.2	0.016793	0.0252	1.044	0.0252	0.3016	0.0000	0.0000
45.4	0.016868	0.0253	1.044	0.0253	0.3029	0.0000	0.0000

45.6	0.016943	0.0254	1.044	0.0254	0.3043	0.0000	0.0000
45.8	0.017018	0.0255	1.044	0.0255	0.3056	0.0000	0.0000
46	0.017093	0.0256	1.044	0.0256	0.3070	0.0000	0.0000
46.2	0.017168	0.0258	1.044	0.0258	0.3083	0.0000	0.0000
46.4	0.017243	0.0259	1.044	0.0259	0.3097	0.0000	0.0000
46.6	0.017318	0.0260	1.044	0.0260	0.3110	0.0000	0.0000
46.8	0.017393	0.0261	1.044	0.0261	0.3124	0.0000	0.0000
47	0.017468	0.0262	1.044	0.0262	0.3137	0.0000	0.0000
47.2	0.017543	0.0263	1.044	0.0263	0.3151	0.0000	0.0000
47.4	0.017618	0.0264	1.044	0.0264	0.3164	0.0000	0.0000
47.6	0.017693	0.0265	1.044	0.0265	0.3178	0.0000	0.0000
47.8	0.017768	0.0267	1.044	0.0267	0.3192	0.0000	0.0000
48	0.017843	0.0268	1.044	0.0268	0.3205	0.0000	0.0000
48.2	0.017918	0.0269	1.044	0.0269	0.3219	0.0000	0.0000
48.4	0.017993	0.0270	1.044	0.0270	0.3232	0.0000	0.0000
48.6	0.018069	0.0271	1.044	0.0271	0.3246	0.0000	0.0000
48.8	0.018144	0.0272	1.044	0.0272	0.3259	0.0000	0.0000
49	0.018219	0.0273	1.044	0.0273	0.3273	0.0000	0.0000
49.2	0.018294	0.0274	1.044	0.0274	0.3286	0.0000	0.0000
49.4	0.018369	0.0276	1.044	0.0276	0.3300	0.0000	0.0000
49.6	0.018444	0.0277	1.044	0.0277	0.3313	0.0000	0.0000
49.8	0.018519	0.0278	1.044	0.0278	0.3327	0.0000	0.0000
50	0.018595	0.0279	1.044	0.0279	0.3340	0.0000	0.0000
50.2	0.01867	0.0280	1.044	0.0280	0.3354	0.0000	0.0000
50.4	0.018745	0.0281	1.044	0.0281	0.3367	0.0000	0.0000
50.6	0.01882	0.0282	1.044	0.0282	0.3381	0.0000	0.0000
50.8	0.018895	0.0283	1.044	0.0283	0.3394	0.0000	0.0000
51	0.01897	0.0285	1.044	0.0285	0.3408	0.0000	0.0000
51.2	0.019046	0.0286	1.044	0.0286	0.3421	0.0000	0.0000
51.4	0.019121	0.0287	1.044	0.0287	0.3435	0.0000	0.0000
51.6	0.019196	0.0288	1.044	0.0288	0.3449	0.0000	0.0000
51.8	0.019271	0.0289	1.044	0.0289	0.3462	0.0000	0.0000
52	0.019347	0.0290	1.044	0.0290	0.3476	0.0000	0.0000
52.2	0.019422	0.0291	1.044	0.0291	0.3489	0.0000	0.0000
52.4	0.019497	0.0292	1.044	0.0292	0.3503	0.0000	0.0000
52.6	0.019572	0.0294	1.044	0.0294	0.3516	0.0000	0.0000
52.8	0.019647	0.0295	1.044	0.0295	0.3530	0.0000	0.0000
53	0.019723	0.0296	1.044	0.0296	0.3543	0.0000	0.0000
53.2	0.019798	0.0297	1.044	0.0297	0.3557	0.0000	0.0000
53.4	0.019873	0.0298	1.044	0.0298	0.3570	0.0000	0.0000
53.6	0.019949	0.0299	1.044	0.0299	0.3584	0.0000	0.0000
53.8	0.020024	0.0300	1.044	0.0300	0.3598	0.0000	0.0000
54	0.020099	0.0301	1.044	0.0301	0.3611	0.0000	0.0000
54.2	0.020174	0.0303	1.044	0.0303	0.3625	0.0000	0.0000
54.4	0.02025	0.0304	1.044	0.0304	0.3638	0.0000	0.0000
54.6	0.020325	0.0305	1.044	0.0305	0.3652	0.0000	0.0000
54.8	0.0204	0.0306	1.044	0.0306	0.3665	0.0000	0.0000

55	0.020476	0.0307	1.044	0.0307	0.3679	0.0000	0.0000
55.2	0.020551	0.0308	1.044	0.0308	0.3692	0.0000	0.0000
55.4	0.020626	0.0309	1.044	0.0309	0.3706	0.0000	0.0000
55.6	0.020702	0.0311	1.044	0.0311	0.3720	0.0000	0.0000
55.8	0.020777	0.0312	1.044	0.0312	0.3733	0.0000	0.0000
56	0.020852	0.0313	1.044	0.0313	0.3747	0.0000	0.0000
56.2	0.020928	0.0314	1.044	0.0314	0.3760	0.0000	0.0000
56.4	0.021003	0.0315	1.044	0.0315	0.3774	0.0000	0.0000
56.6	0.021078	0.0316	1.044	0.0316	0.3787	0.0000	0.0000
56.8	0.021154	0.0317	1.044	0.0317	0.3801	0.0000	0.0000
57	0.021229	0.0318	1.044	0.0318	0.3814	0.0000	0.0000
57.2	0.021305	0.0320	1.044	0.0320	0.3828	0.0000	0.0000
57.4	0.02138	0.0321	1.044	0.0321	0.3842	0.0000	0.0000
57.6	0.021455	0.0322	1.044	0.0322	0.3855	0.0000	0.0000
57.8	0.021531	0.0323	1.044	0.0323	0.3869	0.0000	0.0000
58	0.021606	0.0324	1.044	0.0324	0.3882	0.0000	0.0000
58.2	0.021682	0.0325	1.044	0.0325	0.3896	0.0000	0.0000
58.4	0.021757	0.0326	1.044	0.0326	0.3909	0.0000	0.0000
58.6	0.021833	0.0327	1.044	0.0327	0.3923	0.0000	0.0000
58.8	0.021908	0.0329	1.044	0.0329	0.3937	0.0000	0.0000
59	0.021983	0.0330	1.044	0.0330	0.3950	0.0000	0.0000
59.2	0.022059	0.0331	1.044	0.0331	0.3964	0.0000	0.0000
59.4	0.022134	0.0332	1.044	0.0332	0.3977	0.0000	0.0000
59.6	0.02221	0.0333	1.044	0.0333	0.3991	0.0000	0.0000
59.8	0.022285	0.0334	1.044	0.0334	0.4005	0.0000	0.0000
60	0.022361	0.0335	1.044	0.0335	0.4018	0.0000	0.0000
60.2	0.022436	0.0337	1.044	0.0337	0.4032	0.0000	0.0000
60.4	0.022512	0.0338	1.044	0.0338	0.4045	0.0000	0.0000
60.6	0.022587	0.0339	1.044	0.0339	0.4059	0.0000	0.0000
60.8	0.022663	0.0340	1.044	0.0340	0.4072	0.0000	0.0000
61	0.022738	0.0341	1.044	0.0341	0.4086	0.0000	0.0000
61.2	0.022814	0.0342	1.044	0.0342	0.4100	0.0000	0.0000
61.4	0.022889	0.0343	1.044	0.0343	0.4113	0.0000	0.0000
61.6	0.022965	0.0344	1.044	0.0344	0.4127	0.0000	0.0000
61.8	0.02304	0.0346	1.044	0.0346	0.4140	0.0000	0.0000
62	0.023116	0.0347	1.044	0.0347	0.4154	0.0000	0.0000
62.2	0.023191	0.0348	1.044	0.0348	0.4168	0.0000	0.0000
62.4	0.023267	0.0349	1.044	0.0349	0.4181	0.0000	0.0000
62.6	0.023343	0.0350	1.044	0.0350	0.4195	0.0000	0.0000
62.8	0.023418	0.0351	1.044	0.0351	0.4208	0.0000	0.0000
63	0.023494	0.0352	1.044	0.0352	0.4222	0.0000	0.0000
63.2	0.023569	0.0354	1.044	0.0354	0.4236	0.0000	0.0000
63.4	0.023645	0.0355	1.044	0.0355	0.4249	0.0000	0.0000
63.6	0.023721	0.0356	1.044	0.0356	0.4263	0.0000	0.0000
63.8	0.023796	0.0357	1.044	0.0357	0.4277	0.0000	0.0000
64	0.023872	0.0358	1.044	0.0358	0.4290	0.0000	0.0000
64.2	0.023947	0.0359	1.044	0.0359	0.4304	0.0000	0.0000

64.4	0.024023	0.0360	1.044	0.0360	0.4317	0.0000	0.0000
64.6	0.024099	0.0361	1.044	0.0361	0.4331	0.0000	0.0000
64.8	0.024174	0.0363	1.044	0.0363	0.4345	0.0000	0.0000
65	0.02425	0.0364	1.044	0.0364	0.4358	0.0000	0.0000
65.2	0.024326	0.0365	1.044	0.0365	0.4372	0.0000	0.0000
65.4	0.024401	0.0366	1.044	0.0366	0.4385	0.0000	0.0000
65.6	0.024477	0.0367	1.044	0.0367	0.4399	0.0000	0.0000
65.8	0.024553	0.0368	1.044	0.0368	0.4413	0.0000	0.0000
66	0.024628	0.0369	1.044	0.0369	0.4426	0.0000	0.0000
66.2	0.024704	0.0371	1.044	0.0371	0.4440	0.0000	0.0000
66.4	0.02478	0.0372	1.044	0.0372	0.4454	0.0000	0.0000
66.6	0.024855	0.0373	1.044	0.0373	0.4467	0.0000	0.0000
66.8	0.024931	0.0374	1.044	0.0374	0.4481	0.0000	0.0000
67	0.025007	0.0375	1.044	0.0375	0.4494	0.0000	0.0000
67.2	0.025082	0.0376	1.044	0.0376	0.4508	0.0000	0.0000
67.4	0.025158	0.0377	1.044	0.0377	0.4522	0.0000	0.0000
67.6	0.025234	0.0379	1.044	0.0379	0.4535	0.0000	0.0000
67.8	0.02531	0.0380	1.044	0.0380	0.4549	0.0000	0.0000
68	0.025385	0.0381	1.044	0.0381	0.4563	0.0000	0.0000
68.2	0.025461	0.0382	1.044	0.0382	0.4576	0.0000	0.0000
68.4	0.025537	0.0383	1.044	0.0383	0.4590	0.0000	0.0000
68.6	0.025613	0.0384	1.044	0.0384	0.4603	0.0000	0.0000
68.8	0.025688	0.0385	1.044	0.0385	0.4617	0.0000	0.0000
69	0.025764	0.0386	1.044	0.0386	0.4631	0.0000	0.0000
69.2	0.02584	0.0388	1.044	0.0388	0.4644	0.0000	0.0000
69.4	0.025916	0.0389	1.044	0.0389	0.4658	0.0000	0.0000
69.6	0.025992	0.0390	1.044	0.0390	0.4672	0.0000	0.0000
69.8	0.026067	0.0391	1.044	0.0391	0.4685	0.0000	0.0000
70	0.026143	0.0392	1.044	0.0392	0.4699	0.0000	0.0000
70.2	0.026219	0.0393	1.044	0.0393	0.4713	0.0000	0.0000
70.4	0.026295	0.0394	1.044	0.0394	0.4726	0.0000	0.0000
70.6	0.026371	0.0396	1.044	0.0396	0.4740	0.0000	0.0000
70.8	0.026446	0.0397	1.044	0.0397	0.4754	0.0000	0.0000
71	0.026522	0.0398	1.044	0.0398	0.4767	0.0000	0.0000
71.2	0.026598	0.0399	1.044	0.0399	0.4781	0.0000	0.0000
71.4	0.026674	0.0400	1.044	0.0400	0.4794	0.0000	0.0000
71.6	0.02675	0.0401	1.044	0.0401	0.4808	0.0000	0.0000
71.8	0.026826	0.0402	1.044	0.0402	0.4822	0.0000	0.0000
72	0.026902	0.0404	1.044	0.0404	0.4835	0.0000	0.0000
72.2	0.026978	0.0405	1.044	0.0405	0.4849	0.0000	0.0000
72.4	0.027053	0.0406	1.044	0.0406	0.4863	0.0000	0.0000
72.6	0.027129	0.0407	1.044	0.0407	0.4876	0.0000	0.0000
72.8	0.027205	0.0408	1.044	0.0408	0.4890	0.0000	0.0000
73	0.027281	0.0409	1.044	0.0409	0.4904	0.0000	0.0000
73.2	0.027357	0.0410	1.044	0.0410	0.4917	0.0000	0.0000
73.4	0.027433	0.0411	1.044	0.0411	0.4931	0.0000	0.0000
73.6	0.027509	0.0413	1.044	0.0413	0.4945	0.0000	0.0000

73.8	0.027585	0.0414	1.044	0.0414	0.4958	0.0000	0.0000
74	0.027661	0.0415	1.044	0.0415	0.4972	0.0000	0.0000
74.2	0.027737	0.0416	1.044	0.0416	0.4986	0.0000	0.0000
74.4	0.027813	0.0417	1.044	0.0417	0.4999	0.0000	0.0000
74.6	0.027889	0.0418	1.044	0.0418	0.5013	0.0000	0.0000
74.8	0.027965	0.0419	1.044	0.0419	0.5027	0.0000	0.0000
75	0.028041	0.0421	1.044	0.0421	0.5040	0.0000	0.0000
75.2	0.028117	0.0422	1.044	0.0422	0.5054	0.0000	0.0000
75.4	0.028193	0.0423	1.044	0.0423	0.5068	0.0000	0.0000
75.6	0.028268	0.0424	1.044	0.0424	0.5081	0.0000	0.0000
75.8	0.028344	0.0425	1.044	0.0425	0.5095	0.0000	0.0000
76	0.028421	0.0426	1.044	0.0426	0.5109	0.0000	0.0000
76.2	0.028497	0.0427	1.044	0.0427	0.5123	0.0000	0.0000
76.4	0.028573	0.0429	1.044	0.0429	0.5136	0.0000	0.0000
76.6	0.028649	0.0430	1.044	0.0430	0.5150	0.0000	0.0000
76.8	0.028725	0.0431	1.044	0.0431	0.5164	0.0000	0.0000
77	0.028801	0.0432	1.044	0.0432	0.5177	0.0000	0.0000
77.2	0.028877	0.0433	1.044	0.0433	0.5191	0.0000	0.0000
77.4	0.028953	0.0434	1.044	0.0434	0.5205	0.0000	0.0000
77.6	0.029029	0.0435	1.044	0.0435	0.5218	0.0000	0.0000
77.8	0.029105	0.0437	1.044	0.0437	0.5232	0.0000	0.0000
78	0.029181	0.0438	1.044	0.0438	0.5246	0.0000	0.0000
78.2	0.029257	0.0439	1.044	0.0439	0.5259	0.0000	0.0000
78.4	0.029333	0.0440	1.044	0.0440	0.5273	0.0000	0.0000
78.6	0.029409	0.0441	1.044	0.0441	0.5287	0.0000	0.0000
78.8	0.029485	0.0442	1.044	0.0442	0.5301	0.0000	0.0000
79	0.029561	0.0443	1.044	0.0443	0.5314	0.0000	0.0000
79.2	0.029638	0.0445	1.044	0.0445	0.5328	0.0000	0.0000
79.4	0.029714	0.0446	1.044	0.0446	0.5342	0.0000	0.0000
79.6	0.02979	0.0447	1.044	0.0447	0.5355	0.0000	0.0000
79.8	0.029866	0.0448	1.044	0.0448	0.5369	0.0000	0.0000
80	0.029942	0.0449	1.044	0.0449	0.5383	0.0000	0.0000
80.2	0.030018	0.0450	1.044	0.0450	0.5396	0.0000	0.0000
80.4	0.030094	0.0451	1.044	0.0451	0.5410	0.0000	0.0000
80.6	0.030171	0.0453	1.044	0.0453	0.5424	0.0000	0.0000
80.8	0.030247	0.0454	1.044	0.0454	0.5438	0.0000	0.0000
81	0.030323	0.0455	1.044	0.0455	0.5451	0.0000	0.0000
81.2	0.030399	0.0456	1.044	0.0456	0.5465	0.0000	0.0000
81.4	0.030475	0.0457	1.044	0.0457	0.5479	0.0000	0.0000
81.6	0.030551	0.0458	1.044	0.0458	0.5492	0.0000	0.0000
81.8	0.030628	0.0459	1.044	0.0459	0.5506	0.0000	0.0000
82	0.030704	0.0461	1.044	0.0461	0.5520	0.0000	0.0000
82.2	0.03078	0.0462	1.044	0.0462	0.5534	0.0000	0.0000
82.4	0.030856	0.0463	1.044	0.0463	0.5547	0.0000	0.0000
82.6	0.030932	0.0464	1.044	0.0464	0.5561	0.0000	0.0000
82.8	0.031009	0.0465	1.044	0.0465	0.5575	0.0000	0.0000
83	0.031085	0.0466	1.044	0.0466	0.5588	0.0000	0.0000

83.2	0.031161	0.0467	1.044	0.0467	0.5602	0.0000	0.0000
83.4	0.031237	0.0469	1.044	0.0469	0.5616	0.0000	0.0000
83.6	0.031314	0.0470	1.044	0.0470	0.5630	0.0000	0.0000
83.8	0.03139	0.0471	1.044	0.0471	0.5643	0.0000	0.0000
84	0.031466	0.0472	1.044	0.0472	0.5657	0.0000	0.0000
84.2	0.031543	0.0473	1.044	0.0473	0.5671	0.0000	0.0000
84.4	0.031619	0.0474	1.044	0.0474	0.5685	0.0000	0.0000
84.6	0.031695	0.0475	1.044	0.0475	0.5698	0.0000	0.0000
84.8	0.031771	0.0477	1.044	0.0477	0.5712	0.0000	0.0000
85	0.031848	0.0478	1.044	0.0478	0.5726	0.0000	0.0000
85.2	0.031924	0.0479	1.044	0.0479	0.5739	0.0000	0.0000
85.4	0.032	0.0480	1.044	0.0480	0.5753	0.0000	0.0000
85.6	0.032077	0.0481	1.044	0.0481	0.5767	0.0000	0.0000
85.8	0.032153	0.0482	1.044	0.0482	0.5781	0.0000	0.0000
86	0.032229	0.0483	1.044	0.0483	0.5794	0.0000	0.0000
86.2	0.032306	0.0485	1.044	0.0485	0.5808	0.0000	0.0000
86.4	0.032382	0.0486	1.044	0.0486	0.5822	0.0000	0.0000
86.6	0.032458	0.0487	1.044	0.0487	0.5836	0.0000	0.0000
86.8	0.032535	0.0488	1.044	0.0488	0.5849	0.0000	0.0000
87	0.032611	0.0489	1.044	0.0489	0.5863	0.0000	0.0000
87.2	0.032688	0.0490	1.044	0.0490	0.5877	0.0000	0.0000
87.4	0.032764	0.0491	1.044	0.0491	0.5891	0.0000	0.0000
87.6	0.03284	0.0493	1.044	0.0493	0.5904	0.0000	0.0000
87.8	0.032917	0.0494	1.044	0.0494	0.5918	0.0000	0.0000
88	0.032993	0.0495	1.044	0.0495	0.5932	0.0000	0.0000
88.2	0.03307	0.0496	1.044	0.0496	0.5946	0.0000	0.0000
88.4	0.033146	0.0497	1.044	0.0497	0.5959	0.0000	0.0000
88.6	0.033222	0.0498	1.044	0.0498	0.5973	0.0000	0.0000
88.8	0.033299	0.0499	1.044	0.0499	0.5987	0.0000	0.0000
89	0.033375	0.0501	1.044	0.0501	0.6001	0.0000	0.0000
89.2	0.033452	0.0502	1.044	0.0502	0.6014	0.0000	0.0000
89.4	0.033528	0.0503	1.044	0.0503	0.6028	0.0000	0.0000
89.6	0.033605	0.0504	1.044	0.0504	0.6042	0.0000	0.0000
89.8	0.033681	0.0505	1.044	0.0505	0.6056	0.0000	0.0000
90	0.033758	0.0506	1.044	0.0506	0.6069	0.0000	0.0000
90.2	0.033834	0.0508	1.044	0.0508	0.6083	0.0000	0.0000
90.4	0.033911	0.0509	1.044	0.0509	0.6097	0.0000	0.0000
90.6	0.033987	0.0510	1.044	0.0510	0.6111	0.0000	0.0000
90.8	0.034064	0.0511	1.044	0.0511	0.6125	0.0000	0.0000
91	0.03414	0.0512	1.044	0.0512	0.6138	0.0000	0.0000
91.2	0.034217	0.0513	1.044	0.0513	0.6152	0.0000	0.0000
91.4	0.034293	0.0514	1.044	0.0514	0.6166	0.0000	0.0000
91.6	0.03437	0.0516	1.044	0.0516	0.6180	0.0000	0.0000
91.8	0.034446	0.0517	1.044	0.0517	0.6193	0.0000	0.0000
92	0.034523	0.0518	1.044	0.0518	0.6207	0.0000	0.0000
92.2	0.034599	0.0519	1.044	0.0519	0.6221	0.0000	0.0000
92.4	0.034676	0.0520	1.044	0.0520	0.6235	0.0000	0.0000

92.6	0.034752	0.0521	1.044	0.0521	0.6249	0.0000	0.0000
92.8	0.034829	0.0522	1.044	0.0522	0.6262	0.0000	0.0000
93	0.034906	0.0524	1.044	0.0524	0.6276	0.0000	0.0000
93.2	0.034982	0.0525	1.044	0.0525	0.6290	0.0000	0.0000
93.4	0.035059	0.0526	1.044	0.0526	0.6304	0.0000	0.0000
93.6	0.035135	0.0527	1.044	0.0527	0.6317	0.0000	0.0000
93.8	0.035212	0.0528	1.044	0.0528	0.6331	0.0000	0.0000
94	0.035289	0.0529	1.044	0.0529	0.6345	0.0000	0.0000
94.2	0.035365	0.0530	1.044	0.0530	0.6359	0.0000	0.0000
94.4	0.035442	0.0532	1.044	0.0532	0.6373	0.0000	0.0000
94.6	0.035518	0.0533	1.044	0.0533	0.6386	0.0000	0.0000
94.8	0.035595	0.0534	1.044	0.0534	0.6400	0.0000	0.0000
95	0.035672	0.0535	1.044	0.0535	0.6414	0.0000	0.0000
95.2	0.035748	0.0536	1.044	0.0536	0.6428	0.0000	0.0000
95.4	0.035825	0.0537	1.044	0.0537	0.6442	0.0000	0.0000
95.6	0.035902	0.0539	1.044	0.0539	0.6455	0.0000	0.0000
95.8	0.035978	0.0540	1.044	0.0540	0.6469	0.0000	0.0000
96	0.036055	0.0541	1.044	0.0541	0.6483	0.0000	0.0000
96.2	0.036132	0.0542	1.044	0.0542	0.6497	0.0000	0.0000
96.4	0.036208	0.0543	1.044	0.0543	0.6511	0.0000	0.0000
96.6	0.036285	0.0544	1.044	0.0544	0.6524	0.0000	0.0000
96.8	0.036362	0.0545	1.044	0.0545	0.6538	0.0000	0.0000
97	0.036439	0.0547	1.044	0.0547	0.6552	0.0000	0.0000
97.2	0.036515	0.0548	1.044	0.0548	0.6566	0.0000	0.0000
97.4	0.036592	0.0549	1.044	0.0549	0.6580	0.0000	0.0000
97.6	0.036669	0.0550	1.044	0.0550	0.6593	0.0000	0.0000
97.8	0.036746	0.0551	1.044	0.0551	0.6607	0.0000	0.0000
98	0.036822	0.0552	1.044	0.0552	0.6621	0.0000	0.0000
98.2	0.036899	0.0553	1.044	0.0553	0.6635	0.0000	0.0000
98.4	0.036976	0.0555	1.044	0.0555	0.6649	0.0000	0.0000
98.6	0.037053	0.0556	1.044	0.0556	0.6663	0.0000	0.0000
98.8	0.037129	0.0557	1.044	0.0557	0.6676	0.0000	0.0000
99	0.037206	0.0558	1.044	0.0558	0.6690	0.0000	0.0000
99.2	0.037283	0.0559	1.044	0.0559	0.6704	0.0000	0.0000
99.4	0.03736	0.0560	1.044	0.0560	0.6718	0.0000	0.0000
99.6	0.037436	0.0562	1.044	0.0562	0.6732	0.0000	0.0000
99.8	0.037513	0.0563	1.044	0.0563	0.6745	0.0000	0.0000
100	0.03759	0.0564	1.044	0.0564	0.6759	0.0000	0.0000
100.2	0.037667	0.0565	1.044	0.0565	0.6773	0.0000	0.0000
100.4	0.037744	0.0566	1.044	0.0566	0.6787	0.0000	0.0000
100.6	0.037821	0.0567	1.044	0.0567	0.6801	0.0000	0.0000
100.8	0.037897	0.0568	1.044	0.0568	0.6815	0.0000	0.0000
101	0.037974	0.0570	1.044	0.0570	0.6828	0.0000	0.0000
101.2	0.038051	0.0571	1.044	0.0571	0.6842	0.0000	0.0000
101.4	0.038128	0.0572	1.044	0.0572	0.6856	0.0000	0.0000
101.6	0.038205	0.0573	1.044	0.0573	0.6870	0.0000	0.0000
101.8	0.038282	0.0574	1.044	0.0574	0.6884	0.0000	0.0000

102	0.038359	0.0575	1.044	0.0575	0.6898	0.0000	0.0000
102.2	0.038436	0.0577	1.044	0.0577	0.6911	0.0000	0.0000
102.4	0.038512	0.0578	1.044	0.0578	0.6925	0.0000	0.0000
102.6	0.038589	0.0579	1.044	0.0579	0.6939	0.0000	0.0000
102.8	0.038666	0.0580	1.044	0.0580	0.6953	0.0000	0.0000
103	0.038743	0.0581	1.044	0.0581	0.6967	0.0000	0.0000
103.2	0.03882	0.0582	1.044	0.0582	0.6981	0.0000	0.0000
103.4	0.038897	0.0583	1.044	0.0583	0.6995	0.0000	0.0000
103.6	0.038974	0.0585	1.044	0.0585	0.7008	0.0000	0.0000
103.8	0.039051	0.0586	1.044	0.0586	0.7022	0.0000	0.0000
104	0.039128	0.0587	1.044	0.0587	0.7036	0.0000	0.0000
104.2	0.039205	0.0588	1.044	0.0588	0.7050	0.0000	0.0000
104.4	0.039282	0.0589	1.044	0.0589	0.7064	0.0000	0.0000
104.6	0.039359	0.0590	1.044	0.0590	0.7078	0.0000	0.0000
104.8	0.039436	0.0592	1.044	0.0592	0.7092	0.0000	0.0000
105	0.039513	0.0593	1.044	0.0593	0.7105	0.0000	0.0000
105.2	0.03959	0.0594	1.044	0.0594	0.7119	0.0000	0.0000
105.4	0.039667	0.0595	1.044	0.0595	0.7133	0.0000	0.0000
105.6	0.039744	0.0596	1.044	0.0596	0.7147	0.0000	0.0000
105.8	0.039821	0.0597	1.044	0.0597	0.7161	0.0000	0.0000
106	0.039898	0.0598	1.044	0.0598	0.7175	0.0000	0.0000
106.2	0.039975	0.0600	1.044	0.0600	0.7189	0.0000	0.0000
106.4	0.040052	0.0601	1.044	0.0601	0.7202	0.0000	0.0000
106.6	0.040129	0.0602	1.044	0.0602	0.7216	0.0000	0.0000
106.8	0.040206	0.0603	1.044	0.0603	0.7230	0.0000	0.0000
107	0.040283	0.0604	1.044	0.0604	0.7244	0.0000	0.0000
107.2	0.04036	0.0605	1.044	0.0605	0.7258	0.0000	0.0000
107.4	0.040437	0.0607	1.044	0.0607	0.7272	0.0000	0.0000
107.6	0.040514	0.0608	1.044	0.0608	0.7286	0.0000	0.0000
107.8	0.040591	0.0609	1.044	0.0609	0.7300	0.0000	0.0000
108	0.040668	0.0610	1.044	0.0610	0.7313	0.0000	0.0000
108.2	0.040746	0.0611	1.044	0.0611	0.7327	0.0000	0.0000
108.4	0.040823	0.0612	1.044	0.0612	0.7341	0.0000	0.0000
108.6	0.0409	0.0613	1.044	0.0613	0.7355	0.0000	0.0000
108.8	0.040977	0.0615	1.044	0.0615	0.7369	0.0000	0.0000
109	0.041054	0.0616	1.044	0.0616	0.7383	0.0000	0.0000
109.2	0.041131	0.0617	1.044	0.0617	0.7397	0.0000	0.0000
109.4	0.041208	0.0618	1.044	0.0618	0.7411	0.0000	0.0000
109.6	0.041285	0.0619	1.044	0.0619	0.7424	0.0000	0.0000
109.8	0.041363	0.0620	1.044	0.0620	0.7438	0.0000	0.0000
110	0.04144	0.0622	1.044	0.0622	0.7452	0.0000	0.0000
110.2	0.041517	0.0623	1.044	0.0623	0.7466	0.0000	0.0000
110.4	0.041594	0.0624	1.044	0.0624	0.7480	0.0000	0.0000
110.6	0.041671	0.0625	1.044	0.0625	0.7494	0.0000	0.0000
110.8	0.041749	0.0626	1.044	0.0626	0.7508	0.0000	0.0000
111	0.041826	0.0627	1.044	0.0627	0.7522	0.0000	0.0000
111.2	0.041903	0.0629	1.044	0.0629	0.7536	0.0000	0.0000

111.4	0.04198	0.0630	1.044	0.0630	0.7549	0.0000	0.0000
111.6	0.042057	0.0631	1.044	0.0631	0.7563	0.0000	0.0000
111.8	0.042135	0.0632	1.044	0.0632	0.7577	0.0000	0.0000
112	0.042212	0.0633	1.044	0.0633	0.7591	0.0000	0.0000
112.2	0.042289	0.0634	1.044	0.0634	0.7605	0.0000	0.0000
112.4	0.042366	0.0635	1.044	0.0635	0.7619	0.0000	0.0000
112.6	0.042444	0.0637	1.044	0.0637	0.7633	0.0000	0.0000
112.8	0.042521	0.0638	1.044	0.0638	0.7647	0.0000	0.0000
113	0.042598	0.0639	1.044	0.0639	0.7661	0.0000	0.0000
113.2	0.042675	0.0640	1.044	0.0640	0.7675	0.0000	0.0000
113.4	0.042753	0.0641	1.044	0.0641	0.7689	0.0000	0.0000
113.6	0.04283	0.0642	1.044	0.0642	0.7702	0.0000	0.0000
113.8	0.042907	0.0644	1.044	0.0644	0.7716	0.0000	0.0000
114	0.042985	0.0645	1.044	0.0645	0.7730	0.0000	0.0000
114.2	0.043062	0.0646	1.044	0.0646	0.7744	0.0000	0.0000
114.4	0.043139	0.0647	1.044	0.0647	0.7758	0.0000	0.0000
114.6	0.043216	0.0648	1.044	0.0648	0.7772	0.0000	0.0000
114.8	0.043294	0.0649	1.044	0.0649	0.7786	0.0000	0.0000
115	0.043371	0.0651	1.044	0.0651	0.7800	0.0000	0.0000
115.2	0.043448	0.0652	1.044	0.0652	0.7814	0.0000	0.0000
115.4	0.043526	0.0653	1.044	0.0653	0.7828	0.0000	0.0000
115.6	0.043603	0.0654	1.044	0.0654	0.7842	0.0000	0.0000
115.8	0.043681	0.0655	1.044	0.0655	0.7856	0.0000	0.0000
116	0.043758	0.0656	1.044	0.0656	0.7869	0.0000	0.0000
116.2	0.043835	0.0658	1.044	0.0658	0.7883	0.0000	0.0000
116.4	0.043913	0.0659	1.044	0.0659	0.7897	0.0000	0.0000
116.6	0.04399	0.0660	1.044	0.0660	0.7911	0.0000	0.0000
116.8	0.044067	0.0661	1.044	0.0661	0.7925	0.0000	0.0000
117	0.044145	0.0662	1.044	0.0662	0.7939	0.0000	0.0000
117.2	0.044222	0.0663	1.044	0.0663	0.7953	0.0000	0.0000
117.4	0.0443	0.0664	1.044	0.0664	0.7967	0.0000	0.0000
117.6	0.044377	0.0666	1.044	0.0666	0.7981	0.0000	0.0000
117.8	0.044455	0.0667	1.044	0.0667	0.7995	0.0000	0.0000
118	0.044532	0.0668	1.044	0.0668	0.8009	0.0000	0.0000
118.2	0.044609	0.0669	1.044	0.0669	0.8023	0.0000	0.0000
118.4	0.044687	0.0670	1.044	0.0670	0.8037	0.0000	0.0000
118.6	0.044764	0.0671	1.044	0.0671	0.8051	0.0000	0.0000
118.8	0.044842	0.0673	1.044	0.0673	0.8065	0.0000	0.0000
119	0.044919	0.0674	1.044	0.0674	0.8079	0.0000	0.0000
119.2	0.044997	0.0675	1.044	0.0675	0.8092	0.0000	0.0000
119.4	0.045074	0.0676	1.044	0.0676	0.8106	0.0000	0.0000
119.6	0.045152	0.0677	1.044	0.0677	0.8120	0.0000	0.0000
119.8	0.045229	0.0678	1.044	0.0678	0.8134	0.0000	0.0000
120	0.045307	0.0680	1.044	0.0680	0.8148	0.0000	0.0000
120.2	0.045384	0.0681	1.044	0.0681	0.8162	0.0000	0.0000
120.4	0.045462	0.0682	1.044	0.0682	0.8176	0.0000	0.0000
120.6	0.045539	0.0683	1.044	0.0683	0.8190	0.0000	0.0000

120.8	0.045617	0.0684	1.044	0.0684	0.8204	0.0000	0.0000
121	0.045695	0.0685	1.044	0.0685	0.8218	0.0000	0.0000
121.2	0.045772	0.0687	1.044	0.0687	0.8232	0.0000	0.0000
121.4	0.04585	0.0688	1.044	0.0688	0.8246	0.0000	0.0000
121.6	0.045927	0.0689	1.044	0.0689	0.8260	0.0000	0.0000
121.8	0.046005	0.0690	1.044	0.0690	0.8274	0.0000	0.0000
122	0.046082	0.0691	1.044	0.0691	0.8288	0.0000	0.0000
122.2	0.04616	0.0692	1.044	0.0692	0.8302	0.0000	0.0000
122.4	0.046238	0.0694	1.044	0.0694	0.8316	0.0000	0.0000
122.6	0.046315	0.0695	1.044	0.0695	0.8330	0.0000	0.0000
122.8	0.046393	0.0696	1.044	0.0696	0.8344	0.0000	0.0000
123	0.04647	0.0697	1.044	0.0697	0.8358	0.0000	0.0000
123.2	0.046548	0.0698	1.044	0.0698	0.8372	0.0000	0.0000
123.4	0.046626	0.0699	1.044	0.0699	0.8386	0.0000	0.0000
123.6	0.046703	0.0701	1.044	0.0701	0.8400	0.0000	0.0000
123.8	0.046781	0.0702	1.044	0.0702	0.8414	0.0000	0.0000
124	0.046859	0.0703	1.044	0.0703	0.8428	0.0000	0.0000
124.2	0.046936	0.0704	1.044	0.0704	0.8442	0.0000	0.0000
124.4	0.047014	0.0705	1.044	0.0705	0.8456	0.0000	0.0000
124.6	0.047092	0.0706	1.044	0.0706	0.8469	0.0000	0.0000
124.8	0.047169	0.0708	1.044	0.0708	0.8483	0.0000	0.0000
125	0.047247	0.0709	1.044	0.0709	0.8497	0.0000	0.0000
125.2	0.047325	0.0710	1.044	0.0710	0.8511	0.0000	0.0000
125.4	0.047402	0.0711	1.044	0.0711	0.8525	0.0000	0.0000
125.6	0.04748	0.0712	1.044	0.0712	0.8539	0.0000	0.0000
125.8	0.047558	0.0713	1.044	0.0713	0.8553	0.0000	0.0000
126	0.047636	0.0715	1.044	0.0715	0.8567	0.0000	0.0000
126.2	0.047713	0.0716	1.044	0.0716	0.8581	0.0000	0.0000
126.4	0.047791	0.0717	1.044	0.0717	0.8595	0.0000	0.0000
126.6	0.047869	0.0718	1.044	0.0718	0.8609	0.0000	0.0000
126.8	0.047947	0.0719	1.044	0.0719	0.8623	0.0000	0.0000
127	0.048024	0.0720	1.044	0.0720	0.8637	0.0000	0.0000
127.2	0.048102	0.0722	1.044	0.0722	0.8651	0.0000	0.0000
127.4	0.04818	0.0723	1.044	0.0723	0.8665	0.0000	0.0000
127.6	0.048258	0.0724	1.044	0.0724	0.8679	0.0000	0.0000
127.8	0.048335	0.0725	1.044	0.0725	0.8693	0.0000	0.0000
128	0.048413	0.0726	1.044	0.0726	0.8707	0.0000	0.0000
128.2	0.048491	0.0727	1.044	0.0727	0.8721	0.0000	0.0000
128.4	0.048569	0.0729	1.044	0.0729	0.8735	0.0000	0.0000
128.6	0.048647	0.0730	1.044	0.0730	0.8749	0.0000	0.0000
128.8	0.048724	0.0731	1.044	0.0731	0.8763	0.0000	0.0000
129	0.048802	0.0732	1.044	0.0732	0.8777	0.0000	0.0000
129.2	0.04888	0.0733	1.044	0.0733	0.8791	0.0000	0.0000
129.4	0.048958	0.0734	1.044	0.0734	0.8805	0.0000	0.0000
129.6	0.049036	0.0736	1.044	0.0736	0.8819	0.0000	0.0000
129.8	0.049114	0.0737	1.044	0.0737	0.8833	0.0000	0.0000
130	0.049192	0.0738	1.044	0.0738	0.8847	0.0000	0.0000

130.2	0.049269	0.0739	1.044	0.0739	0.8861	0.0000	0.0000
130.4	0.049347	0.0740	1.044	0.0740	0.8876	0.0000	0.0000
130.6	0.049425	0.0741	1.044	0.0741	0.8890	0.0000	0.0000
130.8	0.049503	0.0743	1.044	0.0743	0.8904	0.0000	0.0000
131	0.049581	0.0744	1.044	0.0744	0.8918	0.0000	0.0000
131.2	0.049659	0.0745	1.044	0.0745	0.8932	0.0000	0.0000
131.4	0.049737	0.0746	1.044	0.0746	0.8946	0.0000	0.0000
131.6	0.049815	0.0747	1.044	0.0747	0.8960	0.0000	0.0000
131.8	0.049893	0.0748	1.044	0.0748	0.8974	0.0000	0.0000
132	0.049971	0.0750	1.044	0.0750	0.8988	0.0000	0.0000
132.2	0.050049	0.0751	1.044	0.0751	0.9002	0.0000	0.0000
132.4	0.050127	0.0752	1.044	0.0752	0.9016	0.0000	0.0000
132.6	0.050205	0.0753	1.044	0.0753	0.9030	0.0000	0.0000
132.8	0.050282	0.0754	1.044	0.0754	0.9044	0.0000	0.0000
133	0.05036	0.0755	1.044	0.0755	0.9058	0.0000	0.0000
133.2	0.050438	0.0757	1.044	0.0757	0.9072	0.0000	0.0000
133.4	0.050516	0.0758	1.044	0.0758	0.9086	0.0000	0.0000
133.6	0.050594	0.0759	1.044	0.0759	0.9100	0.0000	0.0000
133.8	0.050672	0.0760	1.044	0.0760	0.9114	0.0000	0.0000
134	0.05075	0.0761	1.044	0.0761	0.9128	0.0000	0.0000
134.2	0.050828	0.0762	1.044	0.0762	0.9142	0.0000	0.0000
134.4	0.050906	0.0764	1.044	0.0764	0.9156	0.0000	0.0000
134.6	0.050985	0.0765	1.044	0.0765	0.9170	0.0000	0.0000
134.8	0.051063	0.0766	1.044	0.0766	0.9184	0.0000	0.0000
135	0.051141	0.0767	1.044	0.0767	0.9198	0.0000	0.0000
135.2	0.051219	0.0768	1.044	0.0768	0.9212	0.0000	0.0000
135.4	0.051297	0.0769	1.044	0.0769	0.9226	0.0000	0.0000
135.6	0.051375	0.0771	1.044	0.0771	0.9240	0.0000	0.0000
135.8	0.051453	0.0772	1.044	0.0772	0.9254	0.0000	0.0000
136	0.051531	0.0773	1.044	0.0773	0.9269	0.0000	0.0000
136.2	0.051609	0.0774	1.044	0.0774	0.9283	0.0000	0.0000
136.4	0.051687	0.0775	1.044	0.0775	0.9297	0.0000	0.0000
136.6	0.051765	0.0776	1.044	0.0776	0.9311	0.0000	0.0000
136.8	0.051843	0.0778	1.044	0.0778	0.9325	0.0000	0.0000
137	0.051921	0.0779	1.044	0.0779	0.9339	0.0000	0.0000
137.2	0.052	0.0780	1.044	0.0780	0.9353	0.0000	0.0000
137.4	0.052078	0.0781	1.044	0.0781	0.9367	0.0000	0.0000
137.6	0.052156	0.0782	1.044	0.0782	0.9381	0.0000	0.0000
137.8	0.052234	0.0784	1.044	0.0784	0.9395	0.0000	0.0000
138	0.052312	0.0785	1.044	0.0785	0.9409	0.0000	0.0000
138.2	0.05239	0.0786	1.044	0.0786	0.9423	0.0000	0.0000
138.4	0.052469	0.0787	1.044	0.0787	0.9437	0.0000	0.0000
138.6	0.052547	0.0788	1.044	0.0788	0.9451	0.0000	0.0000
138.8	0.052625	0.0789	1.044	0.0789	0.9465	0.0000	0.0000
139	0.052703	0.0791	1.044	0.0791	0.9480	0.0000	0.0000
139.2	0.052781	0.0792	1.044	0.0792	0.9494	0.0000	0.0000
139.4	0.05286	0.0793	1.044	0.0793	0.9508	0.0000	0.0000

139.6	0.052938	0.0794	1.044	0.0794	0.9522	0.0000	0.0000
139.8	0.053016	0.0795	1.044	0.0795	0.9536	0.0000	0.0000
140	0.053094	0.0796	1.044	0.0796	0.9550	0.0000	0.0000
140.2	0.053172	0.0798	1.044	0.0798	0.9564	0.0000	0.0000
140.4	0.053251	0.0799	1.044	0.0799	0.9578	0.0000	0.0000
140.6	0.053329	0.0800	1.044	0.0800	0.9592	0.0000	0.0000
140.8	0.053407	0.0801	1.044	0.0801	0.9606	0.0000	0.0000
141	0.053485	0.0802	1.044	0.0802	0.9620	0.0000	0.0000
141.2	0.053564	0.0803	1.044	0.0803	0.9634	0.0000	0.0000
141.4	0.053642	0.0805	1.044	0.0805	0.9649	0.0000	0.0000
141.6	0.05372	0.0806	1.044	0.0806	0.9663	0.0000	0.0000
141.8	0.053799	0.0807	1.044	0.0807	0.9677	0.0000	0.0000
142	0.053877	0.0808	1.044	0.0808	0.9691	0.0000	0.0000
142.2	0.053955	0.0809	1.044	0.0809	0.9705	0.0000	0.0000
142.4	0.054034	0.0811	1.044	0.0811	0.9719	0.0000	0.0000
142.6	0.054112	0.0812	1.044	0.0812	0.9733	0.0000	0.0000
142.8	0.05419	0.0813	1.044	0.0813	0.9747	0.0000	0.0000
143	0.054268	0.0814	1.044	0.0814	0.9761	0.0000	0.0000
143.2	0.054347	0.0815	1.044	0.0815	0.9775	0.0000	0.0000
143.4	0.054425	0.0816	1.044	0.0816	0.9789	0.0000	0.0000
143.6	0.054504	0.0818	1.044	0.0818	0.9804	0.0000	0.0000
143.8	0.054582	0.0819	1.044	0.0819	0.9818	0.0000	0.0000
144	0.05466	0.0820	1.044	0.0820	0.9832	0.0000	0.0000
144.2	0.054739	0.0821	1.044	0.0821	0.9846	0.0000	0.0000
144.4	0.054817	0.0822	1.044	0.0822	0.9860	0.0000	0.0000
144.6	0.054895	0.0823	1.044	0.0823	0.9874	0.0000	0.0000
144.8	0.054974	0.0825	1.044	0.0825	0.9888	0.0000	0.0000
145	0.055052	0.0826	1.044	0.0826	0.9902	0.0000	0.0000
145.2	0.055131	0.0827	1.044	0.0827	0.9916	0.0000	0.0000
145.4	0.055209	0.0828	1.044	0.0828	0.9931	0.0000	0.0000
145.6	0.055288	0.0829	1.044	0.0829	0.9945	0.0000	0.0000
145.8	0.055366	0.0830	1.044	0.0830	0.9959	0.0000	0.0000
146	0.055444	0.0832	1.044	0.0832	0.9973	0.0000	0.0000
146.2	0.055523	0.0833	1.044	0.0833	0.9987	0.0000	0.0000
146.4	0.055601	0.0834	1.044	0.0834	1.0001	0.0000	0.0000
146.6	0.05568	0.0835	1.044	0.0835	1.0015	0.0000	0.0000
146.8	0.055758	0.0836	1.044	0.0836	1.0029	0.0000	0.0000
147	0.055837	0.0838	1.044	0.0838	1.0044	0.0000	0.0000
147.2	0.055915	0.0839	1.044	0.0839	1.0058	0.0000	0.0000
147.4	0.055994	0.0840	1.044	0.0840	1.0072	0.0000	0.0000
147.6	0.056072	0.0841	1.044	0.0841	1.0086	0.0000	0.0000
147.8	0.056151	0.0842	1.044	0.0842	1.0100	0.0000	0.0000
148	0.056229	0.0843	1.044	0.0843	1.0114	0.0000	0.0000
148.2	0.056308	0.0845	1.044	0.0845	1.0128	0.0000	0.0000
148.4	0.056386	0.0846	1.044	0.0846	1.0142	0.0000	0.0000
148.6	0.056465	0.0847	1.044	0.0847	1.0157	0.0000	0.0000
148.8	0.056544	0.0848	1.044	0.0848	1.0171	0.0000	0.0000

149	0.056622	0.0849	1.044	0.0849	1.0185	0.0000	0.0000
149.2	0.056701	0.0851	1.044	0.0851	1.0199	0.0000	0.0000
149.4	0.056779	0.0852	1.044	0.0852	1.0213	0.0000	0.0000
149.6	0.056858	0.0853	1.044	0.0853	1.0227	0.0000	0.0000
149.8	0.056936	0.0854	1.044	0.0854	1.0241	0.0000	0.0000
150	0.057015	0.0855	1.044	0.0855	1.0256	0.0000	0.0000
150.2	0.057094	0.0856	1.044	0.0856	1.0270	0.0000	0.0000
150.4	0.057172	0.0858	1.044	0.0858	1.0284	0.0000	0.0000
150.6	0.057251	0.0859	1.044	0.0859	1.0298	0.0000	0.0000
150.8	0.057329	0.0860	1.044	0.0860	1.0312	0.0000	0.0000
151	0.057408	0.0861	1.044	0.0861	1.0326	0.0000	0.0000
151.2	0.057487	0.0862	1.044	0.0862	1.0341	0.0000	0.0000
151.4	0.057565	0.0863	1.044	0.0863	1.0355	0.0000	0.0000
151.6	0.057644	0.0865	1.044	0.0865	1.0369	0.0000	0.0000
151.8	0.057723	0.0866	1.044	0.0866	1.0383	0.0000	0.0000
152	0.057801	0.0867	1.044	0.0867	1.0397	0.0000	0.0000
152.2	0.05788	0.0868	1.044	0.0868	1.0411	0.0000	0.0000
152.4	0.057959	0.0869	1.044	0.0869	1.0425	0.0000	0.0000
152.6	0.058037	0.0871	1.044	0.0871	1.0440	0.0000	0.0000
152.8	0.058116	0.0872	1.044	0.0872	1.0454	0.0000	0.0000
153	0.058195	0.0873	1.044	0.0873	1.0468	0.0000	0.0000
153.2	0.058273	0.0874	1.044	0.0874	1.0482	0.0000	0.0000
153.4	0.058352	0.0875	1.044	0.0875	1.0496	0.0000	0.0000
153.6	0.058431	0.0876	1.044	0.0876	1.0510	0.0000	0.0000
153.8	0.05851	0.0878	1.044	0.0878	1.0525	0.0000	0.0000
154	0.058588	0.0879	1.044	0.0879	1.0539	0.0000	0.0000
154.2	0.058667	0.0880	1.044	0.0880	1.0553	0.0000	0.0000
154.4	0.058746	0.0881	1.044	0.0881	1.0567	0.0000	0.0000
154.6	0.058825	0.0882	1.044	0.0882	1.0581	0.0000	0.0000
154.8	0.058903	0.0884	1.044	0.0884	1.0596	0.0000	0.0000
155	0.058982	0.0885	1.044	0.0885	1.0610	0.0000	0.0000
155.2	0.059061	0.0886	1.044	0.0886	1.0624	0.0000	0.0000
155.4	0.05914	0.0887	1.044	0.0887	1.0638	0.0000	0.0000
155.6	0.059219	0.0888	1.044	0.0888	1.0652	0.0000	0.0000
155.8	0.059297	0.0889	1.044	0.0889	1.0666	0.0000	0.0000
156	0.059376	0.0891	1.044	0.0891	1.0681	0.0000	0.0000
156.2	0.059455	0.0892	1.044	0.0892	1.0695	0.0000	0.0000
156.4	0.059534	0.0893	1.044	0.0893	1.0709	0.0000	0.0000
156.6	0.059613	0.0894	1.044	0.0894	1.0723	0.0000	0.0000
156.8	0.059692	0.0895	1.044	0.0895	1.0737	0.0000	0.0000
157	0.05977	0.0897	1.044	0.0897	1.0752	0.0000	0.0000
157.2	0.059849	0.0898	1.044	0.0898	1.0766	0.0000	0.0000
157.4	0.059928	0.0899	1.044	0.0899	1.0780	0.0000	0.0000
157.6	0.060007	0.0900	1.044	0.0900	1.0794	0.0000	0.0000
157.8	0.060086	0.0901	1.044	0.0901	1.0808	0.0000	0.0000
158	0.060165	0.0902	1.044	0.0902	1.0823	0.0000	0.0000
158.2	0.060244	0.0904	1.044	0.0904	1.0837	0.0000	0.0000

158.4	0.060323	0.0905	1.044	0.0905	1.0851	0.0000	0.0000
158.6	0.060402	0.0906	1.044	0.0906	1.0865	0.0000	0.0000
158.8	0.060481	0.0907	1.044	0.0907	1.0879	0.0000	0.0000
159	0.060559	0.0908	1.044	0.0908	1.0894	0.0000	0.0000
159.2	0.060638	0.0910	1.044	0.0910	1.0908	0.0000	0.0000
159.4	0.060717	0.0911	1.044	0.0911	1.0922	0.0000	0.0000
159.6	0.060796	0.0912	1.044	0.0912	1.0936	0.0000	0.0000
159.8	0.060875	0.0913	1.044	0.0913	1.0950	0.0000	0.0000
160	0.060954	0.0914	1.044	0.0914	1.0965	0.0000	0.0000
160.2	0.061033	0.0915	1.044	0.0915	1.0979	0.0000	0.0000
160.4	0.061112	0.0917	1.044	0.0917	1.0993	0.0000	0.0000
160.6	0.061191	0.0918	1.044	0.0918	1.1007	0.0000	0.0000
160.8	0.06127	0.0919	1.044	0.0919	1.1022	0.0000	0.0000
161	0.061349	0.0920	1.044	0.0920	1.1036	0.0000	0.0000
161.2	0.061428	0.0921	1.044	0.0921	1.1050	0.0000	0.0000
161.4	0.061507	0.0923	1.044	0.0923	1.1064	0.0000	0.0000
161.6	0.061586	0.0924	1.044	0.0924	1.1078	0.0000	0.0000
161.8	0.061665	0.0925	1.044	0.0925	1.1093	0.0000	0.0000
162	0.061744	0.0926	1.044	0.0926	1.1107	0.0000	0.0000
162.2	0.061823	0.0927	1.044	0.0927	1.1121	0.0000	0.0000
162.4	0.061902	0.0929	1.044	0.0929	1.1135	0.0000	0.0000
162.6	0.061981	0.0930	1.044	0.0930	1.1150	0.0000	0.0000
162.8	0.062061	0.0931	1.044	0.0931	1.1164	0.0000	0.0000
163	0.06214	0.0932	1.044	0.0932	1.1178	0.0000	0.0000
163.2	0.062219	0.0933	1.044	0.0933	1.1192	0.0000	0.0000
163.4	0.062298	0.0934	1.044	0.0934	1.1206	0.0000	0.0000
163.6	0.062377	0.0936	1.044	0.0936	1.1221	0.0000	0.0000
163.8	0.062456	0.0937	1.044	0.0937	1.1235	0.0000	0.0000
164	0.062535	0.0938	1.044	0.0938	1.1249	0.0000	0.0000
164.2	0.062614	0.0939	1.044	0.0939	1.1263	0.0000	0.0000
164.4	0.062693	0.0940	1.044	0.0940	1.1278	0.0000	0.0000
164.6	0.062772	0.0942	1.044	0.0942	1.1292	0.0000	0.0000
164.8	0.062852	0.0943	1.044	0.0943	1.1306	0.0000	0.0000
165	0.062931	0.0944	1.044	0.0944	1.1320	0.0000	0.0000
165.2	0.06301	0.0945	1.044	0.0945	1.1335	0.0000	0.0000
165.4	0.063089	0.0946	1.044	0.0946	1.1349	0.0000	0.0000
165.6	0.063168	0.0948	1.044	0.0948	1.1363	0.0000	0.0000
165.8	0.063247	0.0949	1.044	0.0949	1.1377	0.0000	0.0000
166	0.063327	0.0950	1.044	0.0950	1.1392	0.0000	0.0000
166.2	0.063406	0.0951	1.044	0.0951	1.1406	0.0000	0.0000
166.4	0.063485	0.0952	1.044	0.0952	1.1420	0.0000	0.0000
166.6	0.063564	0.0953	1.044	0.0953	1.1434	0.0000	0.0000
166.8	0.063644	0.0955	1.044	0.0955	1.1449	0.0000	0.0000
167	0.063723	0.0956	1.044	0.0956	1.1463	0.0000	0.0000
167.2	0.063802	0.0957	1.044	0.0957	1.1477	0.0000	0.0000
167.4	0.063881	0.0958	1.044	0.0958	1.1491	0.0000	0.0000
167.6	0.06396	0.0959	1.044	0.0959	1.1506	0.0000	0.0000

167.8	0.06404	0.0961	1.044	0.0961	1.1520	0.0000	0.0000
168	0.064119	0.0962	1.044	0.0962	1.1534	0.0000	0.0000
168.2	0.064198	0.0963	1.044	0.0963	1.1549	0.0000	0.0000
168.4	0.064278	0.0964	1.044	0.0964	1.1563	0.0000	0.0000
168.6	0.064357	0.0965	1.044	0.0965	1.1577	0.0000	0.0000
168.8	0.064436	0.0967	1.044	0.0967	1.1591	0.0000	0.0000
169	0.064515	0.0968	1.044	0.0968	1.1606	0.0000	0.0000
169.2	0.064595	0.0969	1.044	0.0969	1.1620	0.0000	0.0000
169.4	0.064674	0.0970	1.044	0.0970	1.1634	0.0000	0.0000
169.6	0.064753	0.0971	1.044	0.0971	1.1648	0.0000	0.0000
169.8	0.064833	0.0972	1.044	0.0972	1.1663	0.0000	0.0000
170	0.064912	0.0974	1.044	0.0974	1.1677	0.0000	0.0000
170.2	0.064991	0.0975	1.044	0.0975	1.1691	0.0000	0.0000
170.4	0.065071	0.0976	1.044	0.0976	1.1706	0.0000	0.0000
170.6	0.06515	0.0977	1.044	0.0977	1.1720	0.0000	0.0000
170.8	0.06523	0.0978	1.044	0.0978	1.1734	0.0000	0.0000
171	0.065309	0.0980	1.044	0.0980	1.1748	0.0000	0.0000
171.2	0.065388	0.0981	1.044	0.0981	1.1763	0.0000	0.0000
171.4	0.065468	0.0982	1.044	0.0982	1.1777	0.0000	0.0000
171.6	0.065547	0.0983	1.044	0.0983	1.1791	0.0000	0.0000
171.8	0.065627	0.0984	1.044	0.0984	1.1806	0.0000	0.0000
172	0.065706	0.0986	1.044	0.0986	1.1820	0.0000	0.0000
172.2	0.065785	0.0987	1.044	0.0987	1.1834	0.0000	0.0000
172.4	0.065865	0.0988	1.044	0.0988	1.1849	0.0000	0.0000
172.6	0.065944	0.0989	1.044	0.0989	1.1863	0.0000	0.0000
172.8	0.066024	0.0990	1.044	0.0990	1.1877	0.0000	0.0000
173	0.066103	0.0992	1.044	0.0992	1.1891	0.0000	0.0000
173.2	0.066183	0.0993	1.044	0.0993	1.1906	0.0000	0.0000
173.4	0.066262	0.0994	1.044	0.0994	1.1920	0.0000	0.0000
173.6	0.066342	0.0995	1.044	0.0995	1.1934	0.0000	0.0000
173.8	0.066421	0.0996	1.044	0.0996	1.1949	0.0000	0.0000
174	0.066501	0.0998	1.044	0.0998	1.1963	0.0000	0.0000
174.2	0.06658	0.0999	1.044	0.0999	1.1977	0.0000	0.0000
174.4	0.06666	0.1000	1.044	0.1000	1.1992	0.0000	0.0000
174.6	0.066739	0.1001	1.044	0.1001	1.2006	0.0000	0.0000
174.8	0.066819	0.1002	1.044	0.1002	1.2020	0.0000	0.0000
175	0.066898	0.1003	1.044	0.1003	1.2035	0.0000	0.0000
175.2	0.066978	0.1005	1.044	0.1005	1.2049	0.0000	0.0000
175.4	0.067057	0.1006	1.044	0.1006	1.2063	0.0000	0.0000
175.6	0.067137	0.1007	1.044	0.1007	1.2077	0.0000	0.0000
175.8	0.067216	0.1008	1.044	0.1008	1.2092	0.0000	0.0000
176	0.067296	0.1009	1.044	0.1009	1.2106	0.0000	0.0000
176.2	0.067376	0.1011	1.044	0.1011	1.2120	0.0000	0.0000
176.4	0.067455	0.1012	1.044	0.1012	1.2135	0.0000	0.0000
176.6	0.067535	0.1013	1.044	0.1013	1.2149	0.0000	0.0000
176.8	0.067614	0.1014	1.044	0.1014	1.2163	0.0000	0.0000
177	0.067694	0.1015	1.044	0.1015	1.2178	0.0000	0.0000

177.2	0.067774	0.1017	1.044	0.1017	1.2192	0.0000	0.0000
177.4	0.067853	0.1018	1.044	0.1018	1.2206	0.0000	0.0000
177.6	0.067933	0.1019	1.044	0.1019	1.2221	0.0000	0.0000
177.8	0.068012	0.1020	1.044	0.1020	1.2235	0.0000	0.0000
178	0.068092	0.1021	1.044	0.1021	1.2249	0.0000	0.0000
178.2	0.068172	0.1023	1.044	0.1023	1.2264	0.0000	0.0000
178.4	0.068251	0.1024	1.044	0.1024	1.2278	0.0000	0.0000
178.6	0.068331	0.1025	1.044	0.1025	1.2292	0.0000	0.0000
178.8	0.068411	0.1026	1.044	0.1026	1.2307	0.0000	0.0000
179	0.06849	0.1027	1.044	0.1027	1.2321	0.0000	0.0000
179.2	0.06857	0.1029	1.044	0.1029	1.2335	0.0000	0.0000
179.4	0.06865	0.1030	1.044	0.1030	1.2350	0.0000	0.0000
179.6	0.06873	0.1031	1.044	0.1031	1.2364	0.0000	0.0000
179.8	0.068809	0.1032	1.044	0.1032	1.2379	0.0000	0.0000
180	0.068889	0.1033	1.044	0.1033	1.2393	0.0000	0.0000
180.2	0.068969	0.1035	1.044	0.1035	1.2407	0.0000	0.0000
180.4	0.069049	0.1036	1.044	0.1036	1.2422	0.0000	0.0000
180.6	0.069128	0.1037	1.044	0.1037	1.2436	0.0000	0.0000
180.8	0.069208	0.1038	1.044	0.1038	1.2450	0.0000	0.0000
181	0.069288	0.1039	1.044	0.1039	1.2465	0.0000	0.0000
181.2	0.069368	0.1041	1.044	0.1041	1.2479	0.0000	0.0000
181.4	0.069447	0.1042	1.044	0.1042	1.2493	0.0000	0.0000
181.6	0.069527	0.1043	1.044	0.1043	1.2508	0.0000	0.0000
181.8	0.069607	0.1044	1.044	0.1044	1.2522	0.0000	0.0000
182	0.069687	0.1045	1.044	0.1045	1.2536	0.0000	0.0000
182.2	0.069767	0.1046	1.044	0.1046	1.2551	0.0000	0.0000
182.4	0.069846	0.1048	1.044	0.1048	1.2565	0.0000	0.0000
182.6	0.069926	0.1049	1.044	0.1049	1.2580	0.0000	0.0000
182.8	0.070006	0.1050	1.044	0.1050	1.2594	0.0000	0.0000
183	0.070086	0.1051	1.044	0.1051	1.2608	0.0000	0.0000
183.2	0.070166	0.1052	1.044	0.1052	1.2623	0.0000	0.0000
183.4	0.070246	0.1054	1.044	0.1054	1.2637	0.0000	0.0000
183.6	0.070325	0.1055	1.044	0.1055	1.2651	0.0000	0.0000
183.8	0.070405	0.1056	1.044	0.1056	1.2666	0.0000	0.0000
184	0.070485	0.1057	1.044	0.1057	1.2680	0.0000	0.0000
184.2	0.070565	0.1058	1.044	0.1058	1.2695	0.0000	0.0000
184.4	0.070645	0.1060	1.044	0.1060	1.2709	0.0000	0.0000
184.6	0.070725	0.1061	1.044	0.1061	1.2723	0.0000	0.0000
184.8	0.070805	0.1062	1.044	0.1062	1.2738	0.0000	0.0000
185	0.070885	0.1063	1.044	0.1063	1.2752	0.0000	0.0000
185.2	0.070965	0.1064	1.044	0.1064	1.2766	0.0000	0.0000
185.4	0.071045	0.1066	1.044	0.1066	1.2781	0.0000	0.0000
185.6	0.071125	0.1067	1.044	0.1067	1.2795	0.0000	0.0000
185.8	0.071204	0.1068	1.044	0.1068	1.2810	0.0000	0.0000
186	0.071284	0.1069	1.044	0.1069	1.2824	0.0000	0.0000
186.2	0.071364	0.1070	1.044	0.1070	1.2838	0.0000	0.0000
186.4	0.071444	0.1072	1.044	0.1072	1.2853	0.0000	0.0000

186.6	0.071524	0.1073	1.044	0.1073	1.2867	0.0000	0.0000
186.8	0.071604	0.1074	1.044	0.1074	1.2882	0.0000	0.0000
187	0.071684	0.1075	1.044	0.1075	1.2896	0.0000	0.0000
187.2	0.071764	0.1076	1.044	0.1076	1.2910	0.0000	0.0000
187.4	0.071844	0.1078	1.044	0.1078	1.2925	0.0000	0.0000
187.6	0.071924	0.1079	1.044	0.1079	1.2939	0.0000	0.0000
187.8	0.072004	0.1080	1.044	0.1080	1.2954	0.0000	0.0000
188	0.072084	0.1081	1.044	0.1081	1.2968	0.0000	0.0000
188.2	0.072164	0.1082	1.044	0.1082	1.2982	0.0000	0.0000
188.4	0.072245	0.1084	1.044	0.1084	1.2997	0.0000	0.0000
188.6	0.072325	0.1085	1.044	0.1085	1.3011	0.0000	0.0000
188.8	0.072405	0.1086	1.044	0.1086	1.3026	0.0000	0.0000
189	0.072485	0.1087	1.044	0.1087	1.3040	0.0000	0.0000
189.2	0.072565	0.1088	1.044	0.1088	1.3054	0.0000	0.0000
189.4	0.072645	0.1090	1.044	0.1090	1.3069	0.0000	0.0000
189.6	0.072725	0.1091	1.044	0.1091	1.3083	0.0000	0.0000
189.8	0.072805	0.1092	1.044	0.1092	1.3098	0.0000	0.0000
190	0.072885	0.1093	1.044	0.1093	1.3112	0.0000	0.0000
190.2	0.072965	0.1094	1.044	0.1094	1.3127	0.0000	0.0000
190.4	0.073045	0.1096	1.044	0.1096	1.3141	0.0000	0.0000
190.6	0.073126	0.1097	1.044	0.1097	1.3155	0.0000	0.0000
190.8	0.073206	0.1098	1.044	0.1098	1.3170	0.0000	0.0000
191	0.073286	0.1099	1.044	0.1099	1.3184	0.0000	0.0000
191.2	0.073366	0.1100	1.044	0.1100	1.3199	0.0000	0.0000
191.4	0.073446	0.1102	1.044	0.1102	1.3213	0.0000	0.0000
191.6	0.073526	0.1103	1.044	0.1103	1.3228	0.0000	0.0000
191.8	0.073607	0.1104	1.044	0.1104	1.3242	0.0000	0.0000
192	0.073687	0.1105	1.044	0.1105	1.3256	0.0000	0.0000
192.2	0.073767	0.1107	1.044	0.1107	1.3271	0.0000	0.0000
192.4	0.073847	0.1108	1.044	0.1108	1.3285	0.0000	0.0000
192.6	0.073927	0.1109	1.044	0.1109	1.3300	0.0000	0.0000
192.8	0.074008	0.1110	1.044	0.1110	1.3314	0.0000	0.0000
193	0.074088	0.1111	1.044	0.1111	1.3329	0.0000	0.0000
193.2	0.074168	0.1113	1.044	0.1113	1.3343	0.0000	0.0000
193.4	0.074248	0.1114	1.044	0.1114	1.3357	0.0000	0.0000
193.6	0.074329	0.1115	1.044	0.1115	1.3372	0.0000	0.0000
193.8	0.074409	0.1116	1.044	0.1116	1.3386	0.0000	0.0000
194	0.074489	0.1117	1.044	0.1117	1.3401	0.0000	0.0000
194.2	0.074569	0.1119	1.044	0.1119	1.3415	0.0000	0.0000
194.4	0.07465	0.1120	1.044	0.1120	1.3430	0.0000	0.0000
194.6	0.07473	0.1121	1.044	0.1121	1.3444	0.0000	0.0000
194.8	0.07481	0.1122	1.044	0.1122	1.3459	0.0000	0.0000
195	0.074891	0.1123	1.044	0.1123	1.3473	0.0000	0.0000
195.2	0.074971	0.1125	1.044	0.1125	1.3488	0.0000	0.0000
195.4	0.075051	0.1126	1.044	0.1126	1.3502	0.0000	0.0000
195.6	0.075132	0.1127	1.044	0.1127	1.3516	0.0000	0.0000
195.8	0.075212	0.1128	1.044	0.1128	1.3531	0.0000	0.0000

196	0.075292	0.1129	1.044	0.1129	1.3545	0.0000	0.0000
196.2	0.075373	0.1131	1.044	0.1131	1.3560	0.0000	0.0000
196.4	0.075453	0.1132	1.044	0.1132	1.3574	0.0000	0.0000
196.6	0.075533	0.1133	1.044	0.1133	1.3589	0.0000	0.0000
196.8	0.075614	0.1134	1.044	0.1134	1.3603	0.0000	0.0000
197	0.075694	0.1135	1.044	0.1135	1.3618	0.0000	0.0000
197.2	0.075775	0.1137	1.044	0.1137	1.3632	0.0000	0.0000
197.4	0.075855	0.1138	1.044	0.1138	1.3647	0.0000	0.0000
197.6	0.075935	0.1139	1.044	0.1139	1.3661	0.0000	0.0000
197.8	0.076016	0.1140	1.044	0.1140	1.3676	0.0000	0.0000
198	0.076096	0.1141	1.044	0.1141	1.3690	0.0000	0.0000
198.2	0.076177	0.1143	1.044	0.1143	1.3705	0.0000	0.0000
198.4	0.076257	0.1144	1.044	0.1144	1.3719	0.0000	0.0000
198.6	0.076338	0.1145	1.044	0.1145	1.3734	0.0000	0.0000
198.8	0.076418	0.1146	1.044	0.1146	1.3748	0.0000	0.0000
199	0.076499	0.1147	1.044	0.1147	1.3762	0.0000	0.0000
199.2	0.076579	0.1149	1.044	0.1149	1.3777	0.0000	0.0000
199.4	0.07666	0.1150	1.044	0.1150	1.3791	0.0000	0.0000
199.6	0.07674	0.1151	1.044	0.1151	1.3806	0.0000	0.0000
199.8	0.07682	0.1152	1.044	0.1152	1.3820	0.0000	0.0000
200	0.076901	0.1154	1.044	0.1154	1.3835	0.0000	0.0000
200.2	0.076982	0.1155	1.044	0.1155	1.3849	0.0000	0.0000
200.4	0.077062	0.1156	1.044	0.1156	1.3864	0.0000	0.0000
200.6	0.077143	0.1157	1.044	0.1157	1.3878	0.0000	0.0000
200.8	0.077223	0.1158	1.044	0.1158	1.3893	0.0000	0.0000
201	0.077304	0.1160	1.044	0.1160	1.3907	0.0000	0.0000
201.2	0.077384	0.1161	1.044	0.1161	1.3922	0.0000	0.0000
201.4	0.077465	0.1162	1.044	0.1162	1.3936	0.0000	0.0000
201.6	0.077545	0.1163	1.044	0.1163	1.3951	0.0000	0.0000
201.8	0.077626	0.1164	1.044	0.1164	1.3965	0.0000	0.0000
202	0.077707	0.1166	1.044	0.1166	1.3980	0.0000	0.0000
202.2	0.077787	0.1167	1.044	0.1167	1.3994	0.0000	0.0000
202.4	0.077868	0.1168	1.044	0.1168	1.4009	0.0000	0.0000
202.6	0.077948	0.1169	1.044	0.1169	1.4023	0.0000	0.0000
202.8	0.078029	0.1170	1.044	0.1170	1.4038	0.0000	0.0000
203	0.07811	0.1172	1.044	0.1172	1.4052	0.0000	0.0000
203.2	0.07819	0.1173	1.044	0.1173	1.4067	0.0000	0.0000
203.4	0.078271	0.1174	1.044	0.1174	1.4082	0.0000	0.0000
203.6	0.078352	0.1175	1.044	0.1175	1.4096	0.0000	0.0000
203.8	0.078432	0.1176	1.044	0.1176	1.4111	0.0000	0.0000
204	0.078513	0.1178	1.044	0.1178	1.4125	0.0000	0.0000
204.2	0.078594	0.1179	1.044	0.1179	1.4140	0.0000	0.0000
204.4	0.078674	0.1180	1.044	0.1180	1.4154	0.0000	0.0000
204.6	0.078755	0.1181	1.044	0.1181	1.4169	0.0000	0.0000
204.8	0.078836	0.1183	1.044	0.1183	1.4183	0.0000	0.0000
205	0.078916	0.1184	1.044	0.1184	1.4198	0.0000	0.0000
205.2	0.078997	0.1185	1.044	0.1185	1.4212	0.0000	0.0000

205.4	0.079078	0.1186	1.044	0.1186	1.4227	0.0000	0.0000
205.6	0.079159	0.1187	1.044	0.1187	1.4241	0.0000	0.0000
205.8	0.079239	0.1189	1.044	0.1189	1.4256	0.0000	0.0000
206	0.07932	0.1190	1.044	0.1190	1.4270	0.0000	0.0000
206.2	0.079401	0.1191	1.044	0.1191	1.4285	0.0000	0.0000
206.4	0.079482	0.1192	1.044	0.1192	1.4299	0.0000	0.0000
206.6	0.079562	0.1193	1.044	0.1193	1.4314	0.0000	0.0000
206.8	0.079643	0.1195	1.044	0.1195	1.4328	0.0000	0.0000
207	0.079724	0.1196	1.044	0.1196	1.4343	0.0000	0.0000
207.2	0.079805	0.1197	1.044	0.1197	1.4358	0.0000	0.0000
207.4	0.079885	0.1198	1.044	0.1198	1.4372	0.0000	0.0000
207.6	0.079966	0.1199	1.044	0.1199	1.4387	0.0000	0.0000
207.8	0.080047	0.1201	1.044	0.1201	1.4401	0.0000	0.0000
208	0.080128	0.1202	1.044	0.1202	1.4416	0.0000	0.0000
208.2	0.080209	0.1203	1.044	0.1203	1.4430	0.0000	0.0000
208.4	0.08029	0.1204	1.044	0.1204	1.4445	0.0000	0.0000
208.6	0.08037	0.1206	1.044	0.1206	1.4459	0.0000	0.0000
208.8	0.080451	0.1207	1.044	0.1207	1.4474	0.0000	0.0000
209	0.080532	0.1208	1.044	0.1208	1.4489	0.0000	0.0000
209.2	0.080613	0.1209	1.044	0.1209	1.4503	0.0000	0.0000
209.4	0.080694	0.1210	1.044	0.1210	1.4518	0.0000	0.0000
209.6	0.080775	0.1212	1.044	0.1212	1.4532	0.0000	0.0000
209.8	0.080856	0.1213	1.044	0.1213	1.4547	0.0000	0.0000
210	0.080937	0.1214	1.044	0.1214	1.4561	0.0000	0.0000
210.2	0.081018	0.1215	1.044	0.1215	1.4576	0.0000	0.0000
210.4	0.081098	0.1216	1.044	0.1216	1.4590	0.0000	0.0000
210.6	0.081179	0.1218	1.044	0.1218	1.4605	0.0000	0.0000
210.8	0.08126	0.1219	1.044	0.1219	1.4620	0.0000	0.0000
211	0.081341	0.1220	1.044	0.1220	1.4634	0.0000	0.0000
211.2	0.081422	0.1221	1.044	0.1221	1.4649	0.0000	0.0000
211.4	0.081503	0.1223	1.044	0.1223	1.4663	0.0000	0.0000
211.6	0.081584	0.1224	1.044	0.1224	1.4678	0.0000	0.0000
211.8	0.081665	0.1225	1.044	0.1225	1.4692	0.0000	0.0000
212	0.081746	0.1226	1.044	0.1226	1.4707	0.0000	0.0000
212.2	0.081827	0.1227	1.044	0.1227	1.4722	0.0000	0.0000
212.4	0.081908	0.1229	1.044	0.1229	1.4736	0.0000	0.0000
212.6	0.081989	0.1230	1.044	0.1230	1.4751	0.0000	0.0000
212.8	0.08207	0.1231	1.044	0.1231	1.4765	0.0000	0.0000
213	0.082151	0.1232	1.044	0.1232	1.4780	0.0000	0.0000
213.2	0.082232	0.1233	1.044	0.1233	1.4795	0.0000	0.0000
213.4	0.082313	0.1235	1.044	0.1235	1.4809	0.0000	0.0000
213.6	0.082394	0.1236	1.044	0.1236	1.4824	0.0000	0.0000
213.8	0.082475	0.1237	1.044	0.1237	1.4838	0.0000	0.0000
214	0.082557	0.1238	1.044	0.1238	1.4853	0.0000	0.0000
214.2	0.082638	0.1240	1.044	0.1240	1.4867	0.0000	0.0000
214.4	0.082719	0.1241	1.044	0.1241	1.4882	0.0000	0.0000
214.6	0.0828	0.1242	1.044	0.1242	1.4897	0.0000	0.0000

214.8	0.082881	0.1243	1.044	0.1243	1.4911	0.0000	0.0000
215	0.082962	0.1244	1.044	0.1244	1.4926	0.0000	0.0000
215.2	0.083043	0.1246	1.044	0.1246	1.4940	0.0000	0.0000
215.4	0.083124	0.1247	1.044	0.1247	1.4955	0.0000	0.0000
215.6	0.083205	0.1248	1.044	0.1248	1.4970	0.0000	0.0000
215.8	0.083287	0.1249	1.044	0.1249	1.4984	0.0000	0.0000
216	0.083368	0.1251	1.044	0.1251	1.4999	0.0000	0.0000
216.2	0.083449	0.1252	1.044	0.1252	1.5013	0.0000	0.0000
216.4	0.08353	0.1253	1.044	0.1253	1.5028	0.0000	0.0000
216.6	0.083611	0.1254	1.044	0.1254	1.5043	0.0000	0.0000
216.8	0.083692	0.1255	1.044	0.1255	1.5057	0.0000	0.0000
217	0.083774	0.1257	1.044	0.1257	1.5072	0.0000	0.0000
217.2	0.083855	0.1258	1.044	0.1258	1.5087	0.0000	0.0000
217.4	0.083936	0.1259	1.044	0.1259	1.5101	0.0000	0.0000
217.6	0.084017	0.1260	1.044	0.1260	1.5116	0.0000	0.0000
217.8	0.084098	0.1261	1.044	0.1261	1.5130	0.0000	0.0000
218	0.08418	0.1263	1.044	0.1263	1.5145	0.0000	0.0000
218.2	0.084261	0.1264	1.044	0.1264	1.5160	0.0000	0.0000
218.4	0.084342	0.1265	1.044	0.1265	1.5174	0.0000	0.0000
218.6	0.084423	0.1266	1.044	0.1266	1.5189	0.0000	0.0000
218.8	0.084505	0.1268	1.044	0.1268	1.5204	0.0000	0.0000
219	0.084586	0.1269	1.044	0.1269	1.5218	0.0000	0.0000
219.2	0.084667	0.1270	1.044	0.1270	1.5233	0.0000	0.0000
219.4	0.084749	0.1271	1.044	0.1271	1.5247	0.0000	0.0000
219.6	0.08483	0.1272	1.044	0.1272	1.5262	0.0000	0.0000
219.8	0.084911	0.1274	1.044	0.1274	1.5277	0.0000	0.0000
220	0.084992	0.1275	1.044	0.1275	1.5291	0.0000	0.0000
220.2	0.085074	0.1276	1.044	0.1276	1.5306	0.0000	0.0000
220.4	0.085155	0.1277	1.044	0.1277	1.5321	0.0000	0.0000
220.6	0.085236	0.1279	1.044	0.1279	1.5335	0.0000	0.0000
220.8	0.085318	0.1280	1.044	0.1280	1.5350	0.0000	0.0000
221	0.085399	0.1281	1.044	0.1281	1.5365	0.0000	0.0000
221.2	0.085481	0.1282	1.044	0.1282	1.5379	0.0000	0.0000
221.4	0.085562	0.1283	1.044	0.1283	1.5394	0.0000	0.0000
221.6	0.085643	0.1285	1.044	0.1285	1.5408	0.0000	0.0000
221.8	0.085725	0.1286	1.044	0.1286	1.5423	0.0000	0.0000
222	0.085806	0.1287	1.044	0.1287	1.5438	0.0000	0.0000
222.2	0.085888	0.1288	1.044	0.1288	1.5452	0.0000	0.0000
222.4	0.085969	0.1290	1.044	0.1290	1.5467	0.0000	0.0000
222.6	0.08605	0.1291	1.044	0.1291	1.5482	0.0000	0.0000
222.8	0.086132	0.1292	1.044	0.1292	1.5496	0.0000	0.0000
223	0.086213	0.1293	1.044	0.1293	1.5511	0.0000	0.0000
223.2	0.086295	0.1294	1.044	0.1294	1.5526	0.0000	0.0000
223.4	0.086376	0.1296	1.044	0.1296	1.5540	0.0000	0.0000
223.6	0.086458	0.1297	1.044	0.1297	1.5555	0.0000	0.0000
223.8	0.086539	0.1298	1.044	0.1298	1.5570	0.0000	0.0000
224	0.086621	0.1299	1.044	0.1299	1.5584	0.0000	0.0000

224.2	0.086702	0.1301	1.044	0.1301	1.5599	0.0000	0.0000
224.4	0.086784	0.1302	1.044	0.1302	1.5614	0.0000	0.0000
224.6	0.086865	0.1303	1.044	0.1303	1.5628	0.0000	0.0000
224.8	0.086947	0.1304	1.044	0.1304	1.5643	0.0000	0.0000
225	0.087028	0.1305	1.044	0.1305	1.5658	0.0000	0.0000
225.2	0.08711	0.1307	1.044	0.1307	1.5672	0.0000	0.0000
225.4	0.087191	0.1308	1.044	0.1308	1.5687	0.0000	0.0000
225.6	0.087273	0.1309	1.044	0.1309	1.5702	0.0000	0.0000
225.8	0.087354	0.1310	1.044	0.1310	1.5716	0.0000	0.0000
226	0.087436	0.1312	1.044	0.1312	1.5731	0.0000	0.0000
226.2	0.087517	0.1313	1.044	0.1313	1.5746	0.0000	0.0000
226.4	0.087599	0.1314	1.044	0.1314	1.5760	0.0000	0.0000
226.6	0.087681	0.1315	1.044	0.1315	1.5775	0.0000	0.0000
226.8	0.087762	0.1316	1.044	0.1316	1.5790	0.0000	0.0000
227	0.087844	0.1318	1.044	0.1318	1.5805	0.0000	0.0000
227.2	0.087925	0.1319	1.044	0.1319	1.5819	0.0000	0.0000
227.4	0.088007	0.1320	1.044	0.1320	1.5834	0.0000	0.0000
227.6	0.088089	0.1321	1.044	0.1321	1.5849	0.0000	0.0000
227.8	0.08817	0.1323	1.044	0.1323	1.5863	0.0000	0.0000
228	0.088252	0.1324	1.044	0.1324	1.5878	0.0000	0.0000
228.2	0.088334	0.1325	1.044	0.1325	1.5893	0.0000	0.0000
228.4	0.088415	0.1326	1.044	0.1326	1.5907	0.0000	0.0000
228.6	0.088497	0.1327	1.044	0.1327	1.5922	0.0000	0.0000
228.8	0.088579	0.1329	1.044	0.1329	1.5937	0.0000	0.0000
229	0.08866	0.1330	1.044	0.1330	1.5951	0.0000	0.0000
229.2	0.088742	0.1331	1.044	0.1331	1.5966	0.0000	0.0000
229.4	0.088824	0.1332	1.044	0.1332	1.5981	0.0000	0.0000
229.6	0.088905	0.1334	1.044	0.1334	1.5996	0.0000	0.0000
229.8	0.088987	0.1335	1.044	0.1335	1.6010	0.0000	0.0000
230	0.089069	0.1336	1.044	0.1336	1.6025	0.0000	0.0000
230.2	0.089151	0.1337	1.044	0.1337	1.6040	0.0000	0.0000
230.4	0.089232	0.1338	1.044	0.1338	1.6054	0.0000	0.0000
230.6	0.089314	0.1340	1.044	0.1340	1.6069	0.0000	0.0000
230.8	0.089396	0.1341	1.044	0.1341	1.6084	0.0000	0.0000
231	0.089478	0.1342	1.044	0.1342	1.6099	0.0000	0.0000
231.2	0.089559	0.1343	1.044	0.1343	1.6113	0.0000	0.0000
231.4	0.089641	0.1345	1.044	0.1345	1.6128	0.0000	0.0000
231.6	0.089723	0.1346	1.044	0.1346	1.6143	0.0000	0.0000
231.8	0.089805	0.1347	1.044	0.1347	1.6157	0.0000	0.0000
232	0.089887	0.1348	1.044	0.1348	1.6172	0.0000	0.0000
232.2	0.089968	0.1350	1.044	0.1350	1.6187	0.0000	0.0000
232.4	0.09005	0.1351	1.044	0.1351	1.6202	0.0000	0.0000
232.6	0.090132	0.1352	1.044	0.1352	1.6216	0.0000	0.0000
232.8	0.090214	0.1353	1.044	0.1353	1.6231	0.0000	0.0000
233	0.090296	0.1354	1.044	0.1354	1.6246	0.0000	0.0000
233.2	0.090378	0.1356	1.044	0.1356	1.6261	0.0000	0.0000
233.4	0.09046	0.1357	1.044	0.1357	1.6275	0.0000	0.0000

233.6	0.090541	0.1358	1.044	0.1358	1.6290	0.0000	0.0000
233.8	0.090623	0.1359	1.044	0.1359	1.6305	0.0000	0.0000
234	0.090705	0.1361	1.044	0.1361	1.6320	0.0000	0.0000
234.2	0.090787	0.1362	1.044	0.1362	1.6334	0.0000	0.0000
234.4	0.090869	0.1363	1.044	0.1363	1.6349	0.0000	0.0000
234.6	0.090951	0.1364	1.044	0.1364	1.6364	0.0000	0.0000
234.8	0.091033	0.1365	1.044	0.1365	1.6379	0.0000	0.0000
235	0.091115	0.1367	1.044	0.1367	1.6393	0.0000	0.0000
235.2	0.091197	0.1368	1.044	0.1368	1.6408	0.0000	0.0000
235.4	0.091279	0.1369	1.044	0.1369	1.6423	0.0000	0.0000
235.6	0.091361	0.1370	1.044	0.1370	1.6438	0.0000	0.0000
235.8	0.091443	0.1372	1.044	0.1372	1.6452	0.0000	0.0000
236	0.091525	0.1373	1.044	0.1373	1.6467	0.0000	0.0000
236.2	0.091607	0.1374	1.044	0.1374	1.6482	0.0000	0.0000
236.4	0.091689	0.1375	1.044	0.1375	1.6497	0.0000	0.0000
236.6	0.091771	0.1377	1.044	0.1377	1.6511	0.0000	0.0000
236.8	0.091853	0.1378	1.044	0.1378	1.6526	0.0000	0.0000
237	0.091935	0.1379	1.044	0.1379	1.6541	0.0000	0.0000
237.2	0.092017	0.1380	1.044	0.1380	1.6556	0.0000	0.0000
237.4	0.092099	0.1381	1.044	0.1381	1.6570	0.0000	0.0000
237.6	0.092181	0.1383	1.044	0.1383	1.6585	0.0000	0.0000
237.8	0.092263	0.1384	1.044	0.1384	1.6600	0.0000	0.0000
238	0.092345	0.1385	1.044	0.1385	1.6615	0.0000	0.0000
238.2	0.092427	0.1386	1.044	0.1386	1.6629	0.0000	0.0000
238.4	0.092509	0.1388	1.044	0.1388	1.6644	0.0000	0.0000
238.6	0.092591	0.1389	1.044	0.1389	1.6659	0.0000	0.0000
238.8	0.092673	0.1390	1.044	0.1390	1.6674	0.0000	0.0000
239	0.092755	0.1391	1.044	0.1391	1.6689	0.0000	0.0000
239.2	0.092837	0.1393	1.044	0.1393	1.6703	0.0000	0.0000
239.4	0.09292	0.1394	1.044	0.1394	1.6718	0.0000	0.0000
239.6	0.093002	0.1395	1.044	0.1395	1.6733	0.0000	0.0000
239.8	0.093084	0.1396	1.044	0.1396	1.6748	0.0000	0.0000
240	0.093166	0.1397	1.044	0.1397	1.6762	0.0000	0.0000
240.2	0.093248	0.1399	1.044	0.1399	1.6777	0.0000	0.0000
240.4	0.09333	0.1400	1.044	0.1400	1.6792	0.0000	0.0000
240.6	0.093412	0.1401	1.044	0.1401	1.6807	0.0000	0.0000
240.8	0.093495	0.1402	1.044	0.1402	1.6822	0.0000	0.0000
241	0.093577	0.1404	1.044	0.1404	1.6836	0.0000	0.0000
241.2	0.093659	0.1405	1.044	0.1405	1.6851	0.0000	0.0000
241.4	0.093741	0.1406	1.044	0.1406	1.6866	0.0000	0.0000
241.6	0.093823	0.1407	1.044	0.1407	1.6881	0.0000	0.0000
241.8	0.093906	0.1409	1.044	0.1409	1.6896	0.0000	0.0000
242	0.093988	0.1410	1.044	0.1410	1.6910	0.0000	0.0000
242.2	0.09407	0.1411	1.044	0.1411	1.6925	0.0000	0.0000
242.4	0.094152	0.1412	1.044	0.1412	1.6940	0.0000	0.0000
242.6	0.094235	0.1414	1.044	0.1414	1.6955	0.0000	0.0000
242.8	0.094317	0.1415	1.044	0.1415	1.6970	0.0000	0.0000

243	0.094399	0.1416	1.044	0.1416	1.6984	0.0000	0.0000
243.2	0.094482	0.1417	1.044	0.1417	1.6999	0.0000	0.0000
243.4	0.094564	0.1418	1.044	0.1418	1.7014	0.0000	0.0000
243.6	0.094646	0.1420	1.044	0.1420	1.7029	0.0000	0.0000
243.8	0.094728	0.1421	1.044	0.1421	1.7044	0.0000	0.0000
244	0.094811	0.1422	1.044	0.1422	1.7059	0.0000	0.0000
244.2	0.094893	0.1423	1.044	0.1423	1.7073	0.0000	0.0000
244.4	0.094975	0.1425	1.044	0.1425	1.7088	0.0000	0.0000
244.6	0.095058	0.1426	1.044	0.1426	1.7103	0.0000	0.0000
244.8	0.09514	0.1427	1.044	0.1427	1.7118	0.0000	0.0000
245	0.095222	0.1428	1.044	0.1428	1.7133	0.0000	0.0000
245.2	0.095305	0.1430	1.044	0.1430	1.7147	0.0000	0.0000
245.4	0.095387	0.1431	1.044	0.1431	1.7162	0.0000	0.0000
245.6	0.09547	0.1432	1.044	0.1432	1.7177	0.0000	0.0000
245.8	0.095552	0.1433	1.044	0.1433	1.7192	0.0000	0.0000
246	0.095634	0.1435	1.044	0.1435	1.7207	0.0000	0.0000
246.2	0.095717	0.1436	1.044	0.1436	1.7222	0.0000	0.0000
246.4	0.095799	0.1437	1.044	0.1437	1.7236	0.0000	0.0000
246.6	0.095882	0.1438	1.044	0.1438	1.7251	0.0000	0.0000
246.8	0.095964	0.1439	1.044	0.1439	1.7266	0.0000	0.0000
247	0.096047	0.1441	1.044	0.1441	1.7281	0.0000	0.0000
247.2	0.096129	0.1442	1.044	0.1442	1.7296	0.0000	0.0000
247.4	0.096212	0.1443	1.044	0.1443	1.7311	0.0000	0.0000
247.6	0.096294	0.1444	1.044	0.1444	1.7325	0.0000	0.0000
247.8	0.096376	0.1446	1.044	0.1446	1.7340	0.0000	0.0000
248	0.096459	0.1447	1.044	0.1447	1.7355	0.0000	0.0000
248.2	0.096541	0.1448	1.044	0.1448	1.7370	0.0000	0.0000
248.4	0.096624	0.1449	1.044	0.1449	1.7385	0.0000	0.0000
248.6	0.096706	0.1451	1.044	0.1451	1.7400	0.0000	0.0000
248.8	0.096789	0.1452	1.044	0.1452	1.7415	0.0000	0.0000
249	0.096872	0.1453	1.044	0.1453	1.7429	0.0000	0.0000
249.2	0.096954	0.1454	1.044	0.1454	1.7444	0.0000	0.0000
249.4	0.097037	0.1456	1.044	0.1456	1.7459	0.0000	0.0000
249.6	0.097119	0.1457	1.044	0.1457	1.7474	0.0000	0.0000
249.8	0.097202	0.1458	1.044	0.1458	1.7489	0.0000	0.0000
250	0.097284	0.1459	1.044	0.1459	1.7504	0.0000	0.0000
250.2	0.097367	0.1461	1.044	0.1461	1.7519	0.0000	0.0000
250.4	0.09745	0.1462	1.044	0.1462	1.7533	0.0000	0.0000
250.6	0.097532	0.1463	1.044	0.1463	1.7548	0.0000	0.0000
250.8	0.097615	0.1464	1.044	0.1464	1.7563	0.0000	0.0000
251	0.097697	0.1465	1.044	0.1465	1.7578	0.0000	0.0000
251.2	0.09778	0.1467	1.044	0.1467	1.7593	0.0000	0.0000
251.4	0.097863	0.1468	1.044	0.1468	1.7608	0.0000	0.0000
251.6	0.097945	0.1469	1.044	0.1469	1.7623	0.0000	0.0000
251.8	0.098028	0.1470	1.044	0.1470	1.7638	0.0000	0.0000
252	0.098111	0.1472	1.044	0.1472	1.7652	0.0000	0.0000
252.2	0.098193	0.1473	1.044	0.1473	1.7667	0.0000	0.0000

252.4	0.098276	0.1474	1.044	0.1474	1.7682	0.0000	0.0000
252.6	0.098359	0.1475	1.044	0.1475	1.7697	0.0000	0.0000
252.8	0.098441	0.1477	1.044	0.1477	1.7712	0.0000	0.0000
253	0.098524	0.1478	1.044	0.1478	1.7727	0.0000	0.0000
253.2	0.098607	0.1479	1.044	0.1479	1.7742	0.0000	0.0000
253.4	0.098689	0.1480	1.044	0.1480	1.7757	0.0000	0.0000
253.6	0.098772	0.1482	1.044	0.1482	1.7772	0.0000	0.0000
253.8	0.098855	0.1483	1.044	0.1483	1.7786	0.0000	0.0000
254	0.098938	0.1484	1.044	0.1484	1.7801	0.0000	0.0000
254.2	0.09902	0.1485	1.044	0.1485	1.7816	0.0000	0.0000
254.4	0.099103	0.1487	1.044	0.1487	1.7831	0.0000	0.0000
254.6	0.099186	0.1488	1.044	0.1488	1.7846	0.0000	0.0000
254.8	0.099269	0.1489	1.044	0.1489	1.7861	0.0000	0.0000
255	0.099352	0.1490	1.044	0.1490	1.7876	0.0000	0.0000
255.2	0.099434	0.1492	1.044	0.1492	1.7891	0.0000	0.0000
255.4	0.099517	0.1493	1.044	0.1493	1.7906	0.0000	0.0000
255.6	0.0996	0.1494	1.044	0.1494	1.7921	0.0000	0.0000
255.8	0.099683	0.1495	1.044	0.1495	1.7935	0.0000	0.0000
256	0.099766	0.1496	1.044	0.1496	1.7950	0.0000	0.0000
256.2	0.099848	0.1498	1.044	0.1498	1.7965	0.0000	0.0000
256.4	0.099931	0.1499	1.044	0.1499	1.7980	0.0000	0.0000
256.6	0.100014	0.1500	1.044	0.1500	1.7995	0.0000	0.0000
256.8	0.100097	0.1501	1.044	0.1501	1.8010	0.0000	0.0000
257	0.10018	0.1503	1.044	0.1503	1.8025	0.0000	0.0000
257.2	0.100263	0.1504	1.044	0.1504	1.8040	0.0000	0.0000
257.4	0.100346	0.1505	1.044	0.1505	1.8055	0.0000	0.0000
257.6	0.100429	0.1506	1.044	0.1506	1.8070	0.0000	0.0000
257.8	0.100512	0.1508	1.044	0.1508	1.8085	0.0000	0.0000
258	0.100594	0.1509	1.044	0.1509	1.8100	0.0000	0.0000
258.2	0.100677	0.1510	1.044	0.1510	1.8114	0.0000	0.0000
258.4	0.10076	0.1511	1.044	0.1511	1.8129	0.0000	0.0000
258.6	0.100843	0.1513	1.044	0.1513	1.8144	0.0000	0.0000
258.8	0.100926	0.1514	1.044	0.1514	1.8159	0.0000	0.0000
259	0.101009	0.1515	1.044	0.1515	1.8174	0.0000	0.0000
259.2	0.101092	0.1516	1.044	0.1516	1.8189	0.0000	0.0000
259.4	0.101175	0.1518	1.044	0.1518	1.8204	0.0000	0.0000
259.6	0.101258	0.1519	1.044	0.1519	1.8219	0.0000	0.0000
259.8	0.101341	0.1520	1.044	0.1520	1.8234	0.0000	0.0000
260	0.101424	0.1521	1.044	0.1521	1.8249	0.0000	0.0000
260.2	0.101507	0.1523	1.044	0.1523	1.8264	0.0000	0.0000
260.4	0.10159	0.1524	1.044	0.1524	1.8279	0.0000	0.0000
260.6	0.101673	0.1525	1.044	0.1525	1.8294	0.0000	0.0000
260.8	0.101756	0.1526	1.044	0.1526	1.8309	0.0000	0.0000
261	0.101839	0.1528	1.044	0.1528	1.8324	0.0000	0.0000
261.2	0.101922	0.1529	1.044	0.1529	1.8339	0.0000	0.0000
261.4	0.102006	0.1530	1.044	0.1530	1.8354	0.0000	0.0000
261.6	0.102089	0.1531	1.044	0.1531	1.8368	0.0000	0.0000

261.8	0.102172	0.1533	1.044	0.1533	1.8383	0.0000	0.0000
262	0.102255	0.1534	1.044	0.1534	1.8398	0.0000	0.0000
262.2	0.102338	0.1535	1.044	0.1535	1.8413	0.0000	0.0000
262.4	0.102421	0.1536	1.044	0.1536	1.8428	0.0000	0.0000
262.6	0.102504	0.1538	1.044	0.1538	1.8443	0.0000	0.0000
262.8	0.102587	0.1539	1.044	0.1539	1.8458	0.0000	0.0000
263	0.10267	0.1540	1.044	0.1540	1.8473	0.0000	0.0000
263.2	0.102754	0.1541	1.044	0.1541	1.8488	0.0000	0.0000
263.4	0.102837	0.1543	1.044	0.1543	1.8503	0.0000	0.0000
263.6	0.10292	0.1544	1.044	0.1544	1.8518	0.0000	0.0000
263.8	0.103003	0.1545	1.044	0.1545	1.8533	0.0000	0.0000
264	0.103086	0.1546	1.044	0.1546	1.8548	0.0000	0.0000
264.2	0.103169	0.1548	1.044	0.1548	1.8563	0.0000	0.0000
264.4	0.103253	0.1549	1.044	0.1549	1.8578	0.0000	0.0000
264.6	0.103336	0.1550	1.044	0.1550	1.8593	0.0000	0.0000
264.8	0.103419	0.1551	1.044	0.1551	1.8608	0.0000	0.0000
265	0.103502	0.1553	1.044	0.1553	1.8623	0.0000	0.0000
265.2	0.103586	0.1554	1.044	0.1554	1.8638	0.0000	0.0000
265.4	0.103669	0.1555	1.044	0.1555	1.8653	0.0000	0.0000
265.6	0.103752	0.1556	1.044	0.1556	1.8668	0.0000	0.0000
265.8	0.103835	0.1558	1.044	0.1558	1.8683	0.0000	0.0000
266	0.103919	0.1559	1.044	0.1559	1.8698	0.0000	0.0000
266.2	0.104002	0.1560	1.044	0.1560	1.8713	0.0000	0.0000
266.4	0.104085	0.1561	1.044	0.1561	1.8728	0.0000	0.0000
266.6	0.104168	0.1563	1.044	0.1563	1.8743	0.0000	0.0000
266.8	0.104252	0.1564	1.044	0.1564	1.8758	0.0000	0.0000
267	0.104335	0.1565	1.044	0.1565	1.8773	0.0000	0.0000
267.2	0.104418	0.1566	1.044	0.1566	1.8788	0.0000	0.0000
267.4	0.104502	0.1568	1.044	0.1568	1.8803	0.0000	0.0000
267.6	0.104585	0.1569	1.044	0.1569	1.8818	0.0000	0.0000
267.8	0.104668	0.1570	1.044	0.1570	1.8833	0.0000	0.0000
268	0.104752	0.1571	1.044	0.1571	1.8848	0.0000	0.0000
268.2	0.104835	0.1573	1.044	0.1573	1.8863	0.0000	0.0000
268.4	0.104919	0.1574	1.044	0.1574	1.8878	0.0000	0.0000
268.6	0.105002	0.1575	1.044	0.1575	1.8893	0.0000	0.0000
268.8	0.105085	0.1576	1.044	0.1576	1.8908	0.0000	0.0000
269	0.105169	0.1578	1.044	0.1578	1.8923	0.0000	0.0000
269.2	0.105252	0.1579	1.044	0.1579	1.8938	0.0000	0.0000
269.4	0.105336	0.1580	1.044	0.1580	1.8953	0.0000	0.0000
269.6	0.105419	0.1581	1.044	0.1581	1.8968	0.0000	0.0000
269.8	0.105502	0.1583	1.044	0.1583	1.8983	0.0000	0.0000
270	0.105586	0.1584	1.044	0.1584	1.8998	0.0000	0.0000
270.2	0.105669	0.1585	1.044	0.1585	1.9013	0.0000	0.0000
270.4	0.105753	0.1586	1.044	0.1586	1.9028	0.0000	0.0000
270.6	0.105836	0.1588	1.044	0.1588	1.9043	0.0000	0.0000
270.8	0.10592	0.1589	1.044	0.1589	1.9058	0.0000	0.0000
271	0.106003	0.1590	1.044	0.1590	1.9073	0.0000	0.0000

271.2	0.106087	0.1591	1.044	0.1591	1.9088	0.0000	0.0000
271.4	0.10617	0.1593	1.044	0.1593	1.9103	0.0000	0.0000
271.6	0.106254	0.1594	1.044	0.1594	1.9118	0.0000	0.0000
271.8	0.106337	0.1595	1.044	0.1595	1.9133	0.0000	0.0000
272	0.106421	0.1596	1.044	0.1596	1.9148	0.0000	0.0000
272.2	0.106504	0.1598	1.044	0.1598	1.9163	0.0000	0.0000
272.4	0.106588	0.1599	1.044	0.1599	1.9178	0.0000	0.0000
272.6	0.106672	0.1600	1.044	0.1600	1.9193	0.0000	0.0000
272.8	0.106755	0.1601	1.044	0.1601	1.9208	0.0000	0.0000
273	0.106839	0.1603	1.044	0.1603	1.9223	0.0000	0.0000
273.2	0.106922	0.1604	1.044	0.1604	1.9238	0.0000	0.0000
273.4	0.107006	0.1605	1.044	0.1605	1.9254	0.0000	0.0000
273.6	0.10709	0.1606	1.044	0.1606	1.9269	0.0000	0.0000
273.8	0.107173	0.1608	1.044	0.1608	1.9284	0.0000	0.0000
274	0.107257	0.1609	1.044	0.1609	1.9299	0.0000	0.0000
274.2	0.10734	0.1610	1.044	0.1610	1.9314	0.0000	0.0000
274.4	0.107424	0.1611	1.044	0.1611	1.9329	0.0000	0.0000
274.6	0.107508	0.1613	1.044	0.1613	1.9344	0.0000	0.0000
274.8	0.107591	0.1614	1.044	0.1614	1.9359	0.0000	0.0000
275	0.107675	0.1615	1.044	0.1615	1.9374	0.0000	0.0000
275.2	0.107759	0.1616	1.044	0.1616	1.9389	0.0000	0.0000
275.4	0.107842	0.1618	1.044	0.1618	1.9404	0.0000	0.0000
275.6	0.107926	0.1619	1.044	0.1619	1.9419	0.0000	0.0000
275.8	0.10801	0.1620	1.044	0.1620	1.9434	0.0000	0.0000
276	0.108094	0.1621	1.044	0.1621	1.9449	0.0000	0.0000
276.2	0.108177	0.1623	1.044	0.1623	1.9464	0.0000	0.0000
276.4	0.108261	0.1624	1.044	0.1624	1.9479	0.0000	0.0000
276.6	0.108345	0.1625	1.044	0.1625	1.9495	0.0000	0.0000
276.8	0.108429	0.1626	1.044	0.1626	1.9510	0.0000	0.0000
277	0.108512	0.1628	1.044	0.1628	1.9525	0.0000	0.0000
277.2	0.108596	0.1629	1.044	0.1629	1.9540	0.0000	0.0000
277.4	0.10868	0.1630	1.044	0.1630	1.9555	0.0000	0.0000
277.6	0.108764	0.1631	1.044	0.1631	1.9570	0.0000	0.0000
277.8	0.108847	0.1633	1.044	0.1633	1.9585	0.0000	0.0000
278	0.108931	0.1634	1.044	0.1634	1.9600	0.0000	0.0000
278.2	0.109015	0.1635	1.044	0.1635	1.9615	0.0000	0.0000
278.4	0.109099	0.1636	1.044	0.1636	1.9630	0.0000	0.0000
278.6	0.109183	0.1638	1.044	0.1638	1.9645	0.0000	0.0000
278.8	0.109267	0.1639	1.044	0.1639	1.9660	0.0000	0.0000
279	0.10935	0.1640	1.044	0.1640	1.9676	0.0000	0.0000
279.2	0.109434	0.1642	1.044	0.1642	1.9691	0.0000	0.0000
279.4	0.109518	0.1643	1.044	0.1643	1.9706	0.0000	0.0000
279.6	0.109602	0.1644	1.044	0.1644	1.9721	0.0000	0.0000
279.8	0.109686	0.1645	1.044	0.1645	1.9736	0.0000	0.0000
280	0.10977	0.1647	1.044	0.1647	1.9751	0.0000	0.0000
280.2	0.109854	0.1648	1.044	0.1648	1.9766	0.0000	0.0000
280.4	0.109938	0.1649	1.044	0.1649	1.9781	0.0000	0.0000

280.6	0.110022	0.1650	1.044	0.1650	1.9796	0.0000	0.0000
280.8	0.110106	0.1652	1.044	0.1652	1.9811	0.0000	0.0000
281	0.11019	0.1653	1.044	0.1653	1.9827	0.0000	0.0000
281.2	0.110273	0.1654	1.044	0.1654	1.9842	0.0000	0.0000
281.4	0.110357	0.1655	1.044	0.1655	1.9857	0.0000	0.0000
281.6	0.110441	0.1657	1.044	0.1657	1.9872	0.0000	0.0000
281.8	0.110525	0.1658	1.044	0.1658	1.9887	0.0000	0.0000
282	0.110609	0.1659	1.044	0.1659	1.9902	0.0000	0.0000
282.2	0.110693	0.1660	1.044	0.1660	1.9917	0.0000	0.0000
282.4	0.110777	0.1662	1.044	0.1662	1.9932	0.0000	0.0000
282.6	0.110861	0.1663	1.044	0.1663	1.9947	0.0000	0.0000
282.8	0.110945	0.1664	1.044	0.1664	1.9963	0.0000	0.0000
283	0.111029	0.1665	1.044	0.1665	1.9978	0.0000	0.0000
283.2	0.111114	0.1667	1.044	0.1667	1.9993	0.0000	0.0000
283.4	0.111198	0.1668	1.044	0.1668	2.0008	0.0000	0.0000
283.6	0.111282	0.1669	1.044	0.1669	2.0023	0.0000	0.0000
283.8	0.111366	0.1670	1.044	0.1670	2.0038	0.0000	0.0000
284	0.11145	0.1672	1.044	0.1672	2.0053	0.0000	0.0000
284.2	0.111534	0.1673	1.044	0.1673	2.0069	0.0000	0.0000
284.4	0.111618	0.1674	1.044	0.1674	2.0084	0.0000	0.0000
284.6	0.111702	0.1676	1.044	0.1676	2.0099	0.0000	0.0000
284.8	0.111786	0.1677	1.044	0.1677	2.0114	0.0000	0.0000
285	0.11187	0.1678	1.044	0.1678	2.0129	0.0000	0.0000
285.2	0.111954	0.1679	1.044	0.1679	2.0144	0.0000	0.0000
285.4	0.112039	0.1681	1.044	0.1681	2.0159	0.0000	0.0000
285.6	0.112123	0.1682	1.044	0.1682	2.0175	0.0000	0.0000
285.8	0.112207	0.1683	1.044	0.1683	2.0190	0.0000	0.0000
286	0.112291	0.1684	1.044	0.1684	2.0205	0.0000	0.0000
286.2	0.112375	0.1686	1.044	0.1686	2.0220	0.0000	0.0000
286.4	0.112459	0.1687	1.044	0.1687	2.0235	0.0000	0.0000
286.6	0.112544	0.1688	1.044	0.1688	2.0250	0.0000	0.0000
286.8	0.112628	0.1689	1.044	0.1689	2.0265	0.0000	0.0000
287	0.112712	0.1691	1.044	0.1691	2.0281	0.0000	0.0000
287.2	0.112796	0.1692	1.044	0.1692	2.0296	0.0000	0.0000
287.4	0.112881	0.1693	1.044	0.1693	2.0311	0.0000	0.0000
287.6	0.112965	0.1694	1.044	0.1694	2.0326	0.0000	0.0000
287.8	0.113049	0.1696	1.044	0.1696	2.0341	0.0000	0.0000
288	0.113133	0.1697	1.044	0.1697	2.0356	0.0000	0.0000
288.2	0.113218	0.1698	1.044	0.1698	2.0372	0.0000	0.0000
288.4	0.113302	0.1700	1.044	0.1700	2.0387	0.0000	0.0000
288.6	0.113386	0.1701	1.044	0.1701	2.0402	0.0000	0.0000
288.8	0.11347	0.1702	1.044	0.1702	2.0417	0.0000	0.0000
289	0.113555	0.1703	1.044	0.1703	2.0432	0.0000	0.0000
289.2	0.113639	0.1705	1.044	0.1705	2.0447	0.0000	0.0000
289.4	0.113723	0.1706	1.044	0.1706	2.0463	0.0000	0.0000
289.6	0.113808	0.1707	1.044	0.1707	2.0478	0.0000	0.0000
289.8	0.113892	0.1708	1.044	0.1708	2.0493	0.0000	0.0000

290	0.113976	0.1710	1.044	0.1710	2.0508	0.0000	0.0000
290.2	0.114061	0.1711	1.044	0.1711	2.0523	0.0000	0.0000
290.4	0.114145	0.1712	1.044	0.1712	2.0539	0.0000	0.0000
290.6	0.11423	0.1713	1.044	0.1713	2.0554	0.0000	0.0000
290.8	0.114314	0.1715	1.044	0.1715	2.0569	0.0000	0.0000
291	0.114398	0.1716	1.044	0.1716	2.0584	0.0000	0.0000
291.2	0.114483	0.1717	1.044	0.1717	2.0599	0.0000	0.0000
291.4	0.114567	0.1719	1.044	0.1719	2.0614	0.0000	0.0000
291.6	0.114652	0.1720	1.044	0.1720	2.0630	0.0000	0.0000
291.8	0.114736	0.1721	1.044	0.1721	2.0645	0.0000	0.0000
292	0.114821	0.1722	1.044	0.1722	2.0660	0.0000	0.0000
292.2	0.114905	0.1724	1.044	0.1724	2.0675	0.0000	0.0000
292.4	0.114989	0.1725	1.044	0.1725	2.0690	0.0000	0.0000
292.6	0.115074	0.1726	1.044	0.1726	2.0706	0.0000	0.0000
292.8	0.115158	0.1727	1.044	0.1727	2.0721	0.0000	0.0000
293	0.115243	0.1729	1.044	0.1729	2.0736	0.0000	0.0000
293.2	0.115327	0.1730	1.044	0.1730	2.0751	0.0000	0.0000
293.4	0.115412	0.1731	1.044	0.1731	2.0767	0.0000	0.0000
293.6	0.115496	0.1732	1.044	0.1732	2.0782	0.0000	0.0000
293.8	0.115581	0.1734	1.044	0.1734	2.0797	0.0000	0.0000
294	0.115665	0.1735	1.044	0.1735	2.0812	0.0000	0.0000
294.2	0.11575	0.1736	1.044	0.1736	2.0827	0.0000	0.0000
294.4	0.115835	0.1738	1.044	0.1738	2.0843	0.0000	0.0000
294.6	0.115919	0.1739	1.044	0.1739	2.0858	0.0000	0.0000
294.8	0.116004	0.1740	1.044	0.1740	2.0873	0.0000	0.0000
295	0.116088	0.1741	1.044	0.1741	2.0888	0.0000	0.0000
295.2	0.116173	0.1743	1.044	0.1743	2.0904	0.0000	0.0000
295.4	0.116258	0.1744	1.044	0.1744	2.0919	0.0000	0.0000
295.6	0.116342	0.1745	1.044	0.1745	2.0934	0.0000	0.0000
295.8	0.116427	0.1746	1.044	0.1746	2.0949	0.0000	0.0000
296	0.116511	0.1748	1.044	0.1748	2.0964	0.0000	0.0000
296.2	0.116596	0.1749	1.044	0.1749	2.0980	0.0000	0.0000
296.4	0.116681	0.1750	1.044	0.1750	2.0995	0.0000	0.0000
296.6	0.116765	0.1751	1.044	0.1751	2.1010	0.0000	0.0000
296.8	0.11685	0.1753	1.044	0.1753	2.1025	0.0000	0.0000
297	0.116935	0.1754	1.044	0.1754	2.1041	0.0000	0.0000
297.2	0.117019	0.1755	1.044	0.1755	2.1056	0.0000	0.0000
297.4	0.117104	0.1757	1.044	0.1757	2.1071	0.0000	0.0000
297.6	0.117189	0.1758	1.044	0.1758	2.1086	0.0000	0.0000
297.8	0.117274	0.1759	1.044	0.1759	2.1102	0.0000	0.0000
298	0.117358	0.1760	1.044	0.1760	2.1117	0.0000	0.0000
298.2	0.117443	0.1762	1.044	0.1762	2.1132	0.0000	0.0000
298.4	0.117528	0.1763	1.044	0.1763	2.1147	0.0000	0.0000
298.6	0.117612	0.1764	1.044	0.1764	2.1163	0.0000	0.0000
298.8	0.117697	0.1765	1.044	0.1765	2.1178	0.0000	0.0000
299	0.117782	0.1767	1.044	0.1767	2.1193	0.0000	0.0000
299.2	0.117867	0.1768	1.044	0.1768	2.1208	0.0000	0.0000

299.4	0.117952	0.1769	1.044	0.1769	2.1224	0.0000	0.0000
299.6	0.118036	0.1771	1.044	0.1771	2.1239	0.0000	0.0000
299.8	0.118121	0.1772	1.044	0.1772	2.1254	0.0000	0.0000
300	0.118206	0.1773	1.044	0.1773	2.1269	0.0000	0.0000
300.2	0.118291	0.1774	1.044	0.1774	2.1285	0.0000	0.0000
300.4	0.118376	0.1776	1.044	0.1776	2.1300	0.0000	0.0000
300.6	0.118461	0.1777	1.044	0.1777	2.1315	0.0000	0.0000
300.8	0.118545	0.1778	1.044	0.1778	2.1331	0.0000	0.0000
301	0.11863	0.1779	1.044	0.1779	2.1346	0.0000	0.0000
301.2	0.118715	0.1781	1.044	0.1781	2.1361	0.0000	0.0000
301.4	0.1188	0.1782	1.044	0.1782	2.1376	0.0000	0.0000
301.6	0.118885	0.1783	1.044	0.1783	2.1392	0.0000	0.0000
301.8	0.11897	0.1785	1.044	0.1785	2.1407	0.0000	0.0000
302	0.119055	0.1786	1.044	0.1786	2.1422	0.0000	0.0000
302.2	0.11914	0.1787	1.044	0.1787	2.1437	0.0000	0.0000
302.4	0.119225	0.1788	1.044	0.1788	2.1453	0.0000	0.0000
302.6	0.11931	0.1790	1.044	0.1790	2.1468	0.0000	0.0000
302.8	0.119394	0.1791	1.044	0.1791	2.1483	0.0000	0.0000
303	0.119479	0.1792	1.044	0.1792	2.1499	0.0000	0.0000
303.2	0.119564	0.1793	1.044	0.1793	2.1514	0.0000	0.0000
303.4	0.119649	0.1795	1.044	0.1795	2.1529	0.0000	0.0000
303.6	0.119734	0.1796	1.044	0.1796	2.1545	0.0000	0.0000
303.8	0.119819	0.1797	1.044	0.1797	2.1560	0.0000	0.0000
304	0.119904	0.1799	1.044	0.1799	2.1575	0.0000	0.0000
304.2	0.119989	0.1800	1.044	0.1800	2.1590	0.0000	0.0000
304.4	0.120074	0.1801	1.044	0.1801	2.1606	0.0000	0.0000
304.6	0.120159	0.1802	1.044	0.1802	2.1621	0.0000	0.0000
304.8	0.120245	0.1804	1.044	0.1804	2.1636	0.0000	0.0000
305	0.12033	0.1805	1.044	0.1805	2.1652	0.0000	0.0000
305.2	0.120415	0.1806	1.044	0.1806	2.1667	0.0000	0.0000
305.4	0.1205	0.1807	1.044	0.1807	2.1682	0.0000	0.0000
305.6	0.120585	0.1809	1.044	0.1809	2.1698	0.0000	0.0000
305.8	0.12067	0.1810	1.044	0.1810	2.1713	0.0000	0.0000
306	0.120755	0.1811	1.044	0.1811	2.1728	0.0000	0.0000
306.2	0.12084	0.1813	1.044	0.1813	2.1744	0.0000	0.0000
306.4	0.120925	0.1814	1.044	0.1814	2.1759	0.0000	0.0000
306.6	0.12101	0.1815	1.044	0.1815	2.1774	0.0000	0.0000
306.8	0.121095	0.1816	1.044	0.1816	2.1790	0.0000	0.0000
307	0.121181	0.1818	1.044	0.1818	2.1805	0.0000	0.0000
307.2	0.121266	0.1819	1.044	0.1819	2.1820	0.0000	0.0000
307.4	0.121351	0.1820	1.044	0.1820	2.1836	0.0000	0.0000
307.6	0.121436	0.1822	1.044	0.1822	2.1851	0.0000	0.0000
307.8	0.121521	0.1823	1.044	0.1823	2.1866	0.0000	0.0000
308	0.121607	0.1824	1.044	0.1824	2.1882	0.0000	0.0000
308.2	0.121692	0.1825	1.044	0.1825	2.1897	0.0000	0.0000
308.4	0.121777	0.1827	1.044	0.1827	2.1912	0.0000	0.0000
308.6	0.121862	0.1828	1.044	0.1828	2.1928	0.0000	0.0000

308.8	0.121947	0.1829	1.044	0.1829	2.1943	0.0000	0.0000
309	0.122033	0.1830	1.044	0.1830	2.1958	0.0000	0.0000
309.2	0.122118	0.1832	1.044	0.1832	2.1974	0.0000	0.0000
309.4	0.122203	0.1833	1.044	0.1833	2.1989	0.0000	0.0000
309.6	0.122288	0.1834	1.044	0.1834	2.2004	0.0000	0.0000
309.8	0.122374	0.1836	1.044	0.1836	2.2020	0.0000	0.0000
310	0.122459	0.1837	1.044	0.1837	2.2035	0.0000	0.0000
310.2	0.122544	0.1838	1.044	0.1838	2.2050	0.0000	0.0000
310.4	0.12263	0.1839	1.044	0.1839	2.2066	0.0000	0.0000
310.6	0.122715	0.1841	1.044	0.1841	2.2081	0.0000	0.0000
310.8	0.1228	0.1842	1.044	0.1842	2.2096	0.0000	0.0000
311	0.122886	0.1843	1.044	0.1843	2.2112	0.0000	0.0000
311.2	0.122971	0.1845	1.044	0.1845	2.2127	0.0000	0.0000
311.4	0.123056	0.1846	1.044	0.1846	2.2142	0.0000	0.0000
311.6	0.123142	0.1847	1.044	0.1847	2.2158	0.0000	0.0000
311.8	0.123227	0.1848	1.044	0.1848	2.2173	0.0000	0.0000
312	0.123312	0.1850	1.044	0.1850	2.2189	0.0000	0.0000
312.2	0.123398	0.1851	1.044	0.1851	2.2204	0.0000	0.0000
312.4	0.123483	0.1852	1.044	0.1852	2.2219	0.0000	0.0000
312.6	0.123569	0.1854	1.044	0.1854	2.2235	0.0000	0.0000
312.8	0.123654	0.1855	1.044	0.1855	2.2250	0.0000	0.0000
313	0.12374	0.1856	1.044	0.1856	2.2265	0.0000	0.0000
313.2	0.123825	0.1857	1.044	0.1857	2.2281	0.0000	0.0000
313.4	0.12391	0.1859	1.044	0.1859	2.2296	0.0000	0.0000
313.6	0.123996	0.1860	1.044	0.1860	2.2312	0.0000	0.0000
313.8	0.124081	0.1861	1.044	0.1861	2.2327	0.0000	0.0000
314	0.124167	0.1863	1.044	0.1863	2.2342	0.0000	0.0000
314.2	0.124252	0.1864	1.044	0.1864	2.2358	0.0000	0.0000
314.4	0.124338	0.1865	1.044	0.1865	2.2373	0.0000	0.0000
314.6	0.124423	0.1866	1.044	0.1866	2.2389	0.0000	0.0000
314.8	0.124509	0.1868	1.044	0.1868	2.2404	0.0000	0.0000
315	0.124594	0.1869	1.044	0.1869	2.2419	0.0000	0.0000
315.2	0.12468	0.1870	1.044	0.1870	2.2435	0.0000	0.0000
315.4	0.124765	0.1871	1.044	0.1871	2.2450	0.0000	0.0000
315.6	0.124851	0.1873	1.044	0.1873	2.2465	0.0000	0.0000
315.8	0.124937	0.1874	1.044	0.1874	2.2481	0.0000	0.0000
316	0.125022	0.1875	1.044	0.1875	2.2496	0.0000	0.0000
316.2	0.125108	0.1877	1.044	0.1877	2.2512	0.0000	0.0000
316.4	0.125193	0.1878	1.044	0.1878	2.2527	0.0000	0.0000
316.6	0.125279	0.1879	1.044	0.1879	2.2543	0.0000	0.0000
316.8	0.125365	0.1880	1.044	0.1880	2.2558	0.0000	0.0000
317	0.12545	0.1882	1.044	0.1882	2.2573	0.0000	0.0000
317.2	0.125536	0.1883	1.044	0.1883	2.2589	0.0000	0.0000
317.4	0.125622	0.1884	1.044	0.1884	2.2604	0.0000	0.0000
317.6	0.125707	0.1886	1.044	0.1886	2.2620	0.0000	0.0000
317.8	0.125793	0.1887	1.044	0.1887	2.2635	0.0000	0.0000
318	0.125878	0.1888	1.044	0.1888	2.2650	0.0000	0.0000

318.2	0.125964	0.1889	1.044	0.1889	2.2666	0.0000	0.0000
318.4	0.12605	0.1891	1.044	0.1891	2.2681	0.0000	0.0000
318.6	0.126136	0.1892	1.044	0.1892	2.2697	0.0000	0.0000
318.8	0.126221	0.1893	1.044	0.1893	2.2712	0.0000	0.0000
319	0.126307	0.1895	1.044	0.1895	2.2728	0.0000	0.0000
319.2	0.126393	0.1896	1.044	0.1896	2.2743	0.0000	0.0000
319.4	0.126478	0.1897	1.044	0.1897	2.2758	0.0000	0.0000
319.6	0.126564	0.1898	1.044	0.1898	2.2774	0.0000	0.0000
319.8	0.12665	0.1900	1.044	0.1900	2.2789	0.0000	0.0000
320	0.126736	0.1901	1.044	0.1901	2.2805	0.0000	0.0000
320.2	0.126822	0.1902	1.044	0.1902	2.2820	0.0000	0.0000
320.4	0.126907	0.1904	1.044	0.1904	2.2836	0.0000	0.0000
320.6	0.126993	0.1905	1.044	0.1905	2.2851	0.0000	0.0000
320.8	0.127079	0.1906	1.044	0.1906	2.2866	0.0000	0.0000
321	0.127165	0.1907	1.044	0.1907	2.2882	0.0000	0.0000
321.2	0.127251	0.1909	1.044	0.1909	2.2897	0.0000	0.0000
321.4	0.127336	0.1910	1.044	0.1910	2.2913	0.0000	0.0000
321.6	0.127422	0.1911	1.044	0.1911	2.2928	0.0000	0.0000
321.8	0.127508	0.1913	1.044	0.1913	2.2944	0.0000	0.0000
322	0.127594	0.1914	1.044	0.1914	2.2959	0.0000	0.0000
322.2	0.12768	0.1915	1.044	0.1915	2.2975	0.0000	0.0000
322.4	0.127766	0.1916	1.044	0.1916	2.2990	0.0000	0.0000
322.6	0.127852	0.1918	1.044	0.1918	2.3006	0.0000	0.0000
322.8	0.127938	0.1919	1.044	0.1919	2.3021	0.0000	0.0000
323	0.128024	0.1920	1.044	0.1920	2.3037	0.0000	0.0000
323.2	0.128109	0.1922	1.044	0.1922	2.3052	0.0000	0.0000
323.4	0.128195	0.1923	1.044	0.1923	2.3067	0.0000	0.0000
323.6	0.128281	0.1924	1.044	0.1924	2.3083	0.0000	0.0000
323.8	0.128367	0.1926	1.044	0.1926	2.3098	0.0000	0.0000
324	0.128453	0.1927	1.044	0.1927	2.3114	0.0000	0.0000
324.2	0.128539	0.1928	1.044	0.1928	2.3129	0.0000	0.0000
324.4	0.128625	0.1929	1.044	0.1929	2.3145	0.0000	0.0000
324.6	0.128711	0.1931	1.044	0.1931	2.3160	0.0000	0.0000
324.8	0.128797	0.1932	1.044	0.1932	2.3176	0.0000	0.0000
325	0.128883	0.1933	1.044	0.1933	2.3191	0.0000	0.0000
325.2	0.128969	0.1935	1.044	0.1935	2.3207	0.0000	0.0000
325.4	0.129055	0.1936	1.044	0.1936	2.3222	0.0000	0.0000
325.6	0.129141	0.1937	1.044	0.1937	2.3238	0.0000	0.0000
325.8	0.129227	0.1938	1.044	0.1938	2.3253	0.0000	0.0000
326	0.129313	0.1940	1.044	0.1940	2.3269	0.0000	0.0000
326.2	0.1294	0.1941	1.044	0.1941	2.3284	0.0000	0.0000
326.4	0.129486	0.1942	1.044	0.1942	2.3300	0.0000	0.0000
326.6	0.129572	0.1944	1.044	0.1944	2.3315	0.0000	0.0000
326.8	0.129658	0.1945	1.044	0.1945	2.3331	0.0000	0.0000
327	0.129744	0.1946	1.044	0.1946	2.3346	0.0000	0.0000
327.2	0.12983	0.1947	1.044	0.1947	2.3362	0.0000	0.0000
327.4	0.129916	0.1949	1.044	0.1949	2.3377	0.0000	0.0000

327.6	0.130002	0.1950	1.044	0.1950	2.3393	0.0000	0.0000
327.8	0.130088	0.1951	1.044	0.1951	2.3408	0.0000	0.0000
328	0.130175	0.1953	1.044	0.1953	2.3424	0.0000	0.0000
328.2	0.130261	0.1954	1.044	0.1954	2.3439	0.0000	0.0000
328.4	0.130347	0.1955	1.044	0.1955	2.3455	0.0000	0.0000
328.6	0.130433	0.1956	1.044	0.1956	2.3470	0.0000	0.0000
328.8	0.130519	0.1958	1.044	0.1958	2.3486	0.0000	0.0000
329	0.130606	0.1959	1.044	0.1959	2.3501	0.0000	0.0000
329.2	0.130692	0.1960	1.044	0.1960	2.3517	0.0000	0.0000
329.4	0.130778	0.1962	1.044	0.1962	2.3532	0.0000	0.0000
329.6	0.130864	0.1963	1.044	0.1963	2.3548	0.0000	0.0000
329.8	0.130951	0.1964	1.044	0.1964	2.3563	0.0000	0.0000
330	0.131037	0.1966	1.044	0.1966	2.3579	0.0000	0.0000
330.2	0.131123	0.1967	1.044	0.1967	2.3594	0.0000	0.0000
330.4	0.131209	0.1968	1.044	0.1968	2.3610	0.0000	0.0000
330.6	0.131296	0.1969	1.044	0.1969	2.3625	0.0000	0.0000
330.8	0.131382	0.1971	1.044	0.1971	2.3641	0.0000	0.0000
331	0.131468	0.1972	1.044	0.1972	2.3657	0.0000	0.0000
331.2	0.131555	0.1973	1.044	0.1973	2.3672	0.0000	0.0000
331.4	0.131641	0.1975	1.044	0.1975	2.3688	0.0000	0.0000
331.6	0.131727	0.1976	1.044	0.1976	2.3703	0.0000	0.0000
331.8	0.131814	0.1977	1.044	0.1977	2.3719	0.0000	0.0000
332	0.1319	0.1978	1.044	0.1978	2.3734	0.0000	0.0000
332.2	0.131986	0.1980	1.044	0.1980	2.3750	0.0000	0.0000
332.4	0.132073	0.1981	1.044	0.1981	2.3765	0.0000	0.0000
332.6	0.132159	0.1982	1.044	0.1982	2.3781	0.0000	0.0000
332.8	0.132245	0.1984	1.044	0.1984	2.3796	0.0000	0.0000
333	0.132332	0.1985	1.044	0.1985	2.3812	0.0000	0.0000
333.2	0.132418	0.1986	1.044	0.1986	2.3828	0.0000	0.0000
333.4	0.132505	0.1988	1.044	0.1988	2.3843	0.0000	0.0000
333.6	0.132591	0.1989	1.044	0.1989	2.3859	0.0000	0.0000
333.8	0.132678	0.1990	1.044	0.1990	2.3874	0.0000	0.0000
334	0.132764	0.1991	1.044	0.1991	2.3890	0.0000	0.0000
334.2	0.132851	0.1993	1.044	0.1993	2.3905	0.0000	0.0000
334.4	0.132937	0.1994	1.044	0.1994	2.3921	0.0000	0.0000
334.6	0.133024	0.1995	1.044	0.1995	2.3936	0.0000	0.0000
334.8	0.13311	0.1997	1.044	0.1997	2.3952	0.0000	0.0000
335	0.133197	0.1998	1.044	0.1998	2.3968	0.0000	0.0000
335.2	0.133283	0.1999	1.044	0.1999	2.3983	0.0000	0.0000
335.4	0.13337	0.2001	1.044	0.2001	2.3999	0.0000	0.0000
335.6	0.133456	0.2002	1.044	0.2002	2.4014	0.0000	0.0000
335.8	0.133543	0.2003	1.044	0.2003	2.4030	0.0000	0.0000
336	0.133629	0.2004	1.044	0.2004	2.4045	0.0000	0.0000
336.2	0.133716	0.2006	1.044	0.2006	2.4061	0.0000	0.0000
336.4	0.133802	0.2007	1.044	0.2007	2.4077	0.0000	0.0000
336.6	0.133889	0.2008	1.044	0.2008	2.4092	0.0000	0.0000
336.8	0.133976	0.2010	1.044	0.2010	2.4108	0.0000	0.0000

337	0.134062	0.2011	1.044	0.2011	2.4123	0.0000	0.0000
337.2	0.134149	0.2012	1.044	0.2012	2.4139	0.0000	0.0000
337.4	0.134235	0.2014	1.044	0.2014	2.4155	0.0000	0.0000
337.6	0.134322	0.2015	1.044	0.2015	2.4170	0.0000	0.0000
337.8	0.134409	0.2016	1.044	0.2016	2.4186	0.0000	0.0000
338	0.134495	0.2017	1.044	0.2017	2.4201	0.0000	0.0000
338.2	0.134582	0.2019	1.044	0.2019	2.4217	0.0000	0.0000
338.4	0.134669	0.2020	1.044	0.2020	2.4233	0.0000	0.0000
338.6	0.134755	0.2021	1.044	0.2021	2.4248	0.0000	0.0000
338.8	0.134842	0.2023	1.044	0.2023	2.4264	0.0000	0.0000
339	0.134929	0.2024	1.044	0.2024	2.4279	0.0000	0.0000
339.2	0.135015	0.2025	1.044	0.2025	2.4295	0.0000	0.0000
339.4	0.135102	0.2027	1.044	0.2027	2.4311	0.0000	0.0000
339.6	0.135189	0.2028	1.044	0.2028	2.4326	0.0000	0.0000
339.8	0.135276	0.2029	1.044	0.2029	2.4342	0.0000	0.0000
340	0.135362	0.2030	1.044	0.2030	2.4357	0.0000	0.0000
340.2	0.135449	0.2032	1.044	0.2032	2.4373	0.0000	0.0000
340.4	0.135536	0.2033	1.044	0.2033	2.4389	0.0000	0.0000
340.6	0.135623	0.2034	1.044	0.2034	2.4404	0.0000	0.0000
340.8	0.13571	0.2036	1.044	0.2036	2.4420	0.0000	0.0000
341	0.135796	0.2037	1.044	0.2037	2.4436	0.0000	0.0000
341.2	0.135883	0.2038	1.044	0.2038	2.4451	0.0000	0.0000
341.4	0.13597	0.2040	1.044	0.2040	2.4467	0.0000	0.0000
341.6	0.136057	0.2041	1.044	0.2041	2.4482	0.0000	0.0000
341.8	0.136144	0.2042	1.044	0.2042	2.4498	0.0000	0.0000
342	0.136231	0.2043	1.044	0.2043	2.4514	0.0000	0.0000
342.2	0.136317	0.2045	1.044	0.2045	2.4529	0.0000	0.0000
342.4	0.136404	0.2046	1.044	0.2046	2.4545	0.0000	0.0000
342.6	0.136491	0.2047	1.044	0.2047	2.4561	0.0000	0.0000
342.8	0.136578	0.2049	1.044	0.2049	2.4576	0.0000	0.0000
343	0.136665	0.2050	1.044	0.2050	2.4592	0.0000	0.0000
343.2	0.136752	0.2051	1.044	0.2051	2.4608	0.0000	0.0000
343.4	0.136839	0.2053	1.044	0.2053	2.4623	0.0000	0.0000
343.6	0.136926	0.2054	1.044	0.2054	2.4639	0.0000	0.0000
343.8	0.137013	0.2055	1.044	0.2055	2.4654	0.0000	0.0000
344	0.1371	0.2056	1.044	0.2056	2.4670	0.0000	0.0000
344.2	0.137187	0.2058	1.044	0.2058	2.4686	0.0000	0.0000
344.4	0.137274	0.2059	1.044	0.2059	2.4701	0.0000	0.0000
344.6	0.137361	0.2060	1.044	0.2060	2.4717	0.0000	0.0000
344.8	0.137448	0.2062	1.044	0.2062	2.4733	0.0000	0.0000
345	0.137535	0.2063	1.044	0.2063	2.4748	0.0000	0.0000
345.2	0.137622	0.2064	1.044	0.2064	2.4764	0.0000	0.0000
345.4	0.137709	0.2066	1.044	0.2066	2.4780	0.0000	0.0000
345.6	0.137796	0.2067	1.044	0.2067	2.4795	0.0000	0.0000
345.8	0.137883	0.2068	1.044	0.2068	2.4811	0.0000	0.0000
346	0.13797	0.2070	1.044	0.2070	2.4827	0.0000	0.0000
346.2	0.138057	0.2071	1.044	0.2071	2.4842	0.0000	0.0000

346.4	0.138144	0.2072	1.044	0.2072	2.4858	0.0000	0.0000
346.6	0.138231	0.2073	1.044	0.2073	2.4874	0.0000	0.0000
346.8	0.138318	0.2075	1.044	0.2075	2.4889	0.0000	0.0000
347	0.138405	0.2076	1.044	0.2076	2.4905	0.0000	0.0000
347.2	0.138492	0.2077	1.044	0.2077	2.4921	0.0000	0.0000
347.4	0.13858	0.2079	1.044	0.2079	2.4936	0.0000	0.0000
347.6	0.138667	0.2080	1.044	0.2080	2.4952	0.0000	0.0000
347.8	0.138754	0.2081	1.044	0.2081	2.4968	0.0000	0.0000
348	0.138841	0.2083	1.044	0.2083	2.4984	0.0000	0.0000
348.2	0.138928	0.2084	1.044	0.2084	2.4999	0.0000	0.0000
348.4	0.139015	0.2085	1.044	0.2085	2.5015	0.0000	0.0000
348.6	0.139103	0.2087	1.044	0.2087	2.5031	0.0000	0.0000
348.8	0.13919	0.2088	1.044	0.2088	2.5046	0.0000	0.0000
349	0.139277	0.2089	1.044	0.2089	2.5062	0.0000	0.0000
349.2	0.139364	0.2090	1.044	0.2090	2.5078	0.0000	0.0000
349.4	0.139451	0.2092	1.044	0.2092	2.5093	0.0000	0.0000
349.6	0.139539	0.2093	1.044	0.2093	2.5109	0.0000	0.0000
349.8	0.139626	0.2094	1.044	0.2094	2.5125	0.0000	0.0000
350	0.139713	0.2096	1.044	0.2096	2.5141	0.0000	0.0000
350.2	0.139801	0.2097	1.044	0.2097	2.5156	0.0000	0.0000
350.4	0.139888	0.2098	1.044	0.2098	2.5172	0.0000	0.0000
350.6	0.139975	0.2100	1.044	0.2100	2.5188	0.0000	0.0000
350.8	0.140062	0.2101	1.044	0.2101	2.5203	0.0000	0.0000
351	0.14015	0.2102	1.044	0.2102	2.5219	0.0000	0.0000
351.2	0.140237	0.2104	1.044	0.2104	2.5235	0.0000	0.0000
351.4	0.140324	0.2105	1.044	0.2105	2.5251	0.0000	0.0000
351.6	0.140412	0.2106	1.044	0.2106	2.5266	0.0000	0.0000
351.8	0.140499	0.2107	1.044	0.2107	2.5282	0.0000	0.0000
352	0.140586	0.2109	1.044	0.2109	2.5298	0.0000	0.0000
352.2	0.140674	0.2110	1.044	0.2110	2.5313	0.0000	0.0000
352.4	0.140761	0.2111	1.044	0.2111	2.5329	0.0000	0.0000
352.6	0.140849	0.2113	1.044	0.2113	2.5345	0.0000	0.0000
352.8	0.140936	0.2114	1.044	0.2114	2.5361	0.0000	0.0000
353	0.141023	0.2115	1.044	0.2115	2.5376	0.0000	0.0000
353.2	0.141111	0.2117	1.044	0.2117	2.5392	0.0000	0.0000
353.4	0.141198	0.2118	1.044	0.2118	2.5408	0.0000	0.0000
353.6	0.141286	0.2119	1.044	0.2119	2.5424	0.0000	0.0000
353.8	0.141373	0.2121	1.044	0.2121	2.5439	0.0000	0.0000
354	0.141461	0.2122	1.044	0.2122	2.5455	0.0000	0.0000
354.2	0.141548	0.2123	1.044	0.2123	2.5471	0.0000	0.0000
354.4	0.141636	0.2125	1.044	0.2125	2.5487	0.0000	0.0000
354.6	0.141723	0.2126	1.044	0.2126	2.5502	0.0000	0.0000
354.8	0.141811	0.2127	1.044	0.2127	2.5518	0.0000	0.0000
355	0.141898	0.2128	1.044	0.2128	2.5534	0.0000	0.0000
355.2	0.141986	0.2130	1.044	0.2130	2.5550	0.0000	0.0000
355.4	0.142073	0.2131	1.044	0.2131	2.5565	0.0000	0.0000
355.6	0.142161	0.2132	1.044	0.2132	2.5581	0.0000	0.0000

355.8	0.142248	0.2134	1.044	0.2134	2.5597	0.0000	0.0000
356	0.142336	0.2135	1.044	0.2135	2.5613	0.0000	0.0000
356.2	0.142424	0.2136	1.044	0.2136	2.5628	0.0000	0.0000
356.4	0.142511	0.2138	1.044	0.2138	2.5644	0.0000	0.0000
356.6	0.142599	0.2139	1.044	0.2139	2.5660	0.0000	0.0000
356.8	0.142686	0.2140	1.044	0.2140	2.5676	0.0000	0.0000
357	0.142774	0.2142	1.044	0.2142	2.5691	0.0000	0.0000
357.2	0.142862	0.2143	1.044	0.2143	2.5707	0.0000	0.0000
357.4	0.142949	0.2144	1.044	0.2144	2.5723	0.0000	0.0000
357.6	0.143037	0.2146	1.044	0.2146	2.5739	0.0000	0.0000
357.8	0.143125	0.2147	1.044	0.2147	2.5755	0.0000	0.0000
358	0.143212	0.2148	1.044	0.2148	2.5770	0.0000	0.0000
358.2	0.1433	0.2149	1.044	0.2149	2.5786	0.0000	0.0000
358.4	0.143388	0.2151	1.044	0.2151	2.5802	0.0000	0.0000
358.6	0.143475	0.2152	1.044	0.2152	2.5818	0.0000	0.0000
358.8	0.143563	0.2153	1.044	0.2153	2.5833	0.0000	0.0000
359	0.143651	0.2155	1.044	0.2155	2.5849	0.0000	0.0000
359.2	0.143739	0.2156	1.044	0.2156	2.5865	0.0000	0.0000
359.4	0.143826	0.2157	1.044	0.2157	2.5881	0.0000	0.0000
359.6	0.143914	0.2159	1.044	0.2159	2.5897	0.0000	0.0000
359.8	0.144002	0.2160	1.044	0.2160	2.5912	0.0000	0.0000
360	0.14409	0.2161	1.044	0.2161	2.5928	0.0000	0.0000
360.2	0.144177	0.2163	1.044	0.2163	2.5944	0.0000	0.0000
360.4	0.144265	0.2164	1.044	0.2164	2.5960	0.0000	0.0000
360.6	0.144353	0.2165	1.044	0.2165	2.5976	0.0000	0.0000
360.8	0.144441	0.2167	1.044	0.2167	2.5991	0.0000	0.0000
361	0.144529	0.2168	1.044	0.2168	2.6007	0.0000	0.0000
361.2	0.144617	0.2169	1.044	0.2169	2.6023	0.0000	0.0000
361.4	0.144704	0.2171	1.044	0.2171	2.6039	0.0000	0.0000
361.6	0.144792	0.2172	1.044	0.2172	2.6055	0.0000	0.0000
361.8	0.14488	0.2173	1.044	0.2173	2.6071	0.0000	0.0000
362	0.144968	0.2175	1.044	0.2175	2.6086	0.0000	0.0000
362.2	0.145056	0.2176	1.044	0.2176	2.6102	0.0000	0.0000
362.4	0.145144	0.2177	1.044	0.2177	2.6118	0.0000	0.0000
362.6	0.145232	0.2178	1.044	0.2178	2.6134	0.0000	0.0000
362.8	0.14532	0.2180	1.044	0.2180	2.6150	0.0000	0.0000
363	0.145408	0.2181	1.044	0.2181	2.6165	0.0000	0.0000
363.2	0.145496	0.2182	1.044	0.2182	2.6181	0.0000	0.0000
363.4	0.145583	0.2184	1.044	0.2184	2.6197	0.0000	0.0000
363.6	0.145671	0.2185	1.044	0.2185	2.6213	0.0000	0.0000
363.8	0.145759	0.2186	1.044	0.2186	2.6229	0.0000	0.0000
364	0.145847	0.2188	1.044	0.2188	2.6245	0.0000	0.0000
364.2	0.145935	0.2189	1.044	0.2189	2.6260	0.0000	0.0000
364.4	0.146023	0.2190	1.044	0.2190	2.6276	0.0000	0.0000
364.6	0.146111	0.2192	1.044	0.2192	2.6292	0.0000	0.0000
364.8	0.146199	0.2193	1.044	0.2193	2.6308	0.0000	0.0000
365	0.146288	0.2194	1.044	0.2194	2.6324	0.0000	0.0000

365.2	0.146376	0.2196	1.044	0.2196	2.6340	0.0000	0.0000
365.4	0.146464	0.2197	1.044	0.2197	2.6356	0.0000	0.0000
365.6	0.146552	0.2198	1.044	0.2198	2.6371	0.0000	0.0000
365.8	0.14664	0.2200	1.044	0.2200	2.6387	0.0000	0.0000
366	0.146728	0.2201	1.044	0.2201	2.6403	0.0000	0.0000
366.2	0.146816	0.2202	1.044	0.2202	2.6419	0.0000	0.0000
366.4	0.146904	0.2204	1.044	0.2204	2.6435	0.0000	0.0000
366.6	0.146992	0.2205	1.044	0.2205	2.6451	0.0000	0.0000
366.8	0.14708	0.2206	1.044	0.2206	2.6467	0.0000	0.0000
367	0.147169	0.2208	1.044	0.2208	2.6482	0.0000	0.0000
367.2	0.147257	0.2209	1.044	0.2209	2.6498	0.0000	0.0000
367.4	0.147345	0.2210	1.044	0.2210	2.6514	0.0000	0.0000
367.6	0.147433	0.2211	1.044	0.2211	2.6530	0.0000	0.0000
367.8	0.147521	0.2213	1.044	0.2213	2.6546	0.0000	0.0000
368	0.147609	0.2214	1.044	0.2214	2.6562	0.0000	0.0000
368.2	0.147698	0.2215	1.044	0.2215	2.6578	0.0000	0.0000
368.4	0.147786	0.2217	1.044	0.2217	2.6594	0.0000	0.0000
368.6	0.147874	0.2218	1.044	0.2218	2.6609	0.0000	0.0000
368.8	0.147962	0.2219	1.044	0.2219	2.6625	0.0000	0.0000
369	0.148051	0.2221	1.044	0.2221	2.6641	0.0000	0.0000
369.2	0.148139	0.2222	1.044	0.2222	2.6657	0.0000	0.0000
369.4	0.148227	0.2223	1.044	0.2223	2.6673	0.0000	0.0000
369.6	0.148315	0.2225	1.044	0.2225	2.6689	0.0000	0.0000
369.8	0.148404	0.2226	1.044	0.2226	2.6705	0.0000	0.0000
370	0.148492	0.2227	1.044	0.2227	2.6721	0.0000	0.0000
370.2	0.14858	0.2229	1.044	0.2229	2.6737	0.0000	0.0000
370.4	0.148669	0.2230	1.044	0.2230	2.6752	0.0000	0.0000
370.6	0.148757	0.2231	1.044	0.2231	2.6768	0.0000	0.0000
370.8	0.148845	0.2233	1.044	0.2233	2.6784	0.0000	0.0000
371	0.148934	0.2234	1.044	0.2234	2.6800	0.0000	0.0000
371.2	0.149022	0.2235	1.044	0.2235	2.6816	0.0000	0.0000
371.4	0.14911	0.2237	1.044	0.2237	2.6832	0.0000	0.0000
371.6	0.149199	0.2238	1.044	0.2238	2.6848	0.0000	0.0000
371.8	0.149287	0.2239	1.044	0.2239	2.6864	0.0000	0.0000
372	0.149376	0.2241	1.044	0.2241	2.6880	0.0000	0.0000
372.2	0.149464	0.2242	1.044	0.2242	2.6896	0.0000	0.0000
372.4	0.149553	0.2243	1.044	0.2243	2.6911	0.0000	0.0000
372.6	0.149641	0.2245	1.044	0.2245	2.6927	0.0000	0.0000
372.8	0.149729	0.2246	1.044	0.2246	2.6943	0.0000	0.0000
373	0.149818	0.2247	1.044	0.2247	2.6959	0.0000	0.0000
373.2	0.149906	0.2249	1.044	0.2249	2.6975	0.0000	0.0000
373.4	0.149995	0.2250	1.044	0.2250	2.6991	0.0000	0.0000
373.6	0.150083	0.2251	1.044	0.2251	2.7007	0.0000	0.0000
373.8	0.150172	0.2253	1.044	0.2253	2.7023	0.0000	0.0000
374	0.15026	0.2254	1.044	0.2254	2.7039	0.0000	0.0000
374.2	0.150349	0.2255	1.044	0.2255	2.7055	0.0000	0.0000
374.4	0.150437	0.2257	1.044	0.2257	2.7071	0.0000	0.0000

374.6	0.150526	0.2258	1.044	0.2258	2.7087	0.0000	0.0000
374.8	0.150615	0.2259	1.044	0.2259	2.7103	0.0000	0.0000
375	0.150703	0.2261	1.044	0.2261	2.7119	0.0000	0.0000
375.2	0.150792	0.2262	1.044	0.2262	2.7135	0.0000	0.0000
375.4	0.15088	0.2263	1.044	0.2263	2.7150	0.0000	0.0000
375.6	0.150969	0.2265	1.044	0.2265	2.7166	0.0000	0.0000
375.8	0.151058	0.2266	1.044	0.2266	2.7182	0.0000	0.0000
376	0.151146	0.2267	1.044	0.2267	2.7198	0.0000	0.0000
376.2	0.151235	0.2269	1.044	0.2269	2.7214	0.0000	0.0000
376.4	0.151323	0.2270	1.044	0.2270	2.7230	0.0000	0.0000
376.6	0.151412	0.2271	1.044	0.2271	2.7246	0.0000	0.0000
376.8	0.151501	0.2273	1.044	0.2273	2.7262	0.0000	0.0000
377	0.151589	0.2274	1.044	0.2274	2.7278	0.0000	0.0000
377.2	0.151678	0.2275	1.044	0.2275	2.7294	0.0000	0.0000
377.4	0.151767	0.2277	1.044	0.2277	2.7310	0.0000	0.0000
377.6	0.151856	0.2278	1.044	0.2278	2.7326	0.0000	0.0000
377.8	0.151944	0.2279	1.044	0.2279	2.7342	0.0000	0.0000
378	0.152033	0.2280	1.044	0.2280	2.7358	0.0000	0.0000
378.2	0.152122	0.2282	1.044	0.2282	2.7374	0.0000	0.0000
378.4	0.152211	0.2283	1.044	0.2283	2.7390	0.0000	0.0000
378.6	0.152299	0.2284	1.044	0.2284	2.7406	0.0000	0.0000
378.8	0.152388	0.2286	1.044	0.2286	2.7422	0.0000	0.0000
379	0.152477	0.2287	1.044	0.2287	2.7438	0.0000	0.0000
379.2	0.152566	0.2288	1.044	0.2288	2.7454	0.0000	0.0000
379.4	0.152654	0.2290	1.044	0.2290	2.7470	0.0000	0.0000
379.6	0.152743	0.2291	1.044	0.2291	2.7486	0.0000	0.0000
379.8	0.152832	0.2292	1.044	0.2292	2.7502	0.0000	0.0000
380	0.152921	0.2294	1.044	0.2294	2.7518	0.0000	0.0000
380.2	0.15301	0.2295	1.044	0.2295	2.7534	0.0000	0.0000
380.4	0.153099	0.2296	1.044	0.2296	2.7550	0.0000	0.0000
380.6	0.153188	0.2298	1.044	0.2298	2.7566	0.0000	0.0000
380.8	0.153276	0.2299	1.044	0.2299	2.7582	0.0000	0.0000
381	0.153365	0.2300	1.044	0.2300	2.7598	0.0000	0.0000
381.2	0.153454	0.2302	1.044	0.2302	2.7614	0.0000	0.0000
381.4	0.153543	0.2303	1.044	0.2303	2.7630	0.0000	0.0000
381.6	0.153632	0.2304	1.044	0.2304	2.7646	0.0000	0.0000
381.8	0.153721	0.2306	1.044	0.2306	2.7662	0.0000	0.0000
382	0.15381	0.2307	1.044	0.2307	2.7678	0.0000	0.0000
382.2	0.153899	0.2308	1.044	0.2308	2.7694	0.0000	0.0000
382.4	0.153988	0.2310	1.044	0.2310	2.7710	0.0000	0.0000
382.6	0.154077	0.2311	1.044	0.2311	2.7726	0.0000	0.0000
382.8	0.154166	0.2312	1.044	0.2312	2.7742	0.0000	0.0000
383	0.154255	0.2314	1.044	0.2314	2.7758	0.0000	0.0000
383.2	0.154344	0.2315	1.044	0.2315	2.7774	0.0000	0.0000
383.4	0.154433	0.2316	1.044	0.2316	2.7790	0.0000	0.0000
383.6	0.154522	0.2318	1.044	0.2318	2.7806	0.0000	0.0000
383.8	0.154611	0.2319	1.044	0.2319	2.7822	0.0000	0.0000

384	0.1547	0.2321	1.044	0.2321	2.7838	0.0000	0.0000
384.2	0.154789	0.2322	1.044	0.2322	2.7854	0.0000	0.0000
384.4	0.154878	0.2323	1.044	0.2323	2.7870	0.0000	0.0000
384.6	0.154967	0.2325	1.044	0.2325	2.7886	0.0000	0.0000
384.8	0.155056	0.2326	1.044	0.2326	2.7902	0.0000	0.0000
385	0.155146	0.2327	1.044	0.2327	2.7918	0.0000	0.0000
385.2	0.155235	0.2329	1.044	0.2329	2.7934	0.0000	0.0000
385.4	0.155324	0.2330	1.044	0.2330	2.7950	0.0000	0.0000
385.6	0.155413	0.2331	1.044	0.2331	2.7966	0.0000	0.0000
385.8	0.155502	0.2333	1.044	0.2333	2.7982	0.0000	0.0000
386	0.155591	0.2334	1.044	0.2334	2.7998	0.0000	0.0000
386.2	0.15568	0.2335	1.044	0.2335	2.8014	0.0000	0.0000
386.4	0.15577	0.2337	1.044	0.2337	2.8031	0.0000	0.0000
386.6	0.155859	0.2338	1.044	0.2338	2.8047	0.0000	0.0000
386.8	0.155948	0.2339	1.044	0.2339	2.8063	0.0000	0.0000
387	0.156037	0.2341	1.044	0.2341	2.8079	0.0000	0.0000
387.2	0.156127	0.2342	1.044	0.2342	2.8095	0.0000	0.0000
387.4	0.156216	0.2343	1.044	0.2343	2.8111	0.0000	0.0000
387.6	0.156305	0.2345	1.044	0.2345	2.8127	0.0000	0.0000
387.8	0.156394	0.2346	1.044	0.2346	2.8143	0.0000	0.0000
388	0.156484	0.2347	1.044	0.2347	2.8159	0.0000	0.0000
388.2	0.156573	0.2349	1.044	0.2349	2.8175	0.0000	0.0000
388.4	0.156662	0.2350	1.044	0.2350	2.8191	0.0000	0.0000
388.6	0.156751	0.2351	1.044	0.2351	2.8207	0.0000	0.0000
388.8	0.156841	0.2353	1.044	0.2353	2.8223	0.0000	0.0000
389	0.15693	0.2354	1.044	0.2354	2.8239	0.0000	0.0000
389.2	0.157019	0.2355	1.044	0.2355	2.8255	0.0000	0.0000
389.4	0.157109	0.2357	1.044	0.2357	2.8272	0.0000	0.0000
389.6	0.157198	0.2358	1.044	0.2358	2.8288	0.0000	0.0000
389.8	0.157288	0.2359	1.044	0.2359	2.8304	0.0000	0.0000
390	0.157377	0.2361	1.044	0.2361	2.8320	0.0000	0.0000
390.2	0.157466	0.2362	1.044	0.2362	2.8336	0.0000	0.0000
390.4	0.157556	0.2363	1.044	0.2363	2.8352	0.0000	0.0000
390.6	0.157645	0.2365	1.044	0.2365	2.8368	0.0000	0.0000
390.8	0.157735	0.2366	1.044	0.2366	2.8384	0.0000	0.0000
391	0.157824	0.2367	1.044	0.2367	2.8400	0.0000	0.0000
391.2	0.157913	0.2369	1.044	0.2369	2.8416	0.0000	0.0000
391.4	0.158003	0.2370	1.044	0.2370	2.8432	0.0000	0.0000
391.6	0.158092	0.2371	1.044	0.2371	2.8449	0.0000	0.0000
391.8	0.158182	0.2373	1.044	0.2373	2.8465	0.0000	0.0000
392	0.158271	0.2374	1.044	0.2374	2.8481	0.0000	0.0000
392.2	0.158361	0.2375	1.044	0.2375	2.8497	0.0000	0.0000
392.4	0.15845	0.2377	1.044	0.2377	2.8513	0.0000	0.0000
392.6	0.15854	0.2378	1.044	0.2378	2.8529	0.0000	0.0000
392.8	0.15863	0.2379	1.044	0.2379	2.8545	0.0000	0.0000
393	0.158719	0.2381	1.044	0.2381	2.8561	0.0000	0.0000
393.2	0.158809	0.2382	1.044	0.2382	2.8577	0.0000	0.0000

393.4	0.158898	0.2383	1.044	0.2383	2.8594	0.0000	0.0000
393.6	0.158988	0.2385	1.044	0.2385	2.8610	0.0000	0.0000
393.8	0.159077	0.2386	1.044	0.2386	2.8626	0.0000	0.0000
394	0.159167	0.2388	1.044	0.2388	2.8642	0.0000	0.0000
394.2	0.159257	0.2389	1.044	0.2389	2.8658	0.0000	0.0000
394.4	0.159346	0.2390	1.044	0.2390	2.8674	0.0000	0.0000
394.6	0.159436	0.2392	1.044	0.2392	2.8690	0.0000	0.0000
394.8	0.159526	0.2393	1.044	0.2393	2.8707	0.0000	0.0000
395	0.159615	0.2394	1.044	0.2394	2.8723	0.0000	0.0000
395.2	0.159705	0.2396	1.044	0.2396	2.8739	0.0000	0.0000
395.4	0.159795	0.2397	1.044	0.2397	2.8755	0.0000	0.0000
395.6	0.159884	0.2398	1.044	0.2398	2.8771	0.0000	0.0000
395.8	0.159974	0.2400	1.044	0.2400	2.8787	0.0000	0.0000
396	0.160064	0.2401	1.044	0.2401	2.8803	0.0000	0.0000
396.2	0.160153	0.2402	1.044	0.2402	2.8820	0.0000	0.0000
396.4	0.160243	0.2404	1.044	0.2404	2.8836	0.0000	0.0000
396.6	0.160333	0.2405	1.044	0.2405	2.8852	0.0000	0.0000
396.8	0.160423	0.2406	1.044	0.2406	2.8868	0.0000	0.0000
397	0.160513	0.2408	1.044	0.2408	2.8884	0.0000	0.0000
397.2	0.160602	0.2409	1.044	0.2409	2.8900	0.0000	0.0000
397.4	0.160692	0.2410	1.044	0.2410	2.8916	0.0000	0.0000
397.6	0.160782	0.2412	1.044	0.2412	2.8933	0.0000	0.0000
397.8	0.160872	0.2413	1.044	0.2413	2.8949	0.0000	0.0000
398	0.160962	0.2414	1.044	0.2414	2.8965	0.0000	0.0000
398.2	0.161051	0.2416	1.044	0.2416	2.8981	0.0000	0.0000
398.4	0.161141	0.2417	1.044	0.2417	2.8997	0.0000	0.0000
398.6	0.161231	0.2418	1.044	0.2418	2.9014	0.0000	0.0000
398.8	0.161321	0.2420	1.044	0.2420	2.9030	0.0000	0.0000
399	0.161411	0.2421	1.044	0.2421	2.9046	0.0000	0.0000
399.2	0.161501	0.2423	1.044	0.2423	2.9062	0.0000	0.0000
399.4	0.161591	0.2424	1.044	0.2424	2.9078	0.0000	0.0000
399.6	0.161681	0.2425	1.044	0.2425	2.9094	0.0000	0.0000
399.8	0.161771	0.2427	1.044	0.2427	2.9111	0.0000	0.0000
400	0.16186	0.2428	1.044	0.2428	2.9127	0.0000	0.0000
400.2	0.16195	0.2429	1.044	0.2429	2.9143	0.0000	0.0000
400.4	0.16204	0.2431	1.044	0.2431	2.9159	0.0000	0.0000
400.6	0.16213	0.2432	1.044	0.2432	2.9175	0.0000	0.0000
400.8	0.16222	0.2433	1.044	0.2433	2.9192	0.0000	0.0000
401	0.16231	0.2435	1.044	0.2435	2.9208	0.0000	0.0000
401.2	0.1624	0.2436	1.044	0.2436	2.9224	0.0000	0.0000
401.4	0.16249	0.2437	1.044	0.2437	2.9240	0.0000	0.0000
401.6	0.16258	0.2439	1.044	0.2439	2.9256	0.0000	0.0000
401.8	0.162671	0.2440	1.044	0.2440	2.9273	0.0000	0.0000
402	0.162761	0.2441	1.044	0.2441	2.9289	0.0000	0.0000
402.2	0.162851	0.2443	1.044	0.2443	2.9305	0.0000	0.0000
402.4	0.162941	0.2444	1.044	0.2444	2.9321	0.0000	0.0000
402.6	0.163031	0.2445	1.044	0.2445	2.9337	0.0000	0.0000

402.8	0.163121	0.2447	1.044	0.2447	2.9354	0.0000	0.0000
403	0.163211	0.2448	1.044	0.2448	2.9370	0.0000	0.0000
403.2	0.163301	0.2450	1.044	0.2450	2.9386	0.0000	0.0000
403.4	0.163391	0.2451	1.044	0.2451	2.9402	0.0000	0.0000
403.6	0.163481	0.2452	1.044	0.2452	2.9419	0.0000	0.0000
403.8	0.163572	0.2454	1.044	0.2454	2.9435	0.0000	0.0000
404	0.163662	0.2455	1.044	0.2455	2.9451	0.0000	0.0000
404.2	0.163752	0.2456	1.044	0.2456	2.9467	0.0000	0.0000
404.4	0.163842	0.2458	1.044	0.2458	2.9483	0.0000	0.0000
404.6	0.163932	0.2459	1.044	0.2459	2.9500	0.0000	0.0000
404.8	0.164023	0.2460	1.044	0.2460	2.9516	0.0000	0.0000
405	0.164113	0.2462	1.044	0.2462	2.9532	0.0000	0.0000
405.2	0.164203	0.2463	1.044	0.2463	2.9548	0.0000	0.0000
405.4	0.164293	0.2464	1.044	0.2464	2.9565	0.0000	0.0000
405.6	0.164384	0.2466	1.044	0.2466	2.9581	0.0000	0.0000
405.8	0.164474	0.2467	1.044	0.2467	2.9597	0.0000	0.0000
406	0.164564	0.2468	1.044	0.2468	2.9613	0.0000	0.0000
406.2	0.164654	0.2470	1.044	0.2470	2.9630	0.0000	0.0000
406.4	0.164745	0.2471	1.044	0.2471	2.9646	0.0000	0.0000
406.6	0.164835	0.2473	1.044	0.2473	2.9662	0.0000	0.0000
406.8	0.164925	0.2474	1.044	0.2474	2.9678	0.0000	0.0000
407	0.165016	0.2475	1.044	0.2475	2.9695	0.0000	0.0000
407.2	0.165106	0.2477	1.044	0.2477	2.9711	0.0000	0.0000
407.4	0.165196	0.2478	1.044	0.2478	2.9727	0.0000	0.0000
407.6	0.165287	0.2479	1.044	0.2479	2.9743	0.0000	0.0000
407.8	0.165377	0.2481	1.044	0.2481	2.9760	0.0000	0.0000
408	0.165468	0.2482	1.044	0.2482	2.9776	0.0000	0.0000
408.2	0.165558	0.2483	1.044	0.2483	2.9792	0.0000	0.0000
408.4	0.165648	0.2485	1.044	0.2485	2.9809	0.0000	0.0000
408.6	0.165739	0.2486	1.044	0.2486	2.9825	0.0000	0.0000
408.8	0.165829	0.2487	1.044	0.2487	2.9841	0.0000	0.0000
409	0.16592	0.2489	1.044	0.2489	2.9857	0.0000	0.0000
409.2	0.16601	0.2490	1.044	0.2490	2.9874	0.0000	0.0000
409.4	0.166101	0.2492	1.044	0.2492	2.9890	0.0000	0.0000
409.6	0.166191	0.2493	1.044	0.2493	2.9906	0.0000	0.0000
409.8	0.166282	0.2494	1.044	0.2494	2.9923	0.0000	0.0000
410	0.166372	0.2496	1.044	0.2496	2.9939	0.0000	0.0000
410.2	0.166463	0.2497	1.044	0.2497	2.9955	0.0000	0.0000
410.4	0.166553	0.2498	1.044	0.2498	2.9971	0.0000	0.0000
410.6	0.166644	0.2500	1.044	0.2500	2.9988	0.0000	0.0000
410.8	0.166734	0.2501	1.044	0.2501	3.0004	0.0000	0.0000
411	0.166825	0.2502	1.044	0.2502	3.0020	0.0000	0.0000
411.2	0.166915	0.2504	1.044	0.2504	3.0037	0.0000	0.0000
411.4	0.167006	0.2505	1.044	0.2505	3.0053	0.0000	0.0000
411.6	0.167097	0.2506	1.044	0.2506	3.0069	0.0000	0.0000
411.8	0.167187	0.2508	1.044	0.2508	3.0086	0.0000	0.0000
412	0.167278	0.2509	1.044	0.2509	3.0102	0.0000	0.0000

412.2	0.167369	0.2511	1.044	0.2511	3.0118	0.0000	0.0000
412.4	0.167459	0.2512	1.044	0.2512	3.0135	0.0000	0.0000
412.6	0.16755	0.2513	1.044	0.2513	3.0151	0.0000	0.0000
412.8	0.167641	0.2515	1.044	0.2515	3.0167	0.0000	0.0000
413	0.167731	0.2516	1.044	0.2516	3.0183	0.0000	0.0000
413.2	0.167822	0.2517	1.044	0.2517	3.0200	0.0000	0.0000
413.4	0.167913	0.2519	1.044	0.2519	3.0216	0.0000	0.0000
413.6	0.168003	0.2520	1.044	0.2520	3.0232	0.0000	0.0000
413.8	0.168094	0.2521	1.044	0.2521	3.0249	0.0000	0.0000
414	0.168185	0.2523	1.044	0.2523	3.0265	0.0000	0.0000
414.2	0.168276	0.2524	1.044	0.2524	3.0281	0.0000	0.0000
414.4	0.168366	0.2525	1.044	0.2525	3.0298	0.0000	0.0000
414.6	0.168457	0.2527	1.044	0.2527	3.0314	0.0000	0.0000
414.8	0.168548	0.2528	1.044	0.2528	3.0330	0.0000	0.0000
415	0.168639	0.2530	1.044	0.2530	3.0347	0.0000	0.0000
415.2	0.16873	0.2531	1.044	0.2531	3.0363	0.0000	0.0000
415.4	0.16882	0.2532	1.044	0.2532	3.0379	0.0000	0.0000
415.6	0.168911	0.2534	1.044	0.2534	3.0396	0.0000	0.0000
415.8	0.169002	0.2535	1.044	0.2535	3.0412	0.0000	0.0000
416	0.169093	0.2536	1.044	0.2536	3.0429	0.0000	0.0000
416.2	0.169184	0.2538	1.044	0.2538	3.0445	0.0000	0.0000
416.4	0.169275	0.2539	1.044	0.2539	3.0461	0.0000	0.0000
416.6	0.169366	0.2540	1.044	0.2540	3.0478	0.0000	0.0000
416.8	0.169456	0.2542	1.044	0.2542	3.0494	0.0000	0.0000
417	0.169547	0.2543	1.044	0.2543	3.0510	0.0000	0.0000
417.2	0.169638	0.2545	1.044	0.2545	3.0527	0.0000	0.0000
417.4	0.169729	0.2546	1.044	0.2546	3.0543	0.0000	0.0000
417.6	0.16982	0.2547	1.044	0.2547	3.0559	0.0000	0.0000
417.8	0.169911	0.2549	1.044	0.2549	3.0576	0.0000	0.0000
418	0.170002	0.2550	1.044	0.2550	3.0592	0.0000	0.0000
418.2	0.170093	0.2551	1.044	0.2551	3.0609	0.0000	0.0000
418.4	0.170184	0.2553	1.044	0.2553	3.0625	0.0000	0.0000
418.6	0.170275	0.2554	1.044	0.2554	3.0641	0.0000	0.0000
418.8	0.170366	0.2555	1.044	0.2555	3.0658	0.0000	0.0000
419	0.170457	0.2557	1.044	0.2557	3.0674	0.0000	0.0000
419.2	0.170548	0.2558	1.044	0.2558	3.0690	0.0000	0.0000
419.4	0.170639	0.2560	1.044	0.2560	3.0707	0.0000	0.0000
419.6	0.17073	0.2561	1.044	0.2561	3.0723	0.0000	0.0000
419.8	0.170821	0.2562	1.044	0.2562	3.0740	0.0000	0.0000
420	0.170913	0.2564	1.044	0.2564	3.0756	0.0000	0.0000
420.2	0.171004	0.2565	1.044	0.2565	3.0772	0.0000	0.0000
420.4	0.171095	0.2566	1.044	0.2566	3.0789	0.0000	0.0000
420.6	0.171186	0.2568	1.044	0.2568	3.0805	0.0000	0.0000
420.8	0.171277	0.2569	1.044	0.2569	3.0822	0.0000	0.0000
421	0.171368	0.2571	1.044	0.2571	3.0838	0.0000	0.0000
421.2	0.171459	0.2572	1.044	0.2572	3.0854	0.0000	0.0000
421.4	0.17155	0.2573	1.044	0.2573	3.0871	0.0000	0.0000

421.6	0.171642	0.2575	1.044	0.2575	3.0887	0.0000	0.0000
421.8	0.171733	0.2576	1.044	0.2576	3.0904	0.0000	0.0000
422	0.171824	0.2577	1.044	0.2577	3.0920	0.0000	0.0000
422.2	0.171915	0.2579	1.044	0.2579	3.0937	0.0000	0.0000
422.4	0.172007	0.2580	1.044	0.2580	3.0953	0.0000	0.0000
422.6	0.172098	0.2581	1.044	0.2581	3.0969	0.0000	0.0000
422.8	0.172189	0.2583	1.044	0.2583	3.0986	0.0000	0.0000
423	0.17228	0.2584	1.044	0.2584	3.1002	0.0000	0.0000
423.2	0.172372	0.2586	1.044	0.2586	3.1019	0.0000	0.0000
423.4	0.172463	0.2587	1.044	0.2587	3.1035	0.0000	0.0000
423.6	0.172554	0.2588	1.044	0.2588	3.1052	0.0000	0.0000
423.8	0.172645	0.2590	1.044	0.2590	3.1068	0.0000	0.0000
424	0.172737	0.2591	1.044	0.2591	3.1084	0.0000	0.0000
424.2	0.172828	0.2592	1.044	0.2592	3.1101	0.0000	0.0000
424.4	0.172919	0.2594	1.044	0.2594	3.1117	0.0000	0.0000
424.6	0.173011	0.2595	1.044	0.2595	3.1134	0.0000	0.0000
424.8	0.173102	0.2597	1.044	0.2597	3.1150	0.0000	0.0000
425	0.173194	0.2598	1.044	0.2598	3.1167	0.0000	0.0000
425.2	0.173285	0.2599	1.044	0.2599	3.1183	0.0000	0.0000
425.4	0.173376	0.2601	1.044	0.2601	3.1200	0.0000	0.0000
425.6	0.173468	0.2602	1.044	0.2602	3.1216	0.0000	0.0000
425.8	0.173559	0.2603	1.044	0.2603	3.1232	0.0000	0.0000
426	0.173651	0.2605	1.044	0.2605	3.1249	0.0000	0.0000
426.2	0.173742	0.2606	1.044	0.2606	3.1265	0.0000	0.0000
426.4	0.173834	0.2608	1.044	0.2608	3.1282	0.0000	0.0000
426.6	0.173925	0.2609	1.044	0.2609	3.1298	0.0000	0.0000
426.8	0.174017	0.2610	1.044	0.2610	3.1315	0.0000	0.0000
427	0.174108	0.2612	1.044	0.2612	3.1331	0.0000	0.0000
427.2	0.1742	0.2613	1.044	0.2613	3.1348	0.0000	0.0000
427.4	0.174291	0.2614	1.044	0.2614	3.1364	0.0000	0.0000
427.6	0.174383	0.2616	1.044	0.2616	3.1381	0.0000	0.0000
427.8	0.174474	0.2617	1.044	0.2617	3.1397	0.0000	0.0000
428	0.174566	0.2618	1.044	0.2618	3.1414	0.0000	0.0000
428.2	0.174657	0.2620	1.044	0.2620	3.1430	0.0000	0.0000
428.4	0.174749	0.2621	1.044	0.2621	3.1447	0.0000	0.0000
428.6	0.174841	0.2623	1.044	0.2623	3.1463	0.0000	0.0000
428.8	0.174932	0.2624	1.044	0.2624	3.1480	0.0000	0.0000
429	0.175024	0.2625	1.044	0.2625	3.1496	0.0000	0.0000
429.2	0.175115	0.2627	1.044	0.2627	3.1513	0.0000	0.0000
429.4	0.175207	0.2628	1.044	0.2628	3.1529	0.0000	0.0000
429.6	0.175299	0.2629	1.044	0.2629	3.1546	0.0000	0.0000
429.8	0.17539	0.2631	1.044	0.2631	3.1562	0.0000	0.0000
430	0.175482	0.2632	1.044	0.2632	3.1579	0.0000	0.0000
430.2	0.175574	0.2634	1.044	0.2634	3.1595	0.0000	0.0000
430.4	0.175666	0.2635	1.044	0.2635	3.1612	0.0000	0.0000
430.6	0.175757	0.2636	1.044	0.2636	3.1628	0.0000	0.0000
430.8	0.175849	0.2638	1.044	0.2638	3.1645	0.0000	0.0000

431	0.175941	0.2639	1.044	0.2639	3.1661	0.0000	0.0000
431.2	0.176032	0.2640	1.044	0.2640	3.1678	0.0000	0.0000
431.4	0.176124	0.2642	1.044	0.2642	3.1694	0.0000	0.0000
431.6	0.176216	0.2643	1.044	0.2643	3.1711	0.0000	0.0000
431.8	0.176308	0.2645	1.044	0.2645	3.1727	0.0000	0.0000
432	0.1764	0.2646	1.044	0.2646	3.1744	0.0000	0.0000
432.2	0.176491	0.2647	1.044	0.2647	3.1760	0.0000	0.0000
432.4	0.176583	0.2649	1.044	0.2649	3.1777	0.0000	0.0000
432.6	0.176675	0.2650	1.044	0.2650	3.1793	0.0000	0.0000
432.8	0.176767	0.2652	1.044	0.2652	3.1810	0.0000	0.0000
433	0.176859	0.2653	1.044	0.2653	3.1826	0.0000	0.0000
433.2	0.176951	0.2654	1.044	0.2654	3.1843	0.0000	0.0000
433.4	0.177043	0.2656	1.044	0.2656	3.1859	0.0000	0.0000
433.6	0.177134	0.2657	1.044	0.2657	3.1876	0.0000	0.0000
433.8	0.177226	0.2658	1.044	0.2658	3.1892	0.0000	0.0000
434	0.177318	0.2660	1.044	0.2660	3.1909	0.0000	0.0000
434.2	0.17741	0.2661	1.044	0.2661	3.1926	0.0000	0.0000
434.4	0.177502	0.2663	1.044	0.2663	3.1942	0.0000	0.0000
434.6	0.177594	0.2664	1.044	0.2664	3.1959	0.0000	0.0000
434.8	0.177686	0.2665	1.044	0.2665	3.1975	0.0000	0.0000
435	0.177778	0.2667	1.044	0.2667	3.1992	0.0000	0.0000
435.2	0.17787	0.2668	1.044	0.2668	3.2008	0.0000	0.0000
435.4	0.177962	0.2669	1.044	0.2669	3.2025	0.0000	0.0000
435.6	0.178054	0.2671	1.044	0.2671	3.2041	0.0000	0.0000
435.8	0.178146	0.2672	1.044	0.2672	3.2058	0.0000	0.0000
436	0.178238	0.2674	1.044	0.2674	3.2075	0.0000	0.0000
436.2	0.17833	0.2675	1.044	0.2675	3.2091	0.0000	0.0000
436.4	0.178422	0.2676	1.044	0.2676	3.2108	0.0000	0.0000
436.6	0.178514	0.2678	1.044	0.2678	3.2124	0.0000	0.0000
436.8	0.178606	0.2679	1.044	0.2679	3.2141	0.0000	0.0000
437	0.178699	0.2680	1.044	0.2680	3.2157	0.0000	0.0000
437.2	0.178791	0.2682	1.044	0.2682	3.2174	0.0000	0.0000
437.4	0.178883	0.2683	1.044	0.2683	3.2191	0.0000	0.0000
437.6	0.178975	0.2685	1.044	0.2685	3.2207	0.0000	0.0000
437.8	0.179067	0.2686	1.044	0.2686	3.2224	0.0000	0.0000
438	0.179159	0.2687	1.044	0.2687	3.2240	0.0000	0.0000
438.2	0.179251	0.2689	1.044	0.2689	3.2257	0.0000	0.0000
438.4	0.179344	0.2690	1.044	0.2690	3.2274	0.0000	0.0000
438.6	0.179436	0.2692	1.044	0.2692	3.2290	0.0000	0.0000
438.8	0.179528	0.2693	1.044	0.2693	3.2307	0.0000	0.0000
439	0.17962	0.2694	1.044	0.2694	3.2323	0.0000	0.0000
439.2	0.179712	0.2696	1.044	0.2696	3.2340	0.0000	0.0000
439.4	0.179805	0.2697	1.044	0.2697	3.2357	0.0000	0.0000
439.6	0.179897	0.2698	1.044	0.2698	3.2373	0.0000	0.0000
439.8	0.179989	0.2700	1.044	0.2700	3.2390	0.0000	0.0000
440	0.180082	0.2701	1.044	0.2701	3.2406	0.0000	0.0000
440.2	0.180174	0.2703	1.044	0.2703	3.2423	0.0000	0.0000

440.4	0.180266	0.2704	1.044	0.2704	3.2440	0.0000	0.0000
440.6	0.180358	0.2705	1.044	0.2705	3.2456	0.0000	0.0000
440.8	0.180451	0.2707	1.044	0.2707	3.2473	0.0000	0.0000
441	0.180543	0.2708	1.044	0.2708	3.2489	0.0000	0.0000
441.2	0.180636	0.2710	1.044	0.2710	3.2506	0.0000	0.0000
441.4	0.180728	0.2711	1.044	0.2711	3.2523	0.0000	0.0000
441.6	0.18082	0.2712	1.044	0.2712	3.2539	0.0000	0.0000
441.8	0.180913	0.2714	1.044	0.2714	3.2556	0.0000	0.0000
442	0.181005	0.2715	1.044	0.2715	3.2573	0.0000	0.0000
442.2	0.181097	0.2716	1.044	0.2716	3.2589	0.0000	0.0000
442.4	0.18119	0.2718	1.044	0.2718	3.2606	0.0000	0.0000
442.6	0.181282	0.2719	1.044	0.2719	3.2623	0.0000	0.0000
442.8	0.181375	0.2721	1.044	0.2721	3.2639	0.0000	0.0000
443	0.181467	0.2722	1.044	0.2722	3.2656	0.0000	0.0000
443.2	0.18156	0.2723	1.044	0.2723	3.2672	0.0000	0.0000
443.4	0.181652	0.2725	1.044	0.2725	3.2689	0.0000	0.0000
443.6	0.181745	0.2726	1.044	0.2726	3.2706	0.0000	0.0000
443.8	0.181837	0.2728	1.044	0.2728	3.2722	0.0000	0.0000
444	0.18193	0.2729	1.044	0.2729	3.2739	0.0000	0.0000
444.2	0.182022	0.2730	1.044	0.2730	3.2756	0.0000	0.0000
444.4	0.182115	0.2732	1.044	0.2732	3.2772	0.0000	0.0000
444.6	0.182207	0.2733	1.044	0.2733	3.2789	0.0000	0.0000
444.8	0.1823	0.2735	1.044	0.2735	3.2806	0.0000	0.0000
445	0.182393	0.2736	1.044	0.2736	3.2822	0.0000	0.0000
445.2	0.182485	0.2737	1.044	0.2737	3.2839	0.0000	0.0000
445.4	0.182578	0.2739	1.044	0.2739	3.2856	0.0000	0.0000
445.6	0.18267	0.2740	1.044	0.2740	3.2872	0.0000	0.0000
445.8	0.182763	0.2741	1.044	0.2741	3.2889	0.0000	0.0000
446	0.182856	0.2743	1.044	0.2743	3.2906	0.0000	0.0000
446.2	0.182948	0.2744	1.044	0.2744	3.2922	0.0000	0.0000
446.4	0.183041	0.2746	1.044	0.2746	3.2939	0.0000	0.0000
446.6	0.183134	0.2747	1.044	0.2747	3.2956	0.0000	0.0000
446.8	0.183227	0.2748	1.044	0.2748	3.2972	0.0000	0.0000
447	0.183319	0.2750	1.044	0.2750	3.2989	0.0000	0.0000
447.2	0.183412	0.2751	1.044	0.2751	3.3006	0.0000	0.0000
447.4	0.183505	0.2753	1.044	0.2753	3.3022	0.0000	0.0000
447.6	0.183597	0.2754	1.044	0.2754	3.3039	0.0000	0.0000
447.8	0.18369	0.2755	1.044	0.2755	3.3056	0.0000	0.0000
448	0.183783	0.2757	1.044	0.2757	3.3073	0.0000	0.0000
448.2	0.183876	0.2758	1.044	0.2758	3.3089	0.0000	0.0000
448.4	0.183969	0.2760	1.044	0.2760	3.3106	0.0000	0.0000
448.6	0.184061	0.2761	1.044	0.2761	3.3123	0.0000	0.0000
448.8	0.184154	0.2762	1.044	0.2762	3.3139	0.0000	0.0000
449	0.184247	0.2764	1.044	0.2764	3.3156	0.0000	0.0000
449.2	0.18434	0.2765	1.044	0.2765	3.3173	0.0000	0.0000
449.4	0.184433	0.2766	1.044	0.2766	3.3190	0.0000	0.0000
449.6	0.184526	0.2768	1.044	0.2768	3.3206	0.0000	0.0000

449.8	0.184619	0.2769	1.044	0.2769	3.3223	0.0000	0.0000
450	0.184711	0.2771	1.044	0.2771	3.3240	0.0000	0.0000
450.2	0.184804	0.2772	1.044	0.2772	3.3256	0.0000	0.0000
450.4	0.184897	0.2773	1.044	0.2773	3.3273	0.0000	0.0000
450.6	0.18499	0.2775	1.044	0.2775	3.3290	0.0000	0.0000
450.8	0.185083	0.2776	1.044	0.2776	3.3307	0.0000	0.0000
451	0.185176	0.2778	1.044	0.2778	3.3323	0.0000	0.0000
451.2	0.185269	0.2779	1.044	0.2779	3.3340	0.0000	0.0000
451.4	0.185362	0.2780	1.044	0.2780	3.3357	0.0000	0.0000
451.6	0.185455	0.2782	1.044	0.2782	3.3374	0.0000	0.0000
451.8	0.185548	0.2783	1.044	0.2783	3.3390	0.0000	0.0000
452	0.185641	0.2785	1.044	0.2785	3.3407	0.0000	0.0000
452.2	0.185734	0.2786	1.044	0.2786	3.3424	0.0000	0.0000
452.4	0.185827	0.2787	1.044	0.2787	3.3441	0.0000	0.0000
452.6	0.18592	0.2789	1.044	0.2789	3.3457	0.0000	0.0000
452.8	0.186013	0.2790	1.044	0.2790	3.3474	0.0000	0.0000
453	0.186106	0.2792	1.044	0.2792	3.3491	0.0000	0.0000
453.2	0.1862	0.2793	1.044	0.2793	3.3508	0.0000	0.0000
453.4	0.186293	0.2794	1.044	0.2794	3.3524	0.0000	0.0000
453.6	0.186386	0.2796	1.044	0.2796	3.3541	0.0000	0.0000
453.8	0.186479	0.2797	1.044	0.2797	3.3558	0.0000	0.0000
454	0.186572	0.2799	1.044	0.2799	3.3575	0.0000	0.0000
454.2	0.186665	0.2800	1.044	0.2800	3.3591	0.0000	0.0000
454.4	0.186758	0.2801	1.044	0.2801	3.3608	0.0000	0.0000
454.6	0.186852	0.2803	1.044	0.2803	3.3625	0.0000	0.0000
454.8	0.186945	0.2804	1.044	0.2804	3.3642	0.0000	0.0000
455	0.187038	0.2806	1.044	0.2806	3.3658	0.0000	0.0000
455.2	0.187131	0.2807	1.044	0.2807	3.3675	0.0000	0.0000
455.4	0.187224	0.2808	1.044	0.2808	3.3692	0.0000	0.0000
455.6	0.187318	0.2810	1.044	0.2810	3.3709	0.0000	0.0000
455.8	0.187411	0.2811	1.044	0.2811	3.3726	0.0000	0.0000
456	0.187504	0.2813	1.044	0.2813	3.3742	0.0000	0.0000
456.2	0.187598	0.2814	1.044	0.2814	3.3759	0.0000	0.0000
456.4	0.187691	0.2815	1.044	0.2815	3.3776	0.0000	0.0000
456.6	0.187784	0.2817	1.044	0.2817	3.3793	0.0000	0.0000
456.8	0.187877	0.2818	1.044	0.2818	3.3810	0.0000	0.0000
457	0.187971	0.2820	1.044	0.2820	3.3826	0.0000	0.0000
457.2	0.188064	0.2821	1.044	0.2821	3.3843	0.0000	0.0000
457.4	0.188158	0.2822	1.044	0.2822	3.3860	0.0000	0.0000
457.6	0.188251	0.2824	1.044	0.2824	3.3877	0.0000	0.0000
457.8	0.188344	0.2825	1.044	0.2825	3.3894	0.0000	0.0000
458	0.188438	0.2827	1.044	0.2827	3.3910	0.0000	0.0000
458.2	0.188531	0.2828	1.044	0.2828	3.3927	0.0000	0.0000
458.4	0.188625	0.2829	1.044	0.2829	3.3944	0.0000	0.0000
458.6	0.188718	0.2831	1.044	0.2831	3.3961	0.0000	0.0000
458.8	0.188811	0.2832	1.044	0.2832	3.3978	0.0000	0.0000
459	0.188905	0.2834	1.044	0.2834	3.3994	0.0000	0.0000

459.2	0.188998	0.2835	1.044	0.2835	3.4011	0.0000	0.0000
459.4	0.189092	0.2836	1.044	0.2836	3.4028	0.0000	0.0000
459.6	0.189185	0.2838	1.044	0.2838	3.4045	0.0000	0.0000
459.8	0.189279	0.2839	1.044	0.2839	3.4062	0.0000	0.0000
460	0.189372	0.2841	1.044	0.2841	3.4079	0.0000	0.0000
460.2	0.189466	0.2842	1.044	0.2842	3.4095	0.0000	0.0000
460.4	0.18956	0.2843	1.044	0.2843	3.4112	0.0000	0.0000
460.6	0.189653	0.2845	1.044	0.2845	3.4129	0.0000	0.0000
460.8	0.189747	0.2846	1.044	0.2846	3.4146	0.0000	0.0000
461	0.18984	0.2848	1.044	0.2848	3.4163	0.0000	0.0000
461.2	0.189934	0.2849	1.044	0.2849	3.4180	0.0000	0.0000
461.4	0.190027	0.2850	1.044	0.2850	3.4197	0.0000	0.0000
461.6	0.190121	0.2852	1.044	0.2852	3.4213	0.0000	0.0000
461.8	0.190215	0.2853	1.044	0.2853	3.4230	0.0000	0.0000
462	0.190308	0.2855	1.044	0.2855	3.4247	0.0000	0.0000
462.2	0.190402	0.2856	1.044	0.2856	3.4264	0.0000	0.0000
462.4	0.190496	0.2857	1.044	0.2857	3.4281	0.0000	0.0000
462.6	0.190589	0.2859	1.044	0.2859	3.4298	0.0000	0.0000
462.8	0.190683	0.2860	1.044	0.2860	3.4315	0.0000	0.0000
463	0.190777	0.2862	1.044	0.2862	3.4331	0.0000	0.0000
463.2	0.190871	0.2863	1.044	0.2863	3.4348	0.0000	0.0000
463.4	0.190964	0.2864	1.044	0.2864	3.4365	0.0000	0.0000
463.6	0.191058	0.2866	1.044	0.2866	3.4382	0.0000	0.0000
463.8	0.191152	0.2867	1.044	0.2867	3.4399	0.0000	0.0000
464	0.191246	0.2869	1.044	0.2869	3.4416	0.0000	0.0000
464.2	0.191339	0.2870	1.044	0.2870	3.4433	0.0000	0.0000
464.4	0.191433	0.2871	1.044	0.2871	3.4450	0.0000	0.0000
464.6	0.191527	0.2873	1.044	0.2873	3.4466	0.0000	0.0000
464.8	0.191621	0.2874	1.044	0.2874	3.4483	0.0000	0.0000
465	0.191715	0.2876	1.044	0.2876	3.4500	0.0000	0.0000
465.2	0.191809	0.2877	1.044	0.2877	3.4517	0.0000	0.0000
465.4	0.191903	0.2879	1.044	0.2879	3.4534	0.0000	0.0000
465.6	0.191996	0.2880	1.044	0.2880	3.4551	0.0000	0.0000
465.8	0.19209	0.2881	1.044	0.2881	3.4568	0.0000	0.0000
466	0.192184	0.2883	1.044	0.2883	3.4585	0.0000	0.0000
466.2	0.192278	0.2884	1.044	0.2884	3.4602	0.0000	0.0000
466.4	0.192372	0.2886	1.044	0.2886	3.4619	0.0000	0.0000
466.6	0.192466	0.2887	1.044	0.2887	3.4635	0.0000	0.0000
466.8	0.19256	0.2888	1.044	0.2888	3.4652	0.0000	0.0000
467	0.192654	0.2890	1.044	0.2890	3.4669	0.0000	0.0000
467.2	0.192748	0.2891	1.044	0.2891	3.4686	0.0000	0.0000
467.4	0.192842	0.2893	1.044	0.2893	3.4703	0.0000	0.0000
467.6	0.192936	0.2894	1.044	0.2894	3.4720	0.0000	0.0000
467.8	0.19303	0.2895	1.044	0.2895	3.4737	0.0000	0.0000
468	0.193124	0.2897	1.044	0.2897	3.4754	0.0000	0.0000
468.2	0.193218	0.2898	1.044	0.2898	3.4771	0.0000	0.0000
468.4	0.193312	0.2900	1.044	0.2900	3.4788	0.0000	0.0000

468.6	0.193406	0.2901	1.044	0.2901	3.4805	0.0000	0.0000
468.8	0.1935	0.2903	1.044	0.2903	3.4822	0.0000	0.0000
469	0.193594	0.2904	1.044	0.2904	3.4839	0.0000	0.0000
469.2	0.193689	0.2905	1.044	0.2905	3.4855	0.0000	0.0000
469.4	0.193783	0.2907	1.044	0.2907	3.4872	0.0000	0.0000
469.6	0.193877	0.2908	1.044	0.2908	3.4889	0.0000	0.0000
469.8	0.193971	0.2910	1.044	0.2910	3.4906	0.0000	0.0000
470	0.194065	0.2911	1.044	0.2911	3.4923	0.0000	0.0000
470.2	0.194159	0.2912	1.044	0.2912	3.4940	0.0000	0.0000
470.4	0.194254	0.2914	1.044	0.2914	3.4957	0.0000	0.0000
470.6	0.194348	0.2915	1.044	0.2915	3.4974	0.0000	0.0000
470.8	0.194442	0.2917	1.044	0.2917	3.4991	0.0000	0.0000
471	0.194536	0.2918	1.044	0.2918	3.5008	0.0000	0.0000
471.2	0.194631	0.2919	1.044	0.2919	3.5025	0.0000	0.0000
471.4	0.194725	0.2921	1.044	0.2921	3.5042	0.0000	0.0000
471.6	0.194819	0.2922	1.044	0.2922	3.5059	0.0000	0.0000
471.8	0.194913	0.2924	1.044	0.2924	3.5076	0.0000	0.0000
472	0.195008	0.2925	1.044	0.2925	3.5093	0.0000	0.0000
472.2	0.195102	0.2927	1.044	0.2927	3.5110	0.0000	0.0000
472.4	0.195196	0.2928	1.044	0.2928	3.5127	0.0000	0.0000
472.6	0.195291	0.2929	1.044	0.2929	3.5144	0.0000	0.0000
472.8	0.195385	0.2931	1.044	0.2931	3.5161	0.0000	0.0000
473	0.195479	0.2932	1.044	0.2932	3.5178	0.0000	0.0000
473.2	0.195574	0.2934	1.044	0.2934	3.5195	0.0000	0.0000
473.4	0.195668	0.2935	1.044	0.2935	3.5212	0.0000	0.0000
473.6	0.195763	0.2936	1.044	0.2936	3.5229	0.0000	0.0000
473.8	0.195857	0.2938	1.044	0.2938	3.5246	0.0000	0.0000
474	0.195951	0.2939	1.044	0.2939	3.5263	0.0000	0.0000
474.2	0.196046	0.2941	1.044	0.2941	3.5280	0.0000	0.0000
474.4	0.19614	0.2942	1.044	0.2942	3.5297	0.0000	0.0000
474.6	0.196235	0.2944	1.044	0.2944	3.5314	0.0000	0.0000
474.8	0.196329	0.2945	1.044	0.2945	3.5331	0.0000	0.0000
475	0.196424	0.2946	1.044	0.2946	3.5348	0.0000	0.0000
475.2	0.196518	0.2948	1.044	0.2948	3.5365	0.0000	0.0000
475.4	0.196613	0.2949	1.044	0.2949	3.5382	0.0000	0.0000
475.6	0.196707	0.2951	1.044	0.2951	3.5399	0.0000	0.0000
475.8	0.196802	0.2952	1.044	0.2952	3.5416	0.0000	0.0000
476	0.196896	0.2953	1.044	0.2953	3.5433	0.0000	0.0000
476.2	0.196991	0.2955	1.044	0.2955	3.5450	0.0000	0.0000
476.4	0.197086	0.2956	1.044	0.2956	3.5467	0.0000	0.0000
476.6	0.19718	0.2958	1.044	0.2958	3.5484	0.0000	0.0000
476.8	0.197275	0.2959	1.044	0.2959	3.5501	0.0000	0.0000
477	0.197369	0.2961	1.044	0.2961	3.5518	0.0000	0.0000
477.2	0.197464	0.2962	1.044	0.2962	3.5535	0.0000	0.0000
477.4	0.197559	0.2963	1.044	0.2963	3.5552	0.0000	0.0000
477.6	0.197653	0.2965	1.044	0.2965	3.5569	0.0000	0.0000
477.8	0.197748	0.2966	1.044	0.2966	3.5586	0.0000	0.0000

478	0.197843	0.2968	1.044	0.2968	3.5603	0.0000	0.0000
478.2	0.197937	0.2969	1.044	0.2969	3.5620	0.0000	0.0000
478.4	0.198032	0.2970	1.044	0.2970	3.5637	0.0000	0.0000
478.6	0.198127	0.2972	1.044	0.2972	3.5654	0.0000	0.0000
478.8	0.198222	0.2973	1.044	0.2973	3.5671	0.0000	0.0000
479	0.198316	0.2975	1.044	0.2975	3.5688	0.0000	0.0000
479.2	0.198411	0.2976	1.044	0.2976	3.5705	0.0000	0.0000
479.4	0.198506	0.2978	1.044	0.2978	3.5723	0.0000	0.0000
479.6	0.198601	0.2979	1.044	0.2979	3.5740	0.0000	0.0000
479.8	0.198696	0.2980	1.044	0.2980	3.5757	0.0000	0.0000
480	0.19879	0.2982	1.044	0.2982	3.5774	0.0000	0.0000
480.2	0.198885	0.2983	1.044	0.2983	3.5791	0.0000	0.0000
480.4	0.19898	0.2985	1.044	0.2985	3.5808	0.0000	0.0000
480.6	0.199075	0.2986	1.044	0.2986	3.5825	0.0000	0.0000
480.8	0.19917	0.2988	1.044	0.2988	3.5842	0.0000	0.0000
481	0.199265	0.2989	1.044	0.2989	3.5859	0.0000	0.0000
481.2	0.19936	0.2990	1.044	0.2990	3.5876	0.0000	0.0000
481.4	0.199455	0.2992	1.044	0.2992	3.5893	0.0000	0.0000
481.6	0.19955	0.2993	1.044	0.2993	3.5910	0.0000	0.0000
481.8	0.199644	0.2995	1.044	0.2995	3.5927	0.0000	0.0000
482	0.199739	0.2996	1.044	0.2996	3.5945	0.0000	0.0000
482.2	0.199834	0.2998	1.044	0.2998	3.5962	0.0000	0.0000
482.4	0.199929	0.2999	1.044	0.2999	3.5979	0.0000	0.0000
482.6	0.200024	0.3000	1.044	0.3000	3.5996	0.0000	0.0000
482.8	0.200119	0.3002	1.044	0.3002	3.6013	0.0000	0.0000
483	0.200214	0.3003	1.044	0.3003	3.6030	0.0000	0.0000
483.2	0.200309	0.3005	1.044	0.3005	3.6047	0.0000	0.0000
483.4	0.200405	0.3006	1.044	0.3006	3.6064	0.0000	0.0000
483.6	0.2005	0.3007	1.044	0.3007	3.6081	0.0000	0.0000
483.8	0.200595	0.3009	1.044	0.3009	3.6098	0.0000	0.0000
484	0.20069	0.3010	1.044	0.3010	3.6116	0.0000	0.0000
484.2	0.200785	0.3012	1.044	0.3012	3.6133	0.0000	0.0000
484.4	0.20088	0.3013	1.044	0.3013	3.6150	0.0000	0.0000
484.6	0.200975	0.3015	1.044	0.3015	3.6167	0.0000	0.0000
484.8	0.20107	0.3016	1.044	0.3016	3.6184	0.0000	0.0000
485	0.201165	0.3017	1.044	0.3017	3.6201	0.0000	0.0000
485.2	0.201261	0.3019	1.044	0.3019	3.6218	0.0000	0.0000
485.4	0.201356	0.3020	1.044	0.3020	3.6235	0.0000	0.0000
485.6	0.201451	0.3022	1.044	0.3022	3.6253	0.0000	0.0000
485.8	0.201546	0.3023	1.044	0.3023	3.6270	0.0000	0.0000
486	0.201641	0.3025	1.044	0.3025	3.6287	0.0000	0.0000
486.2	0.201737	0.3026	1.044	0.3026	3.6304	0.0000	0.0000
486.4	0.201832	0.3027	1.044	0.3027	3.6321	0.0000	0.0000
486.6	0.201927	0.3029	1.044	0.3029	3.6338	0.0000	0.0000
486.8	0.202022	0.3030	1.044	0.3030	3.6355	0.0000	0.0000
487	0.202118	0.3032	1.044	0.3032	3.6373	0.0000	0.0000
487.2	0.202213	0.3033	1.044	0.3033	3.6390	0.0000	0.0000

487.4	0.202308	0.3035	1.044	0.3035	3.6407	0.0000	0.0000
487.6	0.202404	0.3036	1.044	0.3036	3.6424	0.0000	0.0000
487.8	0.202499	0.3037	1.044	0.3037	3.6441	0.0000	0.0000
488	0.202594	0.3039	1.044	0.3039	3.6458	0.0000	0.0000
488.2	0.20269	0.3040	1.044	0.3040	3.6476	0.0000	0.0000
488.4	0.202785	0.3042	1.044	0.3042	3.6493	0.0000	0.0000
488.6	0.202881	0.3043	1.044	0.3043	3.6510	0.0000	0.0000
488.8	0.202976	0.3045	1.044	0.3045	3.6527	0.0000	0.0000
489	0.203071	0.3046	1.044	0.3046	3.6544	0.0000	0.0000
489.2	0.203167	0.3048	1.044	0.3048	3.6561	0.0000	0.0000
489.4	0.203262	0.3049	1.044	0.3049	3.6579	0.0000	0.0000
489.6	0.203358	0.3050	1.044	0.3050	3.6596	0.0000	0.0000
489.8	0.203453	0.3052	1.044	0.3052	3.6613	0.0000	0.0000
490	0.203549	0.3053	1.044	0.3053	3.6630	0.0000	0.0000
490.2	0.203644	0.3055	1.044	0.3055	3.6647	0.0000	0.0000
490.4	0.20374	0.3056	1.044	0.3056	3.6665	0.0000	0.0000
490.6	0.203835	0.3058	1.044	0.3058	3.6682	0.0000	0.0000
490.8	0.203931	0.3059	1.044	0.3059	3.6699	0.0000	0.0000
491	0.204027	0.3060	1.044	0.3060	3.6716	0.0000	0.0000
491.2	0.204122	0.3062	1.044	0.3062	3.6733	0.0000	0.0000
491.4	0.204218	0.3063	1.044	0.3063	3.6751	0.0000	0.0000
491.6	0.204313	0.3065	1.044	0.3065	3.6768	0.0000	0.0000
491.8	0.204409	0.3066	1.044	0.3066	3.6785	0.0000	0.0000
492	0.204505	0.3068	1.044	0.3068	3.6802	0.0000	0.0000
492.2	0.2046	0.3069	1.044	0.3069	3.6819	0.0000	0.0000
492.4	0.204696	0.3070	1.044	0.3070	3.6837	0.0000	0.0000
492.6	0.204792	0.3072	1.044	0.3072	3.6854	0.0000	0.0000
492.8	0.204887	0.3073	1.044	0.3073	3.6871	0.0000	0.0000
493	0.204983	0.3075	1.044	0.3075	3.6888	0.0000	0.0000
493.2	0.205079	0.3076	1.044	0.3076	3.6906	0.0000	0.0000
493.4	0.205174	0.3078	1.044	0.3078	3.6923	0.0000	0.0000
493.6	0.20527	0.3079	1.044	0.3079	3.6940	0.0000	0.0000
493.8	0.205366	0.3080	1.044	0.3080	3.6957	0.0000	0.0000
494	0.205462	0.3082	1.044	0.3082	3.6974	0.0000	0.0000
494.2	0.205557	0.3083	1.044	0.3083	3.6992	0.0000	0.0000
494.4	0.205653	0.3085	1.044	0.3085	3.7009	0.0000	0.0000
494.6	0.205749	0.3086	1.044	0.3086	3.7026	0.0000	0.0000
494.8	0.205845	0.3088	1.044	0.3088	3.7043	0.0000	0.0000
495	0.205941	0.3089	1.044	0.3089	3.7061	0.0000	0.0000
495.2	0.206037	0.3091	1.044	0.3091	3.7078	0.0000	0.0000
495.4	0.206132	0.3092	1.044	0.3092	3.7095	0.0000	0.0000
495.6	0.206228	0.3093	1.044	0.3093	3.7112	0.0000	0.0000
495.8	0.206324	0.3095	1.044	0.3095	3.7130	0.0000	0.0000
496	0.20642	0.3096	1.044	0.3096	3.7147	0.0000	0.0000
496.2	0.206516	0.3098	1.044	0.3098	3.7164	0.0000	0.0000
496.4	0.206612	0.3099	1.044	0.3099	3.7182	0.0000	0.0000
496.6	0.206708	0.3101	1.044	0.3101	3.7199	0.0000	0.0000

496.8	0.206804	0.3102	1.044	0.3102	3.7216	0.0000	0.0000
497	0.2069	0.3103	1.044	0.3103	3.7233	0.0000	0.0000
497.2	0.206996	0.3105	1.044	0.3105	3.7251	0.0000	0.0000
497.4	0.207092	0.3106	1.044	0.3106	3.7268	0.0000	0.0000
497.6	0.207188	0.3108	1.044	0.3108	3.7285	0.0000	0.0000
497.8	0.207284	0.3109	1.044	0.3109	3.7302	0.0000	0.0000
498	0.20738	0.3111	1.044	0.3111	3.7320	0.0000	0.0000
498.2	0.207476	0.3112	1.044	0.3112	3.7337	0.0000	0.0000
498.4	0.207572	0.3114	1.044	0.3114	3.7354	0.0000	0.0000
498.6	0.207668	0.3115	1.044	0.3115	3.7372	0.0000	0.0000
498.8	0.207764	0.3116	1.044	0.3116	3.7389	0.0000	0.0000
499	0.20786	0.3118	1.044	0.3118	3.7406	0.0000	0.0000
499.2	0.207956	0.3119	1.044	0.3119	3.7424	0.0000	0.0000
499.4	0.208053	0.3121	1.044	0.3121	3.7441	0.0000	0.0000
499.6	0.208149	0.3122	1.044	0.3122	3.7458	0.0000	0.0000
499.8	0.208245	0.3124	1.044	0.3124	3.7475	0.0000	0.0000
500	0.208341	0.3125	1.044	0.3125	3.7493	0.0000	0.0000
500.2	0.208437	0.3127	1.044	0.3127	3.7510	0.0000	0.0000
500.4	0.208534	0.3128	1.044	0.3128	3.7527	0.0000	0.0000
500.6	0.20863	0.3129	1.044	0.3129	3.7545	0.0000	0.0000
500.8	0.208726	0.3131	1.044	0.3131	3.7562	0.0000	0.0000
501	0.208822	0.3132	1.044	0.3132	3.7579	0.0000	0.0000
501.2	0.208918	0.3134	1.044	0.3134	3.7597	0.0000	0.0000
501.4	0.209015	0.3135	1.044	0.3135	3.7614	0.0000	0.0000
501.6	0.209111	0.3137	1.044	0.3137	3.7631	0.0000	0.0000
501.8	0.209207	0.3138	1.044	0.3138	3.7649	0.0000	0.0000
502	0.209304	0.3140	1.044	0.3140	3.7666	0.0000	0.0000
502.2	0.2094	0.3141	1.044	0.3141	3.7683	0.0000	0.0000
502.4	0.209496	0.3142	1.044	0.3142	3.7701	0.0000	0.0000
502.6	0.209593	0.3144	1.044	0.3144	3.7718	0.0000	0.0000
502.8	0.209689	0.3145	1.044	0.3145	3.7735	0.0000	0.0000
503	0.209786	0.3147	1.044	0.3147	3.7753	0.0000	0.0000
503.2	0.209882	0.3148	1.044	0.3148	3.7770	0.0000	0.0000
503.4	0.209978	0.3150	1.044	0.3150	3.7787	0.0000	0.0000
503.6	0.210075	0.3151	1.044	0.3151	3.7805	0.0000	0.0000
503.8	0.210171	0.3153	1.044	0.3153	3.7822	0.0000	0.0000
504	0.210268	0.3154	1.044	0.3154	3.7840	0.0000	0.0000
504.2	0.210364	0.3155	1.044	0.3155	3.7857	0.0000	0.0000
504.4	0.210461	0.3157	1.044	0.3157	3.7874	0.0000	0.0000
504.6	0.210557	0.3158	1.044	0.3158	3.7892	0.0000	0.0000
504.8	0.210654	0.3160	1.044	0.3160	3.7909	0.0000	0.0000
505	0.21075	0.3161	1.044	0.3161	3.7926	0.0000	0.0000
505.2	0.210847	0.3163	1.044	0.3163	3.7944	0.0000	0.0000
505.4	0.210943	0.3164	1.044	0.3164	3.7961	0.0000	0.0000
505.6	0.21104	0.3166	1.044	0.3166	3.7978	0.0000	0.0000
505.8	0.211136	0.3167	1.044	0.3167	3.7996	0.0000	0.0000
506	0.211233	0.3168	1.044	0.3168	3.8013	0.0000	0.0000

506.2	0.21133	0.3170	1.044	0.3170	3.8031	0.0000	0.0000
506.4	0.211426	0.3171	1.044	0.3171	3.8048	0.0000	0.0000
506.6	0.211523	0.3173	1.044	0.3173	3.8065	0.0000	0.0000
506.8	0.21162	0.3174	1.044	0.3174	3.8083	0.0000	0.0000
507	0.211716	0.3176	1.044	0.3176	3.8100	0.0000	0.0000
507.2	0.211813	0.3177	1.044	0.3177	3.8118	0.0000	0.0000
507.4	0.21191	0.3179	1.044	0.3179	3.8135	0.0000	0.0000
507.6	0.212006	0.3180	1.044	0.3180	3.8152	0.0000	0.0000
507.8	0.212103	0.3182	1.044	0.3182	3.8170	0.0000	0.0000
508	0.2122	0.3183	1.044	0.3183	3.8187	0.0000	0.0000
508.2	0.212297	0.3184	1.044	0.3184	3.8205	0.0000	0.0000
508.4	0.212393	0.3186	1.044	0.3186	3.8222	0.0000	0.0000
508.6	0.21249	0.3187	1.044	0.3187	3.8240	0.0000	0.0000
508.8	0.212587	0.3189	1.044	0.3189	3.8257	0.0000	0.0000
509	0.212684	0.3190	1.044	0.3190	3.8274	0.0000	0.0000
509.2	0.212781	0.3192	1.044	0.3192	3.8292	0.0000	0.0000
509.4	0.212877	0.3193	1.044	0.3193	3.8309	0.0000	0.0000
509.6	0.212974	0.3195	1.044	0.3195	3.8327	0.0000	0.0000
509.8	0.213071	0.3196	1.044	0.3196	3.8344	0.0000	0.0000
510	0.213168	0.3198	1.044	0.3198	3.8362	0.0000	0.0000
510.2	0.213265	0.3199	1.044	0.3199	3.8379	0.0000	0.0000
510.4	0.213362	0.3200	1.044	0.3200	3.8396	0.0000	0.0000
510.6	0.213459	0.3202	1.044	0.3202	3.8414	0.0000	0.0000
510.8	0.213556	0.3203	1.044	0.3203	3.8431	0.0000	0.0000
511	0.213653	0.3205	1.044	0.3205	3.8449	0.0000	0.0000
511.2	0.21375	0.3206	1.044	0.3206	3.8466	0.0000	0.0000
511.4	0.213847	0.3208	1.044	0.3208	3.8484	0.0000	0.0000
511.6	0.213944	0.3209	1.044	0.3209	3.8501	0.0000	0.0000
511.8	0.214041	0.3211	1.044	0.3211	3.8519	0.0000	0.0000
512	0.214138	0.3212	1.044	0.3212	3.8536	0.0000	0.0000
512.2	0.214235	0.3214	1.044	0.3214	3.8554	0.0000	0.0000
512.4	0.214332	0.3215	1.044	0.3215	3.8571	0.0000	0.0000
512.6	0.214429	0.3216	1.044	0.3216	3.8588	0.0000	0.0000
512.8	0.214526	0.3218	1.044	0.3218	3.8606	0.0000	0.0000
513	0.214623	0.3219	1.044	0.3219	3.8623	0.0000	0.0000
513.2	0.21472	0.3221	1.044	0.3221	3.8641	0.0000	0.0000
513.4	0.214817	0.3222	1.044	0.3222	3.8658	0.0000	0.0000
513.6	0.214914	0.3224	1.044	0.3224	3.8676	0.0000	0.0000
513.8	0.215012	0.3225	1.044	0.3225	3.8693	0.0000	0.0000
514	0.215109	0.3227	1.044	0.3227	3.8711	0.0000	0.0000
514.2	0.215206	0.3228	1.044	0.3228	3.8728	0.0000	0.0000
514.4	0.215303	0.3230	1.044	0.3230	3.8746	0.0000	0.0000
514.6	0.2154	0.3231	1.044	0.3231	3.8763	0.0000	0.0000
514.8	0.215498	0.3232	1.044	0.3232	3.8781	0.0000	0.0000
515	0.215595	0.3234	1.044	0.3234	3.8798	0.0000	0.0000
515.2	0.215692	0.3235	1.044	0.3235	3.8816	0.0000	0.0000
515.4	0.215789	0.3237	1.044	0.3237	3.8833	0.0000	0.0000

515.6	0.215887	0.3238	1.044	0.3238	3.8851	0.0000	0.0000
515.8	0.215984	0.3240	1.044	0.3240	3.8868	0.0000	0.0000
516	0.216081	0.3241	1.044	0.3241	3.8886	0.0000	0.0000
516.2	0.216179	0.3243	1.044	0.3243	3.8903	0.0000	0.0000
516.4	0.216276	0.3244	1.044	0.3244	3.8921	0.0000	0.0000
516.6	0.216373	0.3246	1.044	0.3246	3.8938	0.0000	0.0000
516.8	0.216471	0.3247	1.044	0.3247	3.8956	0.0000	0.0000
517	0.216568	0.3249	1.044	0.3249	3.8973	0.0000	0.0000
517.2	0.216665	0.3250	1.044	0.3250	3.8991	0.0000	0.0000
517.4	0.216763	0.3251	1.044	0.3251	3.9009	0.0000	0.0000
517.6	0.21686	0.3253	1.044	0.3253	3.9026	0.0000	0.0000
517.8	0.216958	0.3254	1.044	0.3254	3.9044	0.0000	0.0000
518	0.217055	0.3256	1.044	0.3256	3.9061	0.0000	0.0000
518.2	0.217153	0.3257	1.044	0.3257	3.9079	0.0000	0.0000
518.4	0.21725	0.3259	1.044	0.3259	3.9096	0.0000	0.0000
518.6	0.217348	0.3260	1.044	0.3260	3.9114	0.0000	0.0000
518.8	0.217445	0.3262	1.044	0.3262	3.9131	0.0000	0.0000
519	0.217543	0.3263	1.044	0.3263	3.9149	0.0000	0.0000
519.2	0.21764	0.3265	1.044	0.3265	3.9166	0.0000	0.0000
519.4	0.217738	0.3266	1.044	0.3266	3.9184	0.0000	0.0000
519.6	0.217835	0.3268	1.044	0.3268	3.9202	0.0000	0.0000
519.8	0.217933	0.3269	1.044	0.3269	3.9219	0.0000	0.0000
520	0.218031	0.3270	1.044	0.3270	3.9237	0.0000	0.0000
520.2	0.218128	0.3272	1.044	0.3272	3.9254	0.0000	0.0000
520.4	0.218226	0.3273	1.044	0.3273	3.9272	0.0000	0.0000
520.6	0.218323	0.3275	1.044	0.3275	3.9289	0.0000	0.0000
520.8	0.218421	0.3276	1.044	0.3276	3.9307	0.0000	0.0000
521	0.218519	0.3278	1.044	0.3278	3.9325	0.0000	0.0000
521.2	0.218616	0.3279	1.044	0.3279	3.9342	0.0000	0.0000
521.4	0.218714	0.3281	1.044	0.3281	3.9360	0.0000	0.0000
521.6	0.218812	0.3282	1.044	0.3282	3.9377	0.0000	0.0000
521.8	0.21891	0.3284	1.044	0.3284	3.9395	0.0000	0.0000
522	0.219007	0.3285	1.044	0.3285	3.9413	0.0000	0.0000
522.2	0.219105	0.3287	1.044	0.3287	3.9430	0.0000	0.0000
522.4	0.219203	0.3288	1.044	0.3288	3.9448	0.0000	0.0000
522.6	0.219301	0.3290	1.044	0.3290	3.9465	0.0000	0.0000
522.8	0.219398	0.3291	1.044	0.3291	3.9483	0.0000	0.0000
523	0.219496	0.3292	1.044	0.3292	3.9501	0.0000	0.0000
523.2	0.219594	0.3294	1.044	0.3294	3.9518	0.0000	0.0000
523.4	0.219692	0.3295	1.044	0.3295	3.9536	0.0000	0.0000
523.6	0.21979	0.3297	1.044	0.3297	3.9553	0.0000	0.0000
523.8	0.219888	0.3298	1.044	0.3298	3.9571	0.0000	0.0000
524	0.219986	0.3300	1.044	0.3300	3.9589	0.0000	0.0000
524.2	0.220083	0.3301	1.044	0.3301	3.9606	0.0000	0.0000
524.4	0.220181	0.3303	1.044	0.3303	3.9624	0.0000	0.0000
524.6	0.220279	0.3304	1.044	0.3304	3.9641	0.0000	0.0000
524.8	0.220377	0.3306	1.044	0.3306	3.9659	0.0000	0.0000

525	0.220475	0.3307	1.044	0.3307	3.9677	0.0000	0.0000
525.2	0.220573	0.3309	1.044	0.3309	3.9694	0.0000	0.0000
525.4	0.220671	0.3310	1.044	0.3310	3.9712	0.0000	0.0000
525.6	0.220769	0.3312	1.044	0.3312	3.9730	0.0000	0.0000
525.8	0.220867	0.3313	1.044	0.3313	3.9747	0.0000	0.0000
526	0.220965	0.3314	1.044	0.3314	3.9765	0.0000	0.0000
526.2	0.221063	0.3316	1.044	0.3316	3.9783	0.0000	0.0000
526.4	0.221161	0.3317	1.044	0.3317	3.9800	0.0000	0.0000
526.6	0.22126	0.3319	1.044	0.3319	3.9818	0.0000	0.0000
526.8	0.221358	0.3320	1.044	0.3320	3.9836	0.0000	0.0000
527	0.221456	0.3322	1.044	0.3322	3.9853	0.0000	0.0000
527.2	0.221554	0.3323	1.044	0.3323	3.9871	0.0000	0.0000
527.4	0.221652	0.3325	1.044	0.3325	3.9889	0.0000	0.0000
527.6	0.22175	0.3326	1.044	0.3326	3.9906	0.0000	0.0000
527.8	0.221848	0.3328	1.044	0.3328	3.9924	0.0000	0.0000
528	0.221947	0.3329	1.044	0.3329	3.9942	0.0000	0.0000
528.2	0.222045	0.3331	1.044	0.3331	3.9959	0.0000	0.0000
528.4	0.222143	0.3332	1.044	0.3332	3.9977	0.0000	0.0000
528.6	0.222241	0.3334	1.044	0.3334	3.9995	0.0000	0.0000
528.8	0.222339	0.3335	1.044	0.3335	4.0012	0.0000	0.0000
529	0.222438	0.3337	1.044	0.3337	4.0030	0.0000	0.0000
529.2	0.222536	0.3338	1.044	0.3338	4.0048	0.0000	0.0000
529.4	0.222634	0.3340	1.044	0.3340	4.0065	0.0000	0.0000
529.6	0.222733	0.3341	1.044	0.3341	4.0083	0.0000	0.0000
529.8	0.222831	0.3342	1.044	0.3342	4.0101	0.0000	0.0000
530	0.222929	0.3344	1.044	0.3344	4.0118	0.0000	0.0000
530.2	0.223028	0.3345	1.044	0.3345	4.0136	0.0000	0.0000
530.4	0.223126	0.3347	1.044	0.3347	4.0154	0.0000	0.0000
530.6	0.223224	0.3348	1.044	0.3348	4.0172	0.0000	0.0000
530.8	0.223323	0.3350	1.044	0.3350	4.0189	0.0000	0.0000
531	0.223421	0.3351	1.044	0.3351	4.0207	0.0000	0.0000
531.2	0.22352	0.3353	1.044	0.3353	4.0225	0.0000	0.0000
531.4	0.223618	0.3354	1.044	0.3354	4.0242	0.0000	0.0000
531.6	0.223716	0.3356	1.044	0.3356	4.0260	0.0000	0.0000
531.8	0.223815	0.3357	1.044	0.3357	4.0278	0.0000	0.0000
532	0.223913	0.3359	1.044	0.3359	4.0296	0.0000	0.0000
532.2	0.224012	0.3360	1.044	0.3360	4.0313	0.0000	0.0000
532.4	0.22411	0.3362	1.044	0.3362	4.0331	0.0000	0.0000
532.6	0.224209	0.3363	1.044	0.3363	4.0349	0.0000	0.0000
532.8	0.224307	0.3365	1.044	0.3365	4.0366	0.0000	0.0000
533	0.224406	0.3366	1.044	0.3366	4.0384	0.0000	0.0000
533.2	0.224505	0.3368	1.044	0.3368	4.0402	0.0000	0.0000
533.4	0.224603	0.3369	1.044	0.3369	4.0420	0.0000	0.0000
533.6	0.224702	0.3371	1.044	0.3371	4.0437	0.0000	0.0000
533.8	0.2248	0.3372	1.044	0.3372	4.0455	0.0000	0.0000
534	0.224899	0.3373	1.044	0.3373	4.0473	0.0000	0.0000
534.2	0.224998	0.3375	1.044	0.3375	4.0491	0.0000	0.0000

534.4	0.225096	0.3376	1.044	0.3376	4.0508	0.0000	0.0000
534.6	0.225195	0.3378	1.044	0.3378	4.0526	0.0000	0.0000
534.8	0.225294	0.3379	1.044	0.3379	4.0544	0.0000	0.0000
535	0.225392	0.3381	1.044	0.3381	4.0562	0.0000	0.0000
535.2	0.225491	0.3382	1.044	0.3382	4.0580	0.0000	0.0000
535.4	0.22559	0.3384	1.044	0.3384	4.0597	0.0000	0.0000
535.6	0.225689	0.3385	1.044	0.3385	4.0615	0.0000	0.0000
535.8	0.225787	0.3387	1.044	0.3387	4.0633	0.0000	0.0000
536	0.225886	0.3388	1.044	0.3388	4.0651	0.0000	0.0000
536.2	0.225985	0.3390	1.044	0.3390	4.0668	0.0000	0.0000
536.4	0.226084	0.3391	1.044	0.3391	4.0686	0.0000	0.0000
536.6	0.226183	0.3393	1.044	0.3393	4.0704	0.0000	0.0000
536.8	0.226282	0.3394	1.044	0.3394	4.0722	0.0000	0.0000
537	0.22638	0.3396	1.044	0.3396	4.0740	0.0000	0.0000
537.2	0.226479	0.3397	1.044	0.3397	4.0757	0.0000	0.0000
537.4	0.226578	0.3399	1.044	0.3399	4.0775	0.0000	0.0000
537.6	0.226677	0.3400	1.044	0.3400	4.0793	0.0000	0.0000
537.8	0.226776	0.3402	1.044	0.3402	4.0811	0.0000	0.0000
538	0.226875	0.3403	1.044	0.3403	4.0829	0.0000	0.0000
538.2	0.226974	0.3405	1.044	0.3405	4.0846	0.0000	0.0000
538.4	0.227073	0.3406	1.044	0.3406	4.0864	0.0000	0.0000
538.6	0.227172	0.3408	1.044	0.3408	4.0882	0.0000	0.0000
538.8	0.227271	0.3409	1.044	0.3409	4.0900	0.0000	0.0000
539	0.22737	0.3411	1.044	0.3411	4.0918	0.0000	0.0000
539.2	0.227469	0.3412	1.044	0.3412	4.0935	0.0000	0.0000
539.4	0.227568	0.3414	1.044	0.3414	4.0953	0.0000	0.0000
539.6	0.227667	0.3415	1.044	0.3415	4.0971	0.0000	0.0000
539.8	0.227766	0.3416	1.044	0.3416	4.0989	0.0000	0.0000
540	0.227865	0.3418	1.044	0.3418	4.1007	0.0000	0.0000
540.2	0.227964	0.3419	1.044	0.3419	4.1025	0.0000	0.0000
540.4	0.228063	0.3421	1.044	0.3421	4.1042	0.0000	0.0000
540.6	0.228162	0.3422	1.044	0.3422	4.1060	0.0000	0.0000
540.8	0.228262	0.3424	1.044	0.3424	4.1078	0.0000	0.0000
541	0.228361	0.3425	1.044	0.3425	4.1096	0.0000	0.0000
541.2	0.22846	0.3427	1.044	0.3427	4.1114	0.0000	0.0000
541.4	0.228559	0.3428	1.044	0.3428	4.1132	0.0000	0.0000
541.6	0.228658	0.3430	1.044	0.3430	4.1150	0.0000	0.0000
541.8	0.228758	0.3431	1.044	0.3431	4.1167	0.0000	0.0000
542	0.228857	0.3433	1.044	0.3433	4.1185	0.0000	0.0000
542.2	0.228956	0.3434	1.044	0.3434	4.1203	0.0000	0.0000
542.4	0.229055	0.3436	1.044	0.3436	4.1221	0.0000	0.0000
542.6	0.229155	0.3437	1.044	0.3437	4.1239	0.0000	0.0000
542.8	0.229254	0.3439	1.044	0.3439	4.1257	0.0000	0.0000
543	0.229353	0.3440	1.044	0.3440	4.1275	0.0000	0.0000
543.2	0.229453	0.3442	1.044	0.3442	4.1293	0.0000	0.0000
543.4	0.229552	0.3443	1.044	0.3443	4.1310	0.0000	0.0000
543.6	0.229651	0.3445	1.044	0.3445	4.1328	0.0000	0.0000

543.8	0.229751	0.3446	1.044	0.3446	4.1346	0.0000	0.0000
544	0.22985	0.3448	1.044	0.3448	4.1364	0.0000	0.0000
544.2	0.229949	0.3449	1.044	0.3449	4.1382	0.0000	0.0000
544.4	0.230049	0.3451	1.044	0.3451	4.1400	0.0000	0.0000
544.6	0.230148	0.3452	1.044	0.3452	4.1418	0.0000	0.0000
544.8	0.230248	0.3454	1.044	0.3454	4.1436	0.0000	0.0000
545	0.230347	0.3455	1.044	0.3455	4.1454	0.0000	0.0000
545.2	0.230447	0.3457	1.044	0.3457	4.1471	0.0000	0.0000
545.4	0.230546	0.3458	1.044	0.3458	4.1489	0.0000	0.0000
545.6	0.230646	0.3460	1.044	0.3460	4.1507	0.0000	0.0000
545.8	0.230745	0.3461	1.044	0.3461	4.1525	0.0000	0.0000
546	0.230845	0.3463	1.044	0.3463	4.1543	0.0000	0.0000
546.2	0.230944	0.3464	1.044	0.3464	4.1561	0.0000	0.0000
546.4	0.231044	0.3466	1.044	0.3466	4.1579	0.0000	0.0000
546.6	0.231144	0.3467	1.044	0.3467	4.1597	0.0000	0.0000
546.8	0.231243	0.3469	1.044	0.3469	4.1615	0.0000	0.0000
547	0.231343	0.3470	1.044	0.3470	4.1633	0.0000	0.0000
547.2	0.231442	0.3472	1.044	0.3472	4.1651	0.0000	0.0000
547.4	0.231542	0.3473	1.044	0.3473	4.1669	0.0000	0.0000
547.6	0.231642	0.3475	1.044	0.3475	4.1687	0.0000	0.0000
547.8	0.231741	0.3476	1.044	0.3476	4.1704	0.0000	0.0000
548	0.231841	0.3478	1.044	0.3478	4.1722	0.0000	0.0000
548.2	0.231941	0.3479	1.044	0.3479	4.1740	0.0000	0.0000
548.4	0.232041	0.3481	1.044	0.3481	4.1758	0.0000	0.0000
548.6	0.23214	0.3482	1.044	0.3482	4.1776	0.0000	0.0000
548.8	0.23224	0.3484	1.044	0.3484	4.1794	0.0000	0.0000
549	0.23234	0.3485	1.044	0.3485	4.1812	0.0000	0.0000
549.2	0.23244	0.3487	1.044	0.3487	4.1830	0.0000	0.0000
549.4	0.23254	0.3488	1.044	0.3488	4.1848	0.0000	0.0000
549.6	0.232639	0.3490	1.044	0.3490	4.1866	0.0000	0.0000
549.8	0.232739	0.3491	1.044	0.3491	4.1884	0.0000	0.0000
550	0.232839	0.3493	1.044	0.3493	4.1902	0.0000	0.0000
550.2	0.232939	0.3494	1.044	0.3494	4.1920	0.0000	0.0000
550.4	0.233039	0.3496	1.044	0.3496	4.1938	0.0000	0.0000
550.6	0.233139	0.3497	1.044	0.3497	4.1956	0.0000	0.0000
550.8	0.233239	0.3499	1.044	0.3499	4.1974	0.0000	0.0000
551	0.233339	0.3500	1.044	0.3500	4.1992	0.0000	0.0000
551.2	0.233439	0.3502	1.044	0.3502	4.2010	0.0000	0.0000
551.4	0.233539	0.3503	1.044	0.3503	4.2028	0.0000	0.0000
551.6	0.233638	0.3505	1.044	0.3505	4.2046	0.0000	0.0000
551.8	0.233738	0.3506	1.044	0.3506	4.2064	0.0000	0.0000
552	0.233838	0.3508	1.044	0.3508	4.2082	0.0000	0.0000
552.2	0.233939	0.3509	1.044	0.3509	4.2100	0.0000	0.0000
552.4	0.234039	0.3511	1.044	0.3511	4.2118	0.0000	0.0000
552.6	0.234139	0.3512	1.044	0.3512	4.2136	0.0000	0.0000
552.8	0.234239	0.3514	1.044	0.3514	4.2154	0.0000	0.0000
553	0.234339	0.3515	1.044	0.3515	4.2172	0.0000	0.0000

553.2	0.234439	0.3517	1.044	0.3517	4.2190	0.0000	0.0000
553.4	0.234539	0.3518	1.044	0.3518	4.2208	0.0000	0.0000
553.6	0.234639	0.3520	1.044	0.3520	4.2226	0.0000	0.0000
553.8	0.234739	0.3521	1.044	0.3521	4.2244	0.0000	0.0000
554	0.23484	0.3523	1.044	0.3523	4.2262	0.0000	0.0000
554.2	0.23494	0.3524	1.044	0.3524	4.2280	0.0000	0.0000
554.4	0.23504	0.3526	1.044	0.3526	4.2298	0.0000	0.0000
554.6	0.23514	0.3527	1.044	0.3527	4.2316	0.0000	0.0000
554.8	0.23524	0.3529	1.044	0.3529	4.2334	0.0000	0.0000
555	0.235341	0.3530	1.044	0.3530	4.2352	0.0000	0.0000
555.2	0.235441	0.3532	1.044	0.3532	4.2370	0.0000	0.0000
555.4	0.235541	0.3533	1.044	0.3533	4.2388	0.0000	0.0000
555.6	0.235641	0.3535	1.044	0.3535	4.2406	0.0000	0.0000
555.8	0.235742	0.3536	1.044	0.3536	4.2424	0.0000	0.0000
556	0.235842	0.3538	1.044	0.3538	4.2443	0.0000	0.0000
556.2	0.235942	0.3539	1.044	0.3539	4.2461	0.0000	0.0000
556.4	0.236043	0.3541	1.044	0.3541	4.2479	0.0000	0.0000
556.6	0.236143	0.3542	1.044	0.3542	4.2497	0.0000	0.0000
556.8	0.236244	0.3544	1.044	0.3544	4.2515	0.0000	0.0000
557	0.236344	0.3545	1.044	0.3545	4.2533	0.0000	0.0000
557.2	0.236444	0.3547	1.044	0.3547	4.2551	0.0000	0.0000
557.4	0.236545	0.3548	1.044	0.3548	4.2569	0.0000	0.0000
557.6	0.236645	0.3550	1.044	0.3550	4.2587	0.0000	0.0000
557.8	0.236746	0.3551	1.044	0.3551	4.2605	0.0000	0.0000
558	0.236846	0.3553	1.044	0.3553	4.2623	0.0000	0.0000
558.2	0.236947	0.3554	1.044	0.3554	4.2641	0.0000	0.0000
558.4	0.237047	0.3556	1.044	0.3556	4.2659	0.0000	0.0000
558.6	0.237148	0.3557	1.044	0.3557	4.2678	0.0000	0.0000
558.8	0.237248	0.3559	1.044	0.3559	4.2696	0.0000	0.0000
559	0.237349	0.3560	1.044	0.3560	4.2714	0.0000	0.0000
559.2	0.237449	0.3562	1.044	0.3562	4.2732	0.0000	0.0000
559.4	0.23755	0.3563	1.044	0.3563	4.2750	0.0000	0.0000
559.6	0.237651	0.3565	1.044	0.3565	4.2768	0.0000	0.0000
559.8	0.237751	0.3566	1.044	0.3566	4.2786	0.0000	0.0000
560	0.237852	0.3568	1.044	0.3568	4.2804	0.0000	0.0000
560.2	0.237953	0.3569	1.044	0.3569	4.2822	0.0000	0.0000
560.4	0.238053	0.3571	1.044	0.3571	4.2841	0.0000	0.0000
560.6	0.238154	0.3572	1.044	0.3572	4.2859	0.0000	0.0000
560.8	0.238255	0.3574	1.044	0.3574	4.2877	0.0000	0.0000
561	0.238355	0.3575	1.044	0.3575	4.2895	0.0000	0.0000
561.2	0.238456	0.3577	1.044	0.3577	4.2913	0.0000	0.0000
561.4	0.238557	0.3578	1.044	0.3578	4.2931	0.0000	0.0000
561.6	0.238658	0.3580	1.044	0.3580	4.2949	0.0000	0.0000
561.8	0.238759	0.3581	1.044	0.3581	4.2967	0.0000	0.0000
562	0.238859	0.3583	1.044	0.3583	4.2986	0.0000	0.0000
562.2	0.23896	0.3584	1.044	0.3584	4.3004	0.0000	0.0000
562.4	0.239061	0.3586	1.044	0.3586	4.3022	0.0000	0.0000

562.6	0.239162	0.3587	1.044	0.3587	4.3040	0.0000	0.0000
562.8	0.239263	0.3589	1.044	0.3589	4.3058	0.0000	0.0000
563	0.239364	0.3590	1.044	0.3590	4.3076	0.0000	0.0000
563.2	0.239465	0.3592	1.044	0.3592	4.3095	0.0000	0.0000
563.4	0.239565	0.3593	1.044	0.3593	4.3113	0.0000	0.0000
563.6	0.239666	0.3595	1.044	0.3595	4.3131	0.0000	0.0000
563.8	0.239767	0.3597	1.044	0.3597	4.3149	0.0000	0.0000
564	0.239868	0.3598	1.044	0.3598	4.3167	0.0000	0.0000
564.2	0.239969	0.3600	1.044	0.3600	4.3185	0.0000	0.0000
564.4	0.24007	0.3601	1.044	0.3601	4.3204	0.0000	0.0000
564.6	0.240171	0.3603	1.044	0.3603	4.3222	0.0000	0.0000
564.8	0.240272	0.3604	1.044	0.3604	4.3240	0.0000	0.0000
565	0.240373	0.3606	1.044	0.3606	4.3258	0.0000	0.0000
565.2	0.240474	0.3607	1.044	0.3607	4.3276	0.0000	0.0000
565.4	0.240576	0.3609	1.044	0.3609	4.3294	0.0000	0.0000
565.6	0.240677	0.3610	1.044	0.3610	4.3313	0.0000	0.0000
565.8	0.240778	0.3612	1.044	0.3612	4.3331	0.0000	0.0000
566	0.240879	0.3613	1.044	0.3613	4.3349	0.0000	0.0000
566.2	0.24098	0.3615	1.044	0.3615	4.3367	0.0000	0.0000
566.4	0.241081	0.3616	1.044	0.3616	4.3386	0.0000	0.0000
566.6	0.241182	0.3618	1.044	0.3618	4.3404	0.0000	0.0000
566.8	0.241284	0.3619	1.044	0.3619	4.3422	0.0000	0.0000
567	0.241385	0.3621	1.044	0.3621	4.3440	0.0000	0.0000
567.2	0.241486	0.3622	1.044	0.3622	4.3458	0.0000	0.0000
567.4	0.241587	0.3624	1.044	0.3624	4.3477	0.0000	0.0000
567.6	0.241688	0.3625	1.044	0.3625	4.3495	0.0000	0.0000
567.8	0.24179	0.3627	1.044	0.3627	4.3513	0.0000	0.0000
568	0.241891	0.3628	1.044	0.3628	4.3531	0.0000	0.0000
568.2	0.241992	0.3630	1.044	0.3630	4.3550	0.0000	0.0000
568.4	0.242094	0.3631	1.044	0.3631	4.3568	0.0000	0.0000
568.6	0.242195	0.3633	1.044	0.3633	4.3586	0.0000	0.0000
568.8	0.242296	0.3634	1.044	0.3634	4.3604	0.0000	0.0000
569	0.242398	0.3636	1.044	0.3636	4.3622	0.0000	0.0000
569.2	0.242499	0.3637	1.044	0.3637	4.3641	0.0000	0.0000
569.4	0.242601	0.3639	1.044	0.3639	4.3659	0.0000	0.0000
569.6	0.242702	0.3641	1.044	0.3641	4.3677	0.0000	0.0000
569.8	0.242803	0.3642	1.044	0.3642	4.3695	0.0000	0.0000
570	0.242905	0.3644	1.044	0.3644	4.3714	0.0000	0.0000
570.2	0.243006	0.3645	1.044	0.3645	4.3732	0.0000	0.0000
570.4	0.243108	0.3647	1.044	0.3647	4.3750	0.0000	0.0000
570.6	0.243209	0.3648	1.044	0.3648	4.3769	0.0000	0.0000
570.8	0.243311	0.3650	1.044	0.3650	4.3787	0.0000	0.0000
571	0.243412	0.3651	1.044	0.3651	4.3805	0.0000	0.0000
571.2	0.243514	0.3653	1.044	0.3653	4.3823	0.0000	0.0000
571.4	0.243616	0.3654	1.044	0.3654	4.3842	0.0000	0.0000
571.6	0.243717	0.3656	1.044	0.3656	4.3860	0.0000	0.0000
571.8	0.243819	0.3657	1.044	0.3657	4.3878	0.0000	0.0000

572	0.24392	0.3659	1.044	0.3659	4.3897	0.0000	0.0000
572.2	0.244022	0.3660	1.044	0.3660	4.3915	0.0000	0.0000
572.4	0.244124	0.3662	1.044	0.3662	4.3933	0.0000	0.0000
572.6	0.244225	0.3663	1.044	0.3663	4.3951	0.0000	0.0000
572.8	0.244327	0.3665	1.044	0.3665	4.3970	0.0000	0.0000
573	0.244429	0.3666	1.044	0.3666	4.3988	0.0000	0.0000
573.2	0.24453	0.3668	1.044	0.3668	4.4006	0.0000	0.0000
573.4	0.244632	0.3669	1.044	0.3669	4.4025	0.0000	0.0000
573.6	0.244734	0.3671	1.044	0.3671	4.4043	0.0000	0.0000
573.8	0.244836	0.3673	1.044	0.3673	4.4061	0.0000	0.0000
574	0.244937	0.3674	1.044	0.3674	4.4080	0.0000	0.0000
574.2	0.245039	0.3676	1.044	0.3676	4.4098	0.0000	0.0000
574.4	0.245141	0.3677	1.044	0.3677	4.4116	0.0000	0.0000
574.6	0.245243	0.3679	1.044	0.3679	4.4135	0.0000	0.0000
574.8	0.245345	0.3680	1.044	0.3680	4.4153	0.0000	0.0000
575	0.245447	0.3682	1.044	0.3682	4.4171	0.0000	0.0000
575.2	0.245549	0.3683	1.044	0.3683	4.4190	0.0000	0.0000
575.4	0.24565	0.3685	1.044	0.3685	4.4208	0.0000	0.0000
575.6	0.245752	0.3686	1.044	0.3686	4.4226	0.0000	0.0000
575.8	0.245854	0.3688	1.044	0.3688	4.4245	0.0000	0.0000
576	0.245956	0.3689	1.044	0.3689	4.4263	0.0000	0.0000
576.2	0.246058	0.3691	1.044	0.3691	4.4281	0.0000	0.0000
576.4	0.24616	0.3692	1.044	0.3692	4.4300	0.0000	0.0000
576.6	0.246262	0.3694	1.044	0.3694	4.4318	0.0000	0.0000
576.8	0.246364	0.3695	1.044	0.3695	4.4336	0.0000	0.0000
577	0.246466	0.3697	1.044	0.3697	4.4355	0.0000	0.0000
577.2	0.246568	0.3699	1.044	0.3699	4.4373	0.0000	0.0000
577.4	0.24667	0.3700	1.044	0.3700	4.4391	0.0000	0.0000
577.6	0.246772	0.3702	1.044	0.3702	4.4410	0.0000	0.0000
577.8	0.246875	0.3703	1.044	0.3703	4.4428	0.0000	0.0000
578	0.246977	0.3705	1.044	0.3705	4.4447	0.0000	0.0000
578.2	0.247079	0.3706	1.044	0.3706	4.4465	0.0000	0.0000
578.4	0.247181	0.3708	1.044	0.3708	4.4483	0.0000	0.0000
578.6	0.247283	0.3709	1.044	0.3709	4.4502	0.0000	0.0000
578.8	0.247385	0.3711	1.044	0.3711	4.4520	0.0000	0.0000
579	0.247487	0.3712	1.044	0.3712	4.4539	0.0000	0.0000
579.2	0.24759	0.3714	1.044	0.3714	4.4557	0.0000	0.0000
579.4	0.247692	0.3715	1.044	0.3715	4.4575	0.0000	0.0000
579.6	0.247794	0.3717	1.044	0.3717	4.4594	0.0000	0.0000
579.8	0.247896	0.3718	1.044	0.3718	4.4612	0.0000	0.0000
580	0.247999	0.3720	1.044	0.3720	4.4631	0.0000	0.0000
580.2	0.248101	0.3722	1.044	0.3722	4.4649	0.0000	0.0000
580.4	0.248203	0.3723	1.044	0.3723	4.4667	0.0000	0.0000
580.6	0.248306	0.3725	1.044	0.3725	4.4686	0.0000	0.0000
580.8	0.248408	0.3726	1.044	0.3726	4.4704	0.0000	0.0000
581	0.24851	0.3728	1.044	0.3728	4.4723	0.0000	0.0000
581.2	0.248613	0.3729	1.044	0.3729	4.4741	0.0000	0.0000

581.4	0.248715	0.3731	1.044	0.3731	4.4760	0.0000	0.0000
581.6	0.248818	0.3732	1.044	0.3732	4.4778	0.0000	0.0000
581.8	0.24892	0.3734	1.044	0.3734	4.4796	0.0000	0.0000
582	0.249023	0.3735	1.044	0.3735	4.4815	0.0000	0.0000
582.2	0.249125	0.3737	1.044	0.3737	4.4833	0.0000	0.0000
582.4	0.249227	0.3738	1.044	0.3738	4.4852	0.0000	0.0000
582.6	0.24933	0.3740	1.044	0.3740	4.4870	0.0000	0.0000
582.8	0.249433	0.3741	1.044	0.3741	4.4889	0.0000	0.0000
583	0.249535	0.3743	1.044	0.3743	4.4907	0.0000	0.0000
583.2	0.249638	0.3745	1.044	0.3745	4.4926	0.0000	0.0000
583.4	0.24974	0.3746	1.044	0.3746	4.4944	0.0000	0.0000
583.6	0.249843	0.3748	1.044	0.3748	4.4962	0.0000	0.0000
583.8	0.249945	0.3749	1.044	0.3749	4.4981	0.0000	0.0000
584	0.250048	0.3751	1.044	0.3751	4.4999	0.0000	0.0000
584.2	0.250151	0.3752	1.044	0.3752	4.5018	0.0000	0.0000
584.4	0.250253	0.3754	1.044	0.3754	4.5036	0.0000	0.0000
584.6	0.250356	0.3755	1.044	0.3755	4.5055	0.0000	0.0000
584.8	0.250459	0.3757	1.044	0.3757	4.5073	0.0000	0.0000
585	0.250561	0.3758	1.044	0.3758	4.5092	0.0000	0.0000
585.2	0.250664	0.3760	1.044	0.3760	4.5110	0.0000	0.0000
585.4	0.250767	0.3762	1.044	0.3762	4.5129	0.0000	0.0000
585.6	0.25087	0.3763	1.044	0.3763	4.5147	0.0000	0.0000
585.8	0.250972	0.3765	1.044	0.3765	4.5166	0.0000	0.0000
586	0.251075	0.3766	1.044	0.3766	4.5184	0.0000	0.0000
586.2	0.251178	0.3768	1.044	0.3768	4.5203	0.0000	0.0000
586.4	0.251281	0.3769	1.044	0.3769	4.5221	0.0000	0.0000
586.6	0.251384	0.3771	1.044	0.3771	4.5240	0.0000	0.0000
586.8	0.251487	0.3772	1.044	0.3772	4.5258	0.0000	0.0000
587	0.251589	0.3774	1.044	0.3774	4.5277	0.0000	0.0000
587.2	0.251692	0.3775	1.044	0.3775	4.5295	0.0000	0.0000
587.4	0.251795	0.3777	1.044	0.3777	4.5314	0.0000	0.0000
587.6	0.251898	0.3778	1.044	0.3778	4.5332	0.0000	0.0000
587.8	0.252001	0.3780	1.044	0.3780	4.5351	0.0000	0.0000
588	0.252104	0.3782	1.044	0.3782	4.5369	0.0000	0.0000
588.2	0.252207	0.3783	1.044	0.3783	4.5388	0.0000	0.0000
588.4	0.25231	0.3785	1.044	0.3785	4.5407	0.0000	0.0000
588.6	0.252413	0.3786	1.044	0.3786	4.5425	0.0000	0.0000
588.8	0.252516	0.3788	1.044	0.3788	4.5444	0.0000	0.0000
589	0.252619	0.3789	1.044	0.3789	4.5462	0.0000	0.0000
589.2	0.252722	0.3791	1.044	0.3791	4.5481	0.0000	0.0000
589.4	0.252825	0.3792	1.044	0.3792	4.5499	0.0000	0.0000
589.6	0.252928	0.3794	1.044	0.3794	4.5518	0.0000	0.0000
589.8	0.253031	0.3795	1.044	0.3795	4.5536	0.0000	0.0000
590	0.253135	0.3797	1.044	0.3797	4.5555	0.0000	0.0000
590.2	0.253238	0.3799	1.044	0.3799	4.5574	0.0000	0.0000
590.4	0.253341	0.3800	1.044	0.3800	4.5592	0.0000	0.0000
590.6	0.253444	0.3802	1.044	0.3802	4.5611	0.0000	0.0000

590.8	0.253547	0.3803	1.044	0.3803	4.5629	0.0000	0.0000
591	0.253651	0.3805	1.044	0.3805	4.5648	0.0000	0.0000
591.2	0.253754	0.3806	1.044	0.3806	4.5666	0.0000	0.0000
591.4	0.253857	0.3808	1.044	0.3808	4.5685	0.0000	0.0000
591.6	0.25396	0.3809	1.044	0.3809	4.5704	0.0000	0.0000
591.8	0.254064	0.3811	1.044	0.3811	4.5722	0.0000	0.0000
592	0.254167	0.3813	1.044	0.3813	4.5741	0.0000	0.0000
592.2	0.25427	0.3814	1.044	0.3814	4.5759	0.0000	0.0000
592.4	0.254374	0.3816	1.044	0.3816	4.5778	0.0000	0.0000
592.6	0.254477	0.3817	1.044	0.3817	4.5797	0.0000	0.0000
592.8	0.25458	0.3819	1.044	0.3819	4.5815	0.0000	0.0000
593	0.254684	0.3820	1.044	0.3820	4.5834	0.0000	0.0000
593.2	0.254787	0.3822	1.044	0.3822	4.5852	0.0000	0.0000
593.4	0.254891	0.3823	1.044	0.3823	4.5871	0.0000	0.0000
593.6	0.254994	0.3825	1.044	0.3825	4.5890	0.0000	0.0000
593.8	0.255098	0.3826	1.044	0.3826	4.5908	0.0000	0.0000
594	0.255201	0.3828	1.044	0.3828	4.5927	0.0000	0.0000
594.2	0.255305	0.3830	1.044	0.3830	4.5945	0.0000	0.0000
594.4	0.255408	0.3831	1.044	0.3831	4.5964	0.0000	0.0000
594.6	0.255512	0.3833	1.044	0.3833	4.5983	0.0000	0.0000
594.8	0.255615	0.3834	1.044	0.3834	4.6001	0.0000	0.0000
595	0.255719	0.3836	1.044	0.3836	4.6020	0.0000	0.0000
595.2	0.255822	0.3837	1.044	0.3837	4.6039	0.0000	0.0000
595.4	0.255926	0.3839	1.044	0.3839	4.6057	0.0000	0.0000
595.6	0.25603	0.3840	1.044	0.3840	4.6076	0.0000	0.0000
595.8	0.256133	0.3842	1.044	0.3842	4.6095	0.0000	0.0000
596	0.256237	0.3844	1.044	0.3844	4.6113	0.0000	0.0000
596.2	0.25634	0.3845	1.044	0.3845	4.6132	0.0000	0.0000
596.4	0.256444	0.3847	1.044	0.3847	4.6151	0.0000	0.0000
596.6	0.256548	0.3848	1.044	0.3848	4.6169	0.0000	0.0000
596.8	0.256652	0.3850	1.044	0.3850	4.6188	0.0000	0.0000
597	0.256755	0.3851	1.044	0.3851	4.6207	0.0000	0.0000
597.2	0.256859	0.3853	1.044	0.3853	4.6225	0.0000	0.0000
597.4	0.256963	0.3854	1.044	0.3854	4.6244	0.0000	0.0000
597.6	0.257067	0.3856	1.044	0.3856	4.6263	0.0000	0.0000
597.8	0.257171	0.3858	1.044	0.3858	4.6281	0.0000	0.0000
598	0.257274	0.3859	1.044	0.3859	4.6300	0.0000	0.0000
598.2	0.257378	0.3861	1.044	0.3861	4.6319	0.0000	0.0000
598.4	0.257482	0.3862	1.044	0.3862	4.6337	0.0000	0.0000
598.6	0.257586	0.3864	1.044	0.3864	4.6356	0.0000	0.0000
598.8	0.25769	0.3865	1.044	0.3865	4.6375	0.0000	0.0000
599	0.257794	0.3867	1.044	0.3867	4.6394	0.0000	0.0000
599.2	0.257898	0.3868	1.044	0.3868	4.6412	0.0000	0.0000
599.4	0.258002	0.3870	1.044	0.3870	4.6431	0.0000	0.0000
599.6	0.258106	0.3872	1.044	0.3872	4.6450	0.0000	0.0000
599.8	0.25821	0.3873	1.044	0.3873	4.6468	0.0000	0.0000
600	0.258314	0.3875	1.044	0.3875	4.6487	0.0000	0.0000

600.2	0.258418	0.3876	1.044	0.3876	4.6506	0.0000	0.0000
600.4	0.258522	0.3878	1.044	0.3878	4.6525	0.0000	0.0000
600.6	0.258626	0.3879	1.044	0.3879	4.6543	0.0000	0.0000
600.8	0.25873	0.3881	1.044	0.3881	4.6562	0.0000	0.0000
601	0.258834	0.3883	1.044	0.3883	4.6581	0.0000	0.0000
601.2	0.258938	0.3884	1.044	0.3884	4.6599	0.0000	0.0000
601.4	0.259042	0.3886	1.044	0.3886	4.6618	0.0000	0.0000
601.6	0.259146	0.3887	1.044	0.3887	4.6637	0.0000	0.0000
601.8	0.259251	0.3889	1.044	0.3889	4.6656	0.0000	0.0000
602	0.259355	0.3890	1.044	0.3890	4.6674	0.0000	0.0000
602.2	0.259459	0.3892	1.044	0.3892	4.6693	0.0000	0.0000
602.4	0.259563	0.3893	1.044	0.3893	4.6712	0.0000	0.0000
602.6	0.259667	0.3895	1.044	0.3895	4.6731	0.0000	0.0000
602.8	0.259772	0.3897	1.044	0.3897	4.6750	0.0000	0.0000
603	0.259876	0.3898	1.044	0.3898	4.6768	0.0000	0.0000
603.2	0.25998	0.3900	1.044	0.3900	4.6787	0.0000	0.0000
603.4	0.260085	0.3901	1.044	0.3901	4.6806	0.0000	0.0000
603.6	0.260189	0.3903	1.044	0.3903	4.6825	0.0000	0.0000
603.8	0.260293	0.3904	1.044	0.3904	4.6843	0.0000	0.0000
604	0.260398	0.3906	1.044	0.3906	4.6862	0.0000	0.0000
604.2	0.260502	0.3908	1.044	0.3908	4.6881	0.0000	0.0000
604.4	0.260606	0.3909	1.044	0.3909	4.6900	0.0000	0.0000
604.6	0.260711	0.3911	1.044	0.3911	4.6919	0.0000	0.0000
604.8	0.260815	0.3912	1.044	0.3912	4.6937	0.0000	0.0000
605	0.26092	0.3914	1.044	0.3914	4.6956	0.0000	0.0000
605.2	0.261024	0.3915	1.044	0.3915	4.6975	0.0000	0.0000
605.4	0.261129	0.3917	1.044	0.3917	4.6994	0.0000	0.0000
605.6	0.261233	0.3918	1.044	0.3918	4.7013	0.0000	0.0000
605.8	0.261338	0.3920	1.044	0.3920	4.7031	0.0000	0.0000
606	0.261442	0.3922	1.044	0.3922	4.7050	0.0000	0.0000
606.2	0.261547	0.3923	1.044	0.3923	4.7069	0.0000	0.0000
606.4	0.261651	0.3925	1.044	0.3925	4.7088	0.0000	0.0000
606.6	0.261756	0.3926	1.044	0.3926	4.7107	0.0000	0.0000
606.8	0.261861	0.3928	1.044	0.3928	4.7125	0.0000	0.0000
607	0.261965	0.3929	1.044	0.3929	4.7144	0.0000	0.0000
607.2	0.26207	0.3931	1.044	0.3931	4.7163	0.0000	0.0000
607.4	0.262175	0.3933	1.044	0.3933	4.7182	0.0000	0.0000
607.6	0.262279	0.3934	1.044	0.3934	4.7201	0.0000	0.0000
607.8	0.262384	0.3936	1.044	0.3936	4.7220	0.0000	0.0000
608	0.262489	0.3937	1.044	0.3937	4.7239	0.0000	0.0000
608.2	0.262593	0.3939	1.044	0.3939	4.7257	0.0000	0.0000
608.4	0.262698	0.3940	1.044	0.3940	4.7276	0.0000	0.0000
608.6	0.262803	0.3942	1.044	0.3942	4.7295	0.0000	0.0000
608.8	0.262908	0.3944	1.044	0.3944	4.7314	0.0000	0.0000
609	0.263013	0.3945	1.044	0.3945	4.7333	0.0000	0.0000
609.2	0.263117	0.3947	1.044	0.3947	4.7352	0.0000	0.0000
609.4	0.263222	0.3948	1.044	0.3948	4.7371	0.0000	0.0000

609.6	0.263327	0.3950	1.044	0.3950	4.7389	0.0000	0.0000
609.8	0.263432	0.3951	1.044	0.3951	4.7408	0.0000	0.0000
610	0.263537	0.3953	1.044	0.3953	4.7427	0.0000	0.0000
610.2	0.263642	0.3955	1.044	0.3955	4.7446	0.0000	0.0000
610.4	0.263747	0.3956	1.044	0.3956	4.7465	0.0000	0.0000
610.6	0.263852	0.3958	1.044	0.3958	4.7484	0.0000	0.0000
610.8	0.263957	0.3959	1.044	0.3959	4.7503	0.0000	0.0000
611	0.264062	0.3961	1.044	0.3961	4.7522	0.0000	0.0000
611.2	0.264167	0.3963	1.044	0.3963	4.7541	0.0000	0.0000
611.4	0.264272	0.3964	1.044	0.3964	4.7559	0.0000	0.0000
611.6	0.264377	0.3966	1.044	0.3966	4.7578	0.0000	0.0000
611.8	0.264482	0.3967	1.044	0.3967	4.7597	0.0000	0.0000
612	0.264587	0.3969	1.044	0.3969	4.7616	0.0000	0.0000
612.2	0.264692	0.3970	1.044	0.3970	4.7635	0.0000	0.0000
612.4	0.264797	0.3972	1.044	0.3972	4.7654	0.0000	0.0000
612.6	0.264902	0.3974	1.044	0.3974	4.7673	0.0000	0.0000
612.8	0.265008	0.3975	1.044	0.3975	4.7692	0.0000	0.0000
613	0.265113	0.3977	1.044	0.3977	4.7711	0.0000	0.0000
613.2	0.265218	0.3978	1.044	0.3978	4.7730	0.0000	0.0000
613.4	0.265323	0.3980	1.044	0.3980	4.7749	0.0000	0.0000
613.6	0.265428	0.3981	1.044	0.3981	4.7768	0.0000	0.0000
613.8	0.265534	0.3983	1.044	0.3983	4.7787	0.0000	0.0000
614	0.265639	0.3985	1.044	0.3985	4.7806	0.0000	0.0000
614.2	0.265744	0.3986	1.044	0.3986	4.7824	0.0000	0.0000
614.4	0.26585	0.3988	1.044	0.3988	4.7843	0.0000	0.0000
614.6	0.265955	0.3989	1.044	0.3989	4.7862	0.0000	0.0000
614.8	0.26606	0.3991	1.044	0.3991	4.7881	0.0000	0.0000
615	0.266166	0.3992	1.044	0.3992	4.7900	0.0000	0.0000
615.2	0.266271	0.3994	1.044	0.3994	4.7919	0.0000	0.0000
615.4	0.266376	0.3996	1.044	0.3996	4.7938	0.0000	0.0000
615.6	0.266482	0.3997	1.044	0.3997	4.7957	0.0000	0.0000
615.8	0.266587	0.3999	1.044	0.3999	4.7976	0.0000	0.0000
616	0.266693	0.4000	1.044	0.4000	4.7995	0.0000	0.0000
616.2	0.266798	0.4002	1.044	0.4002	4.8014	0.0000	0.0000
616.4	0.266904	0.4004	1.044	0.4004	4.8033	0.0000	0.0000
616.6	0.267009	0.4005	1.044	0.4005	4.8052	0.0000	0.0000
616.8	0.267115	0.4007	1.044	0.4007	4.8071	0.0000	0.0000
617	0.26722	0.4008	1.044	0.4008	4.8090	0.0000	0.0000
617.2	0.267326	0.4010	1.044	0.4010	4.8109	0.0000	0.0000
617.4	0.267431	0.4011	1.044	0.4011	4.8128	0.0000	0.0000
617.6	0.267537	0.4013	1.044	0.4013	4.8147	0.0000	0.0000
617.8	0.267643	0.4015	1.044	0.4015	4.8166	0.0000	0.0000
618	0.267748	0.4016	1.044	0.4016	4.8185	0.0000	0.0000
618.2	0.267854	0.4018	1.044	0.4018	4.8204	0.0000	0.0000
618.4	0.26796	0.4019	1.044	0.4019	4.8223	0.0000	0.0000
618.6	0.268065	0.4021	1.044	0.4021	4.8242	0.0000	0.0000
618.8	0.268171	0.4023	1.044	0.4023	4.8261	0.0000	0.0000

619	0.268277	0.4024	1.044	0.4024	4.8280	0.0000	0.0000
619.2	0.268383	0.4026	1.044	0.4026	4.8299	0.0000	0.0000
619.4	0.268488	0.4027	1.044	0.4027	4.8318	0.0000	0.0000
619.6	0.268594	0.4029	1.044	0.4029	4.8337	0.0000	0.0000
619.8	0.2687	0.4030	1.044	0.4030	4.8356	0.0000	0.0000
620	0.268806	0.4032	1.044	0.4032	4.8376	0.0000	0.0000
620.2	0.268912	0.4034	1.044	0.4034	4.8395	0.0000	0.0000
620.4	0.269017	0.4035	1.044	0.4035	4.8414	0.0000	0.0000
620.6	0.269123	0.4037	1.044	0.4037	4.8433	0.0000	0.0000
620.8	0.269229	0.4038	1.044	0.4038	4.8452	0.0000	0.0000
621	0.269335	0.4040	1.044	0.4040	4.8471	0.0000	0.0000
621.2	0.269441	0.4042	1.044	0.4042	4.8490	0.0000	0.0000
621.4	0.269547	0.4043	1.044	0.4043	4.8509	0.0000	0.0000
621.6	0.269653	0.4045	1.044	0.4045	4.8528	0.0000	0.0000
621.8	0.269759	0.4046	1.044	0.4046	4.8547	0.0000	0.0000
622	0.269865	0.4048	1.044	0.4048	4.8566	0.0000	0.0000
622.2	0.269971	0.4050	1.044	0.4050	4.8585	0.0000	0.0000
622.4	0.270077	0.4051	1.044	0.4051	4.8604	0.0000	0.0000
622.6	0.270183	0.4053	1.044	0.4053	4.8623	0.0000	0.0000
622.8	0.270289	0.4054	1.044	0.4054	4.8643	0.0000	0.0000
623	0.270395	0.4056	1.044	0.4056	4.8662	0.0000	0.0000
623.2	0.270502	0.4058	1.044	0.4058	4.8681	0.0000	0.0000
623.4	0.270608	0.4059	1.044	0.4059	4.8700	0.0000	0.0000
623.6	0.270714	0.4061	1.044	0.4061	4.8719	0.0000	0.0000
623.8	0.27082	0.4062	1.044	0.4062	4.8738	0.0000	0.0000
624	0.270926	0.4064	1.044	0.4064	4.8757	0.0000	0.0000
624.2	0.271033	0.4065	1.044	0.4065	4.8776	0.0000	0.0000
624.4	0.271139	0.4067	1.044	0.4067	4.8795	0.0000	0.0000
624.6	0.271245	0.4069	1.044	0.4069	4.8815	0.0000	0.0000
624.8	0.271351	0.4070	1.044	0.4070	4.8834	0.0000	0.0000
625	0.271458	0.4072	1.044	0.4072	4.8853	0.0000	0.0000
625.2	0.271564	0.4073	1.044	0.4073	4.8872	0.0000	0.0000
625.4	0.27167	0.4075	1.044	0.4075	4.8891	0.0000	0.0000
625.6	0.271777	0.4077	1.044	0.4077	4.8910	0.0000	0.0000
625.8	0.271883	0.4078	1.044	0.4078	4.8929	0.0000	0.0000
626	0.271989	0.4080	1.044	0.4080	4.8949	0.0000	0.0000
626.2	0.272096	0.4081	1.044	0.4081	4.8968	0.0000	0.0000
626.4	0.272202	0.4083	1.044	0.4083	4.8987	0.0000	0.0000
626.6	0.272309	0.4085	1.044	0.4085	4.9006	0.0000	0.0000
626.8	0.272415	0.4086	1.044	0.4086	4.9025	0.0000	0.0000
627	0.272522	0.4088	1.044	0.4088	4.9044	0.0000	0.0000
627.2	0.272628	0.4089	1.044	0.4089	4.9063	0.0000	0.0000
627.4	0.272735	0.4091	1.044	0.4091	4.9083	0.0000	0.0000
627.6	0.272841	0.4093	1.044	0.4093	4.9102	0.0000	0.0000
627.8	0.272948	0.4094	1.044	0.4094	4.9121	0.0000	0.0000
628	0.273054	0.4096	1.044	0.4096	4.9140	0.0000	0.0000
628.2	0.273161	0.4097	1.044	0.4097	4.9159	0.0000	0.0000

628.4	0.273268	0.4099	1.044	0.4099	4.9179	0.0000	0.0000
628.6	0.273374	0.4101	1.044	0.4101	4.9198	0.0000	0.0000
628.8	0.273481	0.4102	1.044	0.4102	4.9217	0.0000	0.0000
629	0.273588	0.4104	1.044	0.4104	4.9236	0.0000	0.0000
629.2	0.273694	0.4105	1.044	0.4105	4.9255	0.0000	0.0000
629.4	0.273801	0.4107	1.044	0.4107	4.9275	0.0000	0.0000
629.6	0.273908	0.4109	1.044	0.4109	4.9294	0.0000	0.0000
629.8	0.274015	0.4110	1.044	0.4110	4.9313	0.0000	0.0000
630	0.274121	0.4112	1.044	0.4112	4.9332	0.0000	0.0000
630.2	0.274228	0.4113	1.044	0.4113	4.9351	0.0000	0.0000
630.4	0.274335	0.4115	1.044	0.4115	4.9371	0.0000	0.0000
630.6	0.274442	0.4117	1.044	0.4117	4.9390	0.0000	0.0000
630.8	0.274549	0.4118	1.044	0.4118	4.9409	0.0000	0.0000
631	0.274656	0.4120	1.044	0.4120	4.9428	0.0000	0.0000
631.2	0.274762	0.4121	1.044	0.4121	4.9448	0.0000	0.0000
631.4	0.274869	0.4123	1.044	0.4123	4.9467	0.0000	0.0000
631.6	0.274976	0.4125	1.044	0.4125	4.9486	0.0000	0.0000
631.8	0.275083	0.4126	1.044	0.4126	4.9505	0.0000	0.0000
632	0.27519	0.4128	1.044	0.4128	4.9525	0.0000	0.0000
632.2	0.275297	0.4129	1.044	0.4129	4.9544	0.0000	0.0000
632.4	0.275404	0.4131	1.044	0.4131	4.9563	0.0000	0.0000
632.6	0.275511	0.4133	1.044	0.4133	4.9582	0.0000	0.0000
632.8	0.275618	0.4134	1.044	0.4134	4.9602	0.0000	0.0000
633	0.275725	0.4136	1.044	0.4136	4.9621	0.0000	0.0000
633.2	0.275832	0.4137	1.044	0.4137	4.9640	0.0000	0.0000
633.4	0.27594	0.4139	1.044	0.4139	4.9659	0.0000	0.0000
633.6	0.276047	0.4141	1.044	0.4141	4.9679	0.0000	0.0000
633.8	0.276154	0.4142	1.044	0.4142	4.9698	0.0000	0.0000
634	0.276261	0.4144	1.044	0.4144	4.9717	0.0000	0.0000
634.2	0.276368	0.4146	1.044	0.4146	4.9737	0.0000	0.0000
634.4	0.276475	0.4147	1.044	0.4147	4.9756	0.0000	0.0000
634.6	0.276583	0.4149	1.044	0.4149	4.9775	0.0000	0.0000
634.8	0.27669	0.4150	1.044	0.4150	4.9795	0.0000	0.0000
635	0.276797	0.4152	1.044	0.4152	4.9814	0.0000	0.0000
635.2	0.276904	0.4154	1.044	0.4154	4.9833	0.0000	0.0000
635.4	0.277012	0.4155	1.044	0.4155	4.9852	0.0000	0.0000
635.6	0.277119	0.4157	1.044	0.4157	4.9872	0.0000	0.0000
635.8	0.277226	0.4158	1.044	0.4158	4.9891	0.0000	0.0000
636	0.277334	0.4160	1.044	0.4160	4.9910	0.0000	0.0000
636.2	0.277441	0.4162	1.044	0.4162	4.9930	0.0000	0.0000
636.4	0.277548	0.4163	1.044	0.4163	4.9949	0.0000	0.0000
636.6	0.277656	0.4165	1.044	0.4165	4.9968	0.0000	0.0000
636.8	0.277763	0.4166	1.044	0.4166	4.9988	0.0000	0.0000
637	0.277871	0.4168	1.044	0.4168	5.0007	0.0000	0.0000
637.2	0.277978	0.4170	1.044	0.4170	5.0026	0.0000	0.0000
637.4	0.278086	0.4171	1.044	0.4171	5.0046	0.0000	0.0000
637.6	0.278193	0.4173	1.044	0.4173	5.0065	0.0000	0.0000

637.8	0.278301	0.4175	1.044	0.4175	5.0084	0.0000	0.0000
638	0.278408	0.4176	1.044	0.4176	5.0104	0.0000	0.0000
638.2	0.278516	0.4178	1.044	0.4178	5.0123	0.0000	0.0000
638.4	0.278624	0.4179	1.044	0.4179	5.0143	0.0000	0.0000
638.6	0.278731	0.4181	1.044	0.4181	5.0162	0.0000	0.0000
638.8	0.278839	0.4183	1.044	0.4183	5.0181	0.0000	0.0000
639	0.278946	0.4184	1.044	0.4184	5.0201	0.0000	0.0000
639.2	0.279054	0.4186	1.044	0.4186	5.0220	0.0000	0.0000
639.4	0.279162	0.4187	1.044	0.4187	5.0239	0.0000	0.0000
639.6	0.27927	0.4189	1.044	0.4189	5.0259	0.0000	0.0000
639.8	0.279377	0.4191	1.044	0.4191	5.0278	0.0000	0.0000
640	0.279485	0.4192	1.044	0.4192	5.0298	0.0000	0.0000
640.2	0.279593	0.4194	1.044	0.4194	5.0317	0.0000	0.0000
640.4	0.279701	0.4196	1.044	0.4196	5.0336	0.0000	0.0000
640.6	0.279808	0.4197	1.044	0.4197	5.0356	0.0000	0.0000
640.8	0.279916	0.4199	1.044	0.4199	5.0375	0.0000	0.0000
641	0.280024	0.4200	1.044	0.4200	5.0395	0.0000	0.0000
641.2	0.280132	0.4202	1.044	0.4202	5.0414	0.0000	0.0000
641.4	0.28024	0.4204	1.044	0.4204	5.0433	0.0000	0.0000
641.6	0.280348	0.4205	1.044	0.4205	5.0453	0.0000	0.0000
641.8	0.280456	0.4207	1.044	0.4207	5.0472	0.0000	0.0000
642	0.280564	0.4208	1.044	0.4208	5.0492	0.0000	0.0000
642.2	0.280672	0.4210	1.044	0.4210	5.0511	0.0000	0.0000
642.4	0.28078	0.4212	1.044	0.4212	5.0531	0.0000	0.0000
642.6	0.280888	0.4213	1.044	0.4213	5.0550	0.0000	0.0000
642.8	0.280996	0.4215	1.044	0.4215	5.0569	0.0000	0.0000
643	0.281104	0.4217	1.044	0.4217	5.0589	0.0000	0.0000
643.2	0.281212	0.4218	1.044	0.4218	5.0608	0.0000	0.0000
643.4	0.28132	0.4220	1.044	0.4220	5.0628	0.0000	0.0000
643.6	0.281428	0.4221	1.044	0.4221	5.0647	0.0000	0.0000
643.8	0.281536	0.4223	1.044	0.4223	5.0667	0.0000	0.0000
644	0.281644	0.4225	1.044	0.4225	5.0686	0.0000	0.0000
644.2	0.281752	0.4226	1.044	0.4226	5.0706	0.0000	0.0000
644.4	0.281861	0.4228	1.044	0.4228	5.0725	0.0000	0.0000
644.6	0.281969	0.4230	1.044	0.4230	5.0745	0.0000	0.0000
644.8	0.282077	0.4231	1.044	0.4231	5.0764	0.0000	0.0000
645	0.282185	0.4233	1.044	0.4233	5.0784	0.0000	0.0000
645.2	0.282294	0.4234	1.044	0.4234	5.0803	0.0000	0.0000
645.4	0.282402	0.4236	1.044	0.4236	5.0823	0.0000	0.0000
645.6	0.28251	0.4238	1.044	0.4238	5.0842	0.0000	0.0000
645.8	0.282618	0.4239	1.044	0.4239	5.0862	0.0000	0.0000
646	0.282727	0.4241	1.044	0.4241	5.0881	0.0000	0.0000
646.2	0.282835	0.4243	1.044	0.4243	5.0901	0.0000	0.0000
646.4	0.282944	0.4244	1.044	0.4244	5.0920	0.0000	0.0000
646.6	0.283052	0.4246	1.044	0.4246	5.0940	0.0000	0.0000
646.8	0.28316	0.4247	1.044	0.4247	5.0959	0.0000	0.0000
647	0.283269	0.4249	1.044	0.4249	5.0979	0.0000	0.0000

647.2	0.283377	0.4251	1.044	0.4251	5.0998	0.0000	0.0000
647.4	0.283486	0.4252	1.044	0.4252	5.1018	0.0000	0.0000
647.6	0.283594	0.4254	1.044	0.4254	5.1037	0.0000	0.0000
647.8	0.283703	0.4256	1.044	0.4256	5.1057	0.0000	0.0000
648	0.283811	0.4257	1.044	0.4257	5.1076	0.0000	0.0000
648.2	0.28392	0.4259	1.044	0.4259	5.1096	0.0000	0.0000
648.4	0.284029	0.4260	1.044	0.4260	5.1115	0.0000	0.0000
648.6	0.284137	0.4262	1.044	0.4262	5.1135	0.0000	0.0000
648.8	0.284246	0.4264	1.044	0.4264	5.1154	0.0000	0.0000
649	0.284355	0.4265	1.044	0.4265	5.1174	0.0000	0.0000
649.2	0.284463	0.4267	1.044	0.4267	5.1194	0.0000	0.0000
649.4	0.284572	0.4269	1.044	0.4269	5.1213	0.0000	0.0000
649.6	0.284681	0.4270	1.044	0.4270	5.1233	0.0000	0.0000
649.8	0.284789	0.4272	1.044	0.4272	5.1252	0.0000	0.0000
650	0.284898	0.4273	1.044	0.4273	5.1272	0.0000	0.0000
650.2	0.285007	0.4275	1.044	0.4275	5.1291	0.0000	0.0000
650.4	0.285116	0.4277	1.044	0.4277	5.1311	0.0000	0.0000
650.6	0.285225	0.4278	1.044	0.4278	5.1331	0.0000	0.0000
650.8	0.285333	0.4280	1.044	0.4280	5.1350	0.0000	0.0000
651	0.285442	0.4282	1.044	0.4282	5.1370	0.0000	0.0000
651.2	0.285551	0.4283	1.044	0.4283	5.1389	0.0000	0.0000
651.4	0.28566	0.4285	1.044	0.4285	5.1409	0.0000	0.0000
651.6	0.285769	0.4287	1.044	0.4287	5.1429	0.0000	0.0000
651.8	0.285878	0.4288	1.044	0.4288	5.1448	0.0000	0.0000
652	0.285987	0.4290	1.044	0.4290	5.1468	0.0000	0.0000
652.2	0.286096	0.4291	1.044	0.4291	5.1487	0.0000	0.0000
652.4	0.286205	0.4293	1.044	0.4293	5.1507	0.0000	0.0000
652.6	0.286314	0.4295	1.044	0.4295	5.1527	0.0000	0.0000
652.8	0.286423	0.4296	1.044	0.4296	5.1546	0.0000	0.0000
653	0.286532	0.4298	1.044	0.4298	5.1566	0.0000	0.0000
653.2	0.286641	0.4300	1.044	0.4300	5.1586	0.0000	0.0000
653.4	0.28675	0.4301	1.044	0.4301	5.1605	0.0000	0.0000
653.6	0.286859	0.4303	1.044	0.4303	5.1625	0.0000	0.0000
653.8	0.286968	0.4305	1.044	0.4305	5.1644	0.0000	0.0000
654	0.287078	0.4306	1.044	0.4306	5.1664	0.0000	0.0000
654.2	0.287187	0.4308	1.044	0.4308	5.1684	0.0000	0.0000
654.4	0.287296	0.4309	1.044	0.4309	5.1703	0.0000	0.0000
654.6	0.287405	0.4311	1.044	0.4311	5.1723	0.0000	0.0000
654.8	0.287514	0.4313	1.044	0.4313	5.1743	0.0000	0.0000
655	0.287624	0.4314	1.044	0.4314	5.1762	0.0000	0.0000
655.2	0.287733	0.4316	1.044	0.4316	5.1782	0.0000	0.0000
655.4	0.287842	0.4318	1.044	0.4318	5.1802	0.0000	0.0000
655.6	0.287952	0.4319	1.044	0.4319	5.1821	0.0000	0.0000
655.8	0.288061	0.4321	1.044	0.4321	5.1841	0.0000	0.0000
656	0.28817	0.4323	1.044	0.4323	5.1861	0.0000	0.0000
656.2	0.28828	0.4324	1.044	0.4324	5.1881	0.0000	0.0000
656.4	0.288389	0.4326	1.044	0.4326	5.1900	0.0000	0.0000

656.6	0.288499	0.4327	1.044	0.4327	5.1920	0.0000	0.0000
656.8	0.288608	0.4329	1.044	0.4329	5.1940	0.0000	0.0000
657	0.288717	0.4331	1.044	0.4331	5.1959	0.0000	0.0000
657.2	0.288827	0.4332	1.044	0.4332	5.1979	0.0000	0.0000
657.4	0.288937	0.4334	1.044	0.4334	5.1999	0.0000	0.0000
657.6	0.289046	0.4336	1.044	0.4336	5.2018	0.0000	0.0000
657.8	0.289156	0.4337	1.044	0.4337	5.2038	0.0000	0.0000
658	0.289265	0.4339	1.044	0.4339	5.2058	0.0000	0.0000
658.2	0.289375	0.4341	1.044	0.4341	5.2078	0.0000	0.0000
658.4	0.289484	0.4342	1.044	0.4342	5.2097	0.0000	0.0000
658.6	0.289594	0.4344	1.044	0.4344	5.2117	0.0000	0.0000
658.8	0.289704	0.4346	1.044	0.4346	5.2137	0.0000	0.0000
659	0.289813	0.4347	1.044	0.4347	5.2157	0.0000	0.0000
659.2	0.289923	0.4349	1.044	0.4349	5.2176	0.0000	0.0000
659.4	0.290033	0.4350	1.044	0.4350	5.2196	0.0000	0.0000
659.6	0.290143	0.4352	1.044	0.4352	5.2216	0.0000	0.0000
659.8	0.290252	0.4354	1.044	0.4354	5.2236	0.0000	0.0000
660	0.290362	0.4355	1.044	0.4355	5.2255	0.0000	0.0000
660.2	0.290472	0.4357	1.044	0.4357	5.2275	0.0000	0.0000
660.4	0.290582	0.4359	1.044	0.4359	5.2295	0.0000	0.0000
660.6	0.290692	0.4360	1.044	0.4360	5.2315	0.0000	0.0000
660.8	0.290802	0.4362	1.044	0.4362	5.2334	0.0000	0.0000
661	0.290911	0.4364	1.044	0.4364	5.2354	0.0000	0.0000
661.2	0.291021	0.4365	1.044	0.4365	5.2374	0.0000	0.0000
661.4	0.291131	0.4367	1.044	0.4367	5.2394	0.0000	0.0000
661.6	0.291241	0.4369	1.044	0.4369	5.2414	0.0000	0.0000
661.8	0.291351	0.4370	1.044	0.4370	5.2433	0.0000	0.0000
662	0.291461	0.4372	1.044	0.4372	5.2453	0.0000	0.0000
662.2	0.291571	0.4374	1.044	0.4374	5.2473	0.0000	0.0000
662.4	0.291681	0.4375	1.044	0.4375	5.2493	0.0000	0.0000
662.6	0.291791	0.4377	1.044	0.4377	5.2513	0.0000	0.0000
662.8	0.291901	0.4379	1.044	0.4379	5.2532	0.0000	0.0000
663	0.292012	0.4380	1.044	0.4380	5.2552	0.0000	0.0000
663.2	0.292122	0.4382	1.044	0.4382	5.2572	0.0000	0.0000
663.4	0.292232	0.4383	1.044	0.4383	5.2592	0.0000	0.0000
663.6	0.292342	0.4385	1.044	0.4385	5.2612	0.0000	0.0000
663.8	0.292452	0.4387	1.044	0.4387	5.2631	0.0000	0.0000
664	0.292562	0.4388	1.044	0.4388	5.2651	0.0000	0.0000
664.2	0.292673	0.4390	1.044	0.4390	5.2671	0.0000	0.0000
664.4	0.292783	0.4392	1.044	0.4392	5.2691	0.0000	0.0000
664.6	0.292893	0.4393	1.044	0.4393	5.2711	0.0000	0.0000
664.8	0.293003	0.4395	1.044	0.4395	5.2731	0.0000	0.0000
665	0.293114	0.4397	1.044	0.4397	5.2751	0.0000	0.0000
665.2	0.293224	0.4398	1.044	0.4398	5.2770	0.0000	0.0000
665.4	0.293334	0.4400	1.044	0.4400	5.2790	0.0000	0.0000
665.6	0.293445	0.4402	1.044	0.4402	5.2810	0.0000	0.0000
665.8	0.293555	0.4403	1.044	0.4403	5.2830	0.0000	0.0000

666	0.293666	0.4405	1.044	0.4405	5.2850	0.0000	0.0000
666.2	0.293776	0.4407	1.044	0.4407	5.2870	0.0000	0.0000
666.4	0.293887	0.4408	1.044	0.4408	5.2890	0.0000	0.0000
666.6	0.293997	0.4410	1.044	0.4410	5.2910	0.0000	0.0000
666.8	0.294108	0.4412	1.044	0.4412	5.2929	0.0000	0.0000
667	0.294218	0.4413	1.044	0.4413	5.2949	0.0000	0.0000
667.2	0.294329	0.4415	1.044	0.4415	5.2969	0.0000	0.0000
667.4	0.294439	0.4417	1.044	0.4417	5.2989	0.0000	0.0000
667.6	0.29455	0.4418	1.044	0.4418	5.3009	0.0000	0.0000
667.8	0.29466	0.4420	1.044	0.4420	5.3029	0.0000	0.0000
668	0.294771	0.4422	1.044	0.4422	5.3049	0.0000	0.0000
668.2	0.294882	0.4423	1.044	0.4423	5.3069	0.0000	0.0000
668.4	0.294992	0.4425	1.044	0.4425	5.3089	0.0000	0.0000
668.6	0.295103	0.4427	1.044	0.4427	5.3109	0.0000	0.0000
668.8	0.295214	0.4428	1.044	0.4428	5.3129	0.0000	0.0000
669	0.295325	0.4430	1.044	0.4430	5.3148	0.0000	0.0000
669.2	0.295435	0.4432	1.044	0.4432	5.3168	0.0000	0.0000
669.4	0.295546	0.4433	1.044	0.4433	5.3188	0.0000	0.0000
669.6	0.295657	0.4435	1.044	0.4435	5.3208	0.0000	0.0000
669.8	0.295768	0.4437	1.044	0.4437	5.3228	0.0000	0.0000
670	0.295879	0.4438	1.044	0.4438	5.3248	0.0000	0.0000
670.2	0.29599	0.4440	1.044	0.4440	5.3268	0.0000	0.0000
670.4	0.2961	0.4442	1.044	0.4442	5.3288	0.0000	0.0000
670.6	0.296211	0.4443	1.044	0.4443	5.3308	0.0000	0.0000
670.8	0.296322	0.4445	1.044	0.4445	5.3328	0.0000	0.0000
671	0.296433	0.4446	1.044	0.4446	5.3348	0.0000	0.0000
671.2	0.296544	0.4448	1.044	0.4448	5.3368	0.0000	0.0000
671.4	0.296655	0.4450	1.044	0.4450	5.3388	0.0000	0.0000
671.6	0.296766	0.4451	1.044	0.4451	5.3408	0.0000	0.0000
671.8	0.296877	0.4453	1.044	0.4453	5.3428	0.0000	0.0000
672	0.296988	0.4455	1.044	0.4455	5.3448	0.0000	0.0000
672.2	0.297099	0.4456	1.044	0.4456	5.3468	0.0000	0.0000
672.4	0.297211	0.4458	1.044	0.4458	5.3488	0.0000	0.0000
672.6	0.297322	0.4460	1.044	0.4460	5.3508	0.0000	0.0000
672.8	0.297433	0.4461	1.044	0.4461	5.3528	0.0000	0.0000
673	0.297544	0.4463	1.044	0.4463	5.3548	0.0000	0.0000
673.2	0.297655	0.4465	1.044	0.4465	5.3568	0.0000	0.0000
673.4	0.297766	0.4466	1.044	0.4466	5.3588	0.0000	0.0000
673.6	0.297878	0.4468	1.044	0.4468	5.3608	0.0000	0.0000
673.8	0.297989	0.4470	1.044	0.4470	5.3628	0.0000	0.0000
674	0.2981	0.4472	1.044	0.4472	5.3648	0.0000	0.0000
674.2	0.298212	0.4473	1.044	0.4473	5.3668	0.0000	0.0000
674.4	0.298323	0.4475	1.044	0.4475	5.3688	0.0000	0.0000
674.6	0.298434	0.4477	1.044	0.4477	5.3708	0.0000	0.0000
674.8	0.298546	0.4478	1.044	0.4478	5.3728	0.0000	0.0000
675	0.298657	0.4480	1.044	0.4480	5.3748	0.0000	0.0000
675.2	0.298768	0.4482	1.044	0.4482	5.3768	0.0000	0.0000

675.4	0.29888	0.4483	1.044	0.4483	5.3788	0.0000	0.0000
675.6	0.298991	0.4485	1.044	0.4485	5.3808	0.0000	0.0000
675.8	0.299103	0.4487	1.044	0.4487	5.3828	0.0000	0.0000
676	0.299214	0.4488	1.044	0.4488	5.3849	0.0000	0.0000
676.2	0.299326	0.4490	1.044	0.4490	5.3869	0.0000	0.0000
676.4	0.299437	0.4492	1.044	0.4492	5.3889	0.0000	0.0000
676.6	0.299549	0.4493	1.044	0.4493	5.3909	0.0000	0.0000
676.8	0.299661	0.4495	1.044	0.4495	5.3929	0.0000	0.0000
677	0.299772	0.4497	1.044	0.4497	5.3949	0.0000	0.0000
677.2	0.299884	0.4498	1.044	0.4498	5.3969	0.0000	0.0000
677.4	0.299996	0.4500	1.044	0.4500	5.3989	0.0000	0.0000
677.6	0.300107	0.4502	1.044	0.4502	5.4009	0.0000	0.0000
677.8	0.300219	0.4503	1.044	0.4503	5.4029	0.0000	0.0000
678	0.300331	0.4505	1.044	0.4505	5.4049	0.0000	0.0000
678.2	0.300442	0.4507	1.044	0.4507	5.4070	0.0000	0.0000
678.4	0.300554	0.4508	1.044	0.4508	5.4090	0.0000	0.0000
678.6	0.300666	0.4510	1.044	0.4510	5.4110	0.0000	0.0000
678.8	0.300778	0.4512	1.044	0.4512	5.4130	0.0000	0.0000
679	0.30089	0.4513	1.044	0.4513	5.4150	0.0000	0.0000
679.2	0.301002	0.4515	1.044	0.4515	5.4170	0.0000	0.0000
679.4	0.301113	0.4517	1.044	0.4517	5.4190	0.0000	0.0000
679.6	0.301225	0.4518	1.044	0.4518	5.4210	0.0000	0.0000
679.8	0.301337	0.4520	1.044	0.4520	5.4231	0.0000	0.0000
680	0.301449	0.4522	1.044	0.4522	5.4251	0.0000	0.0000
680.2	0.301561	0.4523	1.044	0.4523	5.4271	0.0000	0.0000
680.4	0.301673	0.4525	1.044	0.4525	5.4291	0.0000	0.0000
680.6	0.301785	0.4527	1.044	0.4527	5.4311	0.0000	0.0000
680.8	0.301897	0.4528	1.044	0.4528	5.4331	0.0000	0.0000
681	0.302009	0.4530	1.044	0.4530	5.4352	0.0000	0.0000
681.2	0.302121	0.4532	1.044	0.4532	5.4372	0.0000	0.0000
681.4	0.302233	0.4534	1.044	0.4534	5.4392	0.0000	0.0000
681.6	0.302346	0.4535	1.044	0.4535	5.4412	0.0000	0.0000
681.8	0.302458	0.4537	1.044	0.4537	5.4432	0.0000	0.0000
682	0.30257	0.4539	1.044	0.4539	5.4452	0.0000	0.0000
682.2	0.302682	0.4540	1.044	0.4540	5.4473	0.0000	0.0000
682.4	0.302794	0.4542	1.044	0.4542	5.4493	0.0000	0.0000
682.6	0.302907	0.4544	1.044	0.4544	5.4513	0.0000	0.0000
682.8	0.303019	0.4545	1.044	0.4545	5.4533	0.0000	0.0000
683	0.303131	0.4547	1.044	0.4547	5.4553	0.0000	0.0000
683.2	0.303243	0.4549	1.044	0.4549	5.4574	0.0000	0.0000
683.4	0.303356	0.4550	1.044	0.4550	5.4594	0.0000	0.0000
683.6	0.303468	0.4552	1.044	0.4552	5.4614	0.0000	0.0000
683.8	0.303581	0.4554	1.044	0.4554	5.4634	0.0000	0.0000
684	0.303693	0.4555	1.044	0.4555	5.4655	0.0000	0.0000
684.2	0.303805	0.4557	1.044	0.4557	5.4675	0.0000	0.0000
684.4	0.303918	0.4559	1.044	0.4559	5.4695	0.0000	0.0000
684.6	0.30403	0.4560	1.044	0.4560	5.4715	0.0000	0.0000

684.8	0.304143	0.4562	1.044	0.4562	5.4736	0.0000	0.0000
685	0.304255	0.4564	1.044	0.4564	5.4756	0.0000	0.0000
685.2	0.304368	0.4566	1.044	0.4566	5.4776	0.0000	0.0000
685.4	0.30448	0.4567	1.044	0.4567	5.4796	0.0000	0.0000
685.6	0.304593	0.4569	1.044	0.4569	5.4817	0.0000	0.0000
685.8	0.304706	0.4571	1.044	0.4571	5.4837	0.0000	0.0000
686	0.304818	0.4572	1.044	0.4572	5.4857	0.0000	0.0000
686.2	0.304931	0.4574	1.044	0.4574	5.4877	0.0000	0.0000
686.4	0.305043	0.4576	1.044	0.4576	5.4898	0.0000	0.0000
686.6	0.305156	0.4577	1.044	0.4577	5.4918	0.0000	0.0000
686.8	0.305269	0.4579	1.044	0.4579	5.4938	0.0000	0.0000
687	0.305382	0.4581	1.044	0.4581	5.4959	0.0000	0.0000
687.2	0.305494	0.4582	1.044	0.4582	5.4979	0.0000	0.0000
687.4	0.305607	0.4584	1.044	0.4584	5.4999	0.0000	0.0000
687.6	0.30572	0.4586	1.044	0.4586	5.5019	0.0000	0.0000
687.8	0.305833	0.4587	1.044	0.4587	5.5040	0.0000	0.0000
688	0.305946	0.4589	1.044	0.4589	5.5060	0.0000	0.0000
688.2	0.306059	0.4591	1.044	0.4591	5.5080	0.0000	0.0000
688.4	0.306171	0.4593	1.044	0.4593	5.5101	0.0000	0.0000
688.6	0.306284	0.4594	1.044	0.4594	5.5121	0.0000	0.0000
688.8	0.306397	0.4596	1.044	0.4596	5.5141	0.0000	0.0000
689	0.30651	0.4598	1.044	0.4598	5.5162	0.0000	0.0000
689.2	0.306623	0.4599	1.044	0.4599	5.5182	0.0000	0.0000
689.4	0.306736	0.4601	1.044	0.4601	5.5202	0.0000	0.0000
689.6	0.306849	0.4603	1.044	0.4603	5.5223	0.0000	0.0000
689.8	0.306962	0.4604	1.044	0.4604	5.5243	0.0000	0.0000
690	0.307075	0.4606	1.044	0.4606	5.5263	0.0000	0.0000
690.2	0.307189	0.4608	1.044	0.4608	5.5284	0.0000	0.0000
690.4	0.307302	0.4610	1.044	0.4610	5.5304	0.0000	0.0000
690.6	0.307415	0.4611	1.044	0.4611	5.5324	0.0000	0.0000
690.8	0.307528	0.4613	1.044	0.4613	5.5345	0.0000	0.0000
691	0.307641	0.4615	1.044	0.4615	5.5365	0.0000	0.0000
691.2	0.307754	0.4616	1.044	0.4616	5.5386	0.0000	0.0000
691.4	0.307868	0.4618	1.044	0.4618	5.5406	0.0000	0.0000
691.6	0.307981	0.4620	1.044	0.4620	5.5426	0.0000	0.0000
691.8	0.308094	0.4621	1.044	0.4621	5.5447	0.0000	0.0000
692	0.308208	0.4623	1.044	0.4623	5.5467	0.0000	0.0000
692.2	0.308321	0.4625	1.044	0.4625	5.5488	0.0000	0.0000
692.4	0.308434	0.4627	1.044	0.4627	5.5508	0.0000	0.0000
692.6	0.308548	0.4628	1.044	0.4628	5.5528	0.0000	0.0000
692.8	0.308661	0.4630	1.044	0.4630	5.5549	0.0000	0.0000
693	0.308775	0.4632	1.044	0.4632	5.5569	0.0000	0.0000
693.2	0.308888	0.4633	1.044	0.4633	5.5590	0.0000	0.0000
693.4	0.309001	0.4635	1.044	0.4635	5.5610	0.0000	0.0000
693.6	0.309115	0.4637	1.044	0.4637	5.5630	0.0000	0.0000
693.8	0.309228	0.4638	1.044	0.4638	5.5651	0.0000	0.0000
694	0.309342	0.4640	1.044	0.4640	5.5671	0.0000	0.0000

694.2	0.309456	0.4642	1.044	0.4642	5.5692	0.0000	0.0000
694.4	0.309569	0.4644	1.044	0.4644	5.5712	0.0000	0.0000
694.6	0.309683	0.4645	1.044	0.4645	5.5733	0.0000	0.0000
694.8	0.309796	0.4647	1.044	0.4647	5.5753	0.0000	0.0000
695	0.30991	0.4649	1.044	0.4649	5.5774	0.0000	0.0000
695.2	0.310024	0.4650	1.044	0.4650	5.5794	0.0000	0.0000
695.4	0.310137	0.4652	1.044	0.4652	5.5815	0.0000	0.0000
695.6	0.310251	0.4654	1.044	0.4654	5.5835	0.0000	0.0000
695.8	0.310365	0.4655	1.044	0.4655	5.5855	0.0000	0.0000
696	0.310479	0.4657	1.044	0.4657	5.5876	0.0000	0.0000
696.2	0.310593	0.4659	1.044	0.4659	5.5896	0.0000	0.0000
696.4	0.310706	0.4661	1.044	0.4661	5.5917	0.0000	0.0000
696.6	0.31082	0.4662	1.044	0.4662	5.5937	0.0000	0.0000
696.8	0.310934	0.4664	1.044	0.4664	5.5958	0.0000	0.0000
697	0.311048	0.4666	1.044	0.4666	5.5978	0.0000	0.0000
697.2	0.311162	0.4667	1.044	0.4667	5.5999	0.0000	0.0000
697.4	0.311276	0.4669	1.044	0.4669	5.6019	0.0000	0.0000
697.6	0.31139	0.4671	1.044	0.4671	5.6040	0.0000	0.0000
697.8	0.311504	0.4673	1.044	0.4673	5.6060	0.0000	0.0000
698	0.311618	0.4674	1.044	0.4674	5.6081	0.0000	0.0000
698.2	0.311732	0.4676	1.044	0.4676	5.6101	0.0000	0.0000
698.4	0.311846	0.4678	1.044	0.4678	5.6122	0.0000	0.0000
698.6	0.31196	0.4679	1.044	0.4679	5.6143	0.0000	0.0000
698.8	0.312074	0.4681	1.044	0.4681	5.6163	0.0000	0.0000
699	0.312188	0.4683	1.044	0.4683	5.6184	0.0000	0.0000
699.2	0.312302	0.4685	1.044	0.4685	5.6204	0.0000	0.0000
699.4	0.312417	0.4686	1.044	0.4686	5.6225	0.0000	0.0000
699.6	0.312531	0.4688	1.044	0.4688	5.6245	0.0000	0.0000
699.8	0.312645	0.4690	1.044	0.4690	5.6266	0.0000	0.0000
700	0.312759	0.4691	1.044	0.4691	5.6286	0.0000	0.0000
700.2	0.312874	0.4693	1.044	0.4693	5.6307	0.0000	0.0000
700.4	0.312988	0.4695	1.044	0.4695	5.6328	0.0000	0.0000
700.6	0.313102	0.4697	1.044	0.4697	5.6348	0.0000	0.0000
700.8	0.313217	0.4698	1.044	0.4698	5.6369	0.0000	0.0000
701	0.313331	0.4700	1.044	0.4700	5.6389	0.0000	0.0000
701.2	0.313445	0.4702	1.044	0.4702	5.6410	0.0000	0.0000
701.4	0.31356	0.4703	1.044	0.4703	5.6430	0.0000	0.0000
701.6	0.313674	0.4705	1.044	0.4705	5.6451	0.0000	0.0000
701.8	0.313789	0.4707	1.044	0.4707	5.6472	0.0000	0.0000
702	0.313903	0.4709	1.044	0.4709	5.6492	0.0000	0.0000
702.2	0.314018	0.4710	1.044	0.4710	5.6513	0.0000	0.0000
702.4	0.314132	0.4712	1.044	0.4712	5.6533	0.0000	0.0000
702.6	0.314247	0.4714	1.044	0.4714	5.6554	0.0000	0.0000
702.8	0.314361	0.4715	1.044	0.4715	5.6575	0.0000	0.0000
703	0.314476	0.4717	1.044	0.4717	5.6595	0.0000	0.0000
703.2	0.314591	0.4719	1.044	0.4719	5.6616	0.0000	0.0000
703.4	0.314705	0.4721	1.044	0.4721	5.6637	0.0000	0.0000

703.6	0.31482	0.4722	1.044	0.4722	5.6657	0.0000	0.0000
703.8	0.314935	0.4724	1.044	0.4724	5.6678	0.0000	0.0000
704	0.315049	0.4726	1.044	0.4726	5.6699	0.0000	0.0000
704.2	0.315164	0.4727	1.044	0.4727	5.6719	0.0000	0.0000
704.4	0.315279	0.4729	1.044	0.4729	5.6740	0.0000	0.0000
704.6	0.315394	0.4731	1.044	0.4731	5.6761	0.0000	0.0000
704.8	0.315509	0.4733	1.044	0.4733	5.6781	0.0000	0.0000
705	0.315623	0.4734	1.044	0.4734	5.6802	0.0000	0.0000
705.2	0.315738	0.4736	1.044	0.4736	5.6823	0.0000	0.0000
705.4	0.315853	0.4738	1.044	0.4738	5.6843	0.0000	0.0000
705.6	0.315968	0.4740	1.044	0.4740	5.6864	0.0000	0.0000
705.8	0.316083	0.4741	1.044	0.4741	5.6885	0.0000	0.0000
706	0.316198	0.4743	1.044	0.4743	5.6905	0.0000	0.0000
706.2	0.316313	0.4745	1.044	0.4745	5.6926	0.0000	0.0000
706.4	0.316428	0.4746	1.044	0.4746	5.6947	0.0000	0.0000
706.6	0.316543	0.4748	1.044	0.4748	5.6967	0.0000	0.0000
706.8	0.316658	0.4750	1.044	0.4750	5.6988	0.0000	0.0000
707	0.316773	0.4752	1.044	0.4752	5.7009	0.0000	0.0000
707.2	0.316888	0.4753	1.044	0.4753	5.7030	0.0000	0.0000
707.4	0.317003	0.4755	1.044	0.4755	5.7050	0.0000	0.0000
707.6	0.317119	0.4757	1.044	0.4757	5.7071	0.0000	0.0000
707.8	0.317234	0.4759	1.044	0.4759	5.7092	0.0000	0.0000
708	0.317349	0.4760	1.044	0.4760	5.7112	0.0000	0.0000
708.2	0.317464	0.4762	1.044	0.4762	5.7133	0.0000	0.0000
708.4	0.31758	0.4764	1.044	0.4764	5.7154	0.0000	0.0000
708.6	0.317695	0.4765	1.044	0.4765	5.7175	0.0000	0.0000
708.8	0.31781	0.4767	1.044	0.4767	5.7195	0.0000	0.0000
709	0.317926	0.4769	1.044	0.4769	5.7216	0.0000	0.0000
709.2	0.318041	0.4771	1.044	0.4771	5.7237	0.0000	0.0000
709.4	0.318156	0.4772	1.044	0.4772	5.7258	0.0000	0.0000
709.6	0.318272	0.4774	1.044	0.4774	5.7279	0.0000	0.0000
709.8	0.318387	0.4776	1.044	0.4776	5.7299	0.0000	0.0000
710	0.318503	0.4778	1.044	0.4778	5.7320	0.0000	0.0000
710.2	0.318618	0.4779	1.044	0.4779	5.7341	0.0000	0.0000
710.4	0.318734	0.4781	1.044	0.4781	5.7362	0.0000	0.0000
710.6	0.318849	0.4783	1.044	0.4783	5.7382	0.0000	0.0000
710.8	0.318965	0.4784	1.044	0.4784	5.7403	0.0000	0.0000
711	0.31908	0.4786	1.044	0.4786	5.7424	0.0000	0.0000
711.2	0.319196	0.4788	1.044	0.4788	5.7445	0.0000	0.0000
711.4	0.319311	0.4790	1.044	0.4790	5.7466	0.0000	0.0000
711.6	0.319427	0.4791	1.044	0.4791	5.7486	0.0000	0.0000
711.8	0.319543	0.4793	1.044	0.4793	5.7507	0.0000	0.0000
712	0.319659	0.4795	1.044	0.4795	5.7528	0.0000	0.0000
712.2	0.319774	0.4797	1.044	0.4797	5.7549	0.0000	0.0000
712.4	0.31989	0.4798	1.044	0.4798	5.7570	0.0000	0.0000
712.6	0.320006	0.4800	1.044	0.4800	5.7591	0.0000	0.0000
712.8	0.320122	0.4802	1.044	0.4802	5.7611	0.0000	0.0000

713	0.320237	0.4804	1.044	0.4804	5.7632	0.0000	0.0000
713.2	0.320353	0.4805	1.044	0.4805	5.7653	0.0000	0.0000
713.4	0.320469	0.4807	1.044	0.4807	5.7674	0.0000	0.0000
713.6	0.320585	0.4809	1.044	0.4809	5.7695	0.0000	0.0000
713.8	0.320701	0.4811	1.044	0.4811	5.7716	0.0000	0.0000
714	0.320817	0.4812	1.044	0.4812	5.7737	0.0000	0.0000
714.2	0.320933	0.4814	1.044	0.4814	5.7757	0.0000	0.0000
714.4	0.321049	0.4816	1.044	0.4816	5.7778	0.0000	0.0000
714.6	0.321165	0.4817	1.044	0.4817	5.7799	0.0000	0.0000
714.8	0.321281	0.4819	1.044	0.4819	5.7820	0.0000	0.0000
715	0.321397	0.4821	1.044	0.4821	5.7841	0.0000	0.0000
715.2	0.321513	0.4823	1.044	0.4823	5.7862	0.0000	0.0000
715.4	0.321629	0.4824	1.044	0.4824	5.7883	0.0000	0.0000
715.6	0.321745	0.4826	1.044	0.4826	5.7904	0.0000	0.0000
715.8	0.321862	0.4828	1.044	0.4828	5.7925	0.0000	0.0000
716	0.321978	0.4830	1.044	0.4830	5.7946	0.0000	0.0000
716.2	0.322094	0.4831	1.044	0.4831	5.7966	0.0000	0.0000
716.4	0.32221	0.4833	1.044	0.4833	5.7987	0.0000	0.0000
716.6	0.322327	0.4835	1.044	0.4835	5.8008	0.0000	0.0000
716.8	0.322443	0.4837	1.044	0.4837	5.8029	0.0000	0.0000
717	0.322559	0.4838	1.044	0.4838	5.8050	0.0000	0.0000
717.2	0.322676	0.4840	1.044	0.4840	5.8071	0.0000	0.0000
717.4	0.322792	0.4842	1.044	0.4842	5.8092	0.0000	0.0000
717.6	0.322908	0.4844	1.044	0.4844	5.8113	0.0000	0.0000
717.8	0.323025	0.4845	1.044	0.4845	5.8134	0.0000	0.0000
718	0.323141	0.4847	1.044	0.4847	5.8155	0.0000	0.0000
718.2	0.323258	0.4849	1.044	0.4849	5.8176	0.0000	0.0000
718.4	0.323374	0.4851	1.044	0.4851	5.8197	0.0000	0.0000
718.6	0.323491	0.4852	1.044	0.4852	5.8218	0.0000	0.0000
718.8	0.323607	0.4854	1.044	0.4854	5.8239	0.0000	0.0000
719	0.323724	0.4856	1.044	0.4856	5.8260	0.0000	0.0000
719.2	0.323841	0.4858	1.044	0.4858	5.8281	0.0000	0.0000
719.4	0.323957	0.4859	1.044	0.4859	5.8302	0.0000	0.0000
719.6	0.324074	0.4861	1.044	0.4861	5.8323	0.0000	0.0000
719.8	0.324191	0.4863	1.044	0.4863	5.8344	0.0000	0.0000
720	0.324307	0.4865	1.044	0.4865	5.8365	0.0000	0.0000
720.2	0.324424	0.4866	1.044	0.4866	5.8386	0.0000	0.0000
720.4	0.324541	0.4868	1.044	0.4868	5.8407	0.0000	0.0000
720.6	0.324657	0.4870	1.044	0.4870	5.8428	0.0000	0.0000
720.8	0.324774	0.4872	1.044	0.4872	5.8449	0.0000	0.0000
721	0.324891	0.4873	1.044	0.4873	5.8470	0.0000	0.0000
721.2	0.325008	0.4875	1.044	0.4875	5.8491	0.0000	0.0000
721.4	0.325125	0.4877	1.044	0.4877	5.8512	0.0000	0.0000
721.6	0.325242	0.4879	1.044	0.4879	5.8533	0.0000	0.0000
721.8	0.325359	0.4880	1.044	0.4880	5.8554	0.0000	0.0000
722	0.325476	0.4882	1.044	0.4882	5.8575	0.0000	0.0000
722.2	0.325593	0.4884	1.044	0.4884	5.8596	0.0000	0.0000

722.4	0.32571	0.4886	1.044	0.4886	5.8617	0.0000	0.0000
722.6	0.325827	0.4887	1.044	0.4887	5.8638	0.0000	0.0000
722.8	0.325944	0.4889	1.044	0.4889	5.8659	0.0000	0.0000
723	0.326061	0.4891	1.044	0.4891	5.8680	0.0000	0.0000
723.2	0.326178	0.4893	1.044	0.4893	5.8702	0.0000	0.0000
723.4	0.326295	0.4894	1.044	0.4894	5.8723	0.0000	0.0000
723.6	0.326412	0.4896	1.044	0.4896	5.8744	0.0000	0.0000
723.8	0.32653	0.4898	1.044	0.4898	5.8765	0.0000	0.0000
724	0.326647	0.4900	1.044	0.4900	5.8786	0.0000	0.0000
724.2	0.326764	0.4901	1.044	0.4901	5.8807	0.0000	0.0000
724.4	0.326881	0.4903	1.044	0.4903	5.8828	0.0000	0.0000
724.6	0.326999	0.4905	1.044	0.4905	5.8849	0.0000	0.0000
724.8	0.327116	0.4907	1.044	0.4907	5.8870	0.0000	0.0000
725	0.327233	0.4908	1.044	0.4908	5.8891	0.0000	0.0000
725.2	0.327351	0.4910	1.044	0.4910	5.8913	0.0000	0.0000
725.4	0.327468	0.4912	1.044	0.4912	5.8934	0.0000	0.0000
725.6	0.327585	0.4914	1.044	0.4914	5.8955	0.0000	0.0000
725.8	0.327703	0.4916	1.044	0.4916	5.8976	0.0000	0.0000
726	0.32782	0.4917	1.044	0.4917	5.8997	0.0000	0.0000
726.2	0.327938	0.4919	1.044	0.4919	5.9018	0.0000	0.0000
726.4	0.328055	0.4921	1.044	0.4921	5.9039	0.0000	0.0000
726.6	0.328173	0.4923	1.044	0.4923	5.9061	0.0000	0.0000
726.8	0.328291	0.4924	1.044	0.4924	5.9082	0.0000	0.0000
727	0.328408	0.4926	1.044	0.4926	5.9103	0.0000	0.0000
727.2	0.328526	0.4928	1.044	0.4928	5.9124	0.0000	0.0000
727.4	0.328643	0.4930	1.044	0.4930	5.9145	0.0000	0.0000
727.6	0.328761	0.4931	1.044	0.4931	5.9166	0.0000	0.0000
727.8	0.328879	0.4933	1.044	0.4933	5.9188	0.0000	0.0000
728	0.328997	0.4935	1.044	0.4935	5.9209	0.0000	0.0000
728.2	0.329114	0.4937	1.044	0.4937	5.9230	0.0000	0.0000
728.4	0.329232	0.4938	1.044	0.4938	5.9251	0.0000	0.0000
728.6	0.32935	0.4940	1.044	0.4940	5.9272	0.0000	0.0000
728.8	0.329468	0.4942	1.044	0.4942	5.9294	0.0000	0.0000
729	0.329586	0.4944	1.044	0.4944	5.9315	0.0000	0.0000
729.2	0.329704	0.4946	1.044	0.4946	5.9336	0.0000	0.0000
729.4	0.329821	0.4947	1.044	0.4947	5.9357	0.0000	0.0000
729.6	0.329939	0.4949	1.044	0.4949	5.9378	0.0000	0.0000
729.8	0.330057	0.4951	1.044	0.4951	5.9400	0.0000	0.0000
730	0.330175	0.4953	1.044	0.4953	5.9421	0.0000	0.0000
730.2	0.330293	0.4954	1.044	0.4954	5.9442	0.0000	0.0000
730.4	0.330411	0.4956	1.044	0.4956	5.9463	0.0000	0.0000
730.6	0.33053	0.4958	1.044	0.4958	5.9485	0.0000	0.0000
730.8	0.330648	0.4960	1.044	0.4960	5.9506	0.0000	0.0000
731	0.330766	0.4961	1.044	0.4961	5.9527	0.0000	0.0000
731.2	0.330884	0.4963	1.044	0.4963	5.9548	0.0000	0.0000
731.4	0.331002	0.4965	1.044	0.4965	5.9570	0.0000	0.0000
731.6	0.33112	0.4967	1.044	0.4967	5.9591	0.0000	0.0000

731.8	0.331239	0.4969	1.044	0.4969	5.9612	0.0000	0.0000
732	0.331357	0.4970	1.044	0.4970	5.9634	0.0000	0.0000
732.2	0.331475	0.4972	1.044	0.4972	5.9655	0.0000	0.0000
732.4	0.331593	0.4974	1.044	0.4974	5.9676	0.0000	0.0000
732.6	0.331712	0.4976	1.044	0.4976	5.9697	0.0000	0.0000
732.8	0.33183	0.4977	1.044	0.4977	5.9719	0.0000	0.0000
733	0.331949	0.4979	1.044	0.4979	5.9740	0.0000	0.0000
733.2	0.332067	0.4981	1.044	0.4981	5.9761	0.0000	0.0000
733.4	0.332185	0.4983	1.044	0.4983	5.9783	0.0000	0.0000
733.6	0.332304	0.4985	1.044	0.4985	5.9804	0.0000	0.0000
733.8	0.332422	0.4986	1.044	0.4986	5.9825	0.0000	0.0000
734	0.332541	0.4988	1.044	0.4988	5.9847	0.0000	0.0000
734.2	0.332659	0.4990	1.044	0.4990	5.9868	0.0000	0.0000
734.4	0.332778	0.4992	1.044	0.4992	5.9889	0.0000	0.0000
734.6	0.332897	0.4993	1.044	0.4993	5.9911	0.0000	0.0000
734.8	0.333015	0.4995	1.044	0.4995	5.9932	0.0000	0.0000
735	0.333134	0.4997	1.044	0.4997	5.9953	0.0000	0.0000
735.2	0.333253	0.4999	1.044	0.4999	5.9975	0.0000	0.0000
735.4	0.333371	0.5001	1.044	0.5001	5.9996	0.0000	0.0000
735.6	0.33349	0.5002	1.044	0.5002	6.0018	0.0000	0.0000
735.8	0.333609	0.5004	1.044	0.5004	6.0039	0.0000	0.0000
736	0.333728	0.5006	1.044	0.5006	6.0060	0.0000	0.0000
736.2	0.333846	0.5008	1.044	0.5008	6.0082	0.0000	0.0000
736.4	0.333965	0.5009	1.044	0.5009	6.0103	0.0000	0.0000
736.6	0.334084	0.5011	1.044	0.5011	6.0124	0.0000	0.0000
736.8	0.334203	0.5013	1.044	0.5013	6.0146	0.0000	0.0000
737	0.334322	0.5015	1.044	0.5015	6.0167	0.0000	0.0000
737.2	0.334441	0.5017	1.044	0.5017	6.0189	0.0000	0.0000
737.4	0.33456	0.5018	1.044	0.5018	6.0210	0.0000	0.0000
737.6	0.334679	0.5020	1.044	0.5020	6.0232	0.0000	0.0000
737.8	0.334798	0.5022	1.044	0.5022	6.0253	0.0000	0.0000
738	0.334917	0.5024	1.044	0.5024	6.0274	0.0000	0.0000
738.2	0.335036	0.5026	1.044	0.5026	6.0296	0.0000	0.0000
738.4	0.335155	0.5027	1.044	0.5027	6.0317	0.0000	0.0000
738.6	0.335274	0.5029	1.044	0.5029	6.0339	0.0000	0.0000
738.8	0.335394	0.5031	1.044	0.5031	6.0360	0.0000	0.0000
739	0.335513	0.5033	1.044	0.5033	6.0382	0.0000	0.0000
739.2	0.335632	0.5034	1.044	0.5034	6.0403	0.0000	0.0000
739.4	0.335751	0.5036	1.044	0.5036	6.0425	0.0000	0.0000
739.6	0.335871	0.5038	1.044	0.5038	6.0446	0.0000	0.0000
739.8	0.33599	0.5040	1.044	0.5040	6.0467	0.0000	0.0000
740	0.336109	0.5042	1.044	0.5042	6.0489	0.0000	0.0000
740.2	0.336229	0.5043	1.044	0.5043	6.0510	0.0000	0.0000
740.4	0.336348	0.5045	1.044	0.5045	6.0532	0.0000	0.0000
740.6	0.336467	0.5047	1.044	0.5047	6.0553	0.0000	0.0000
740.8	0.336587	0.5049	1.044	0.5049	6.0575	0.0000	0.0000
741	0.336706	0.5051	1.044	0.5051	6.0596	0.0000	0.0000

741.2	0.336826	0.5052	1.044	0.5052	6.0618	0.0000	0.0000
741.4	0.336945	0.5054	1.044	0.5054	6.0639	0.0000	0.0000
741.6	0.337065	0.5056	1.044	0.5056	6.0661	0.0000	0.0000
741.8	0.337185	0.5058	1.044	0.5058	6.0682	0.0000	0.0000
742	0.337304	0.5060	1.044	0.5060	6.0704	0.0000	0.0000
742.2	0.337424	0.5061	1.044	0.5061	6.0726	0.0000	0.0000
742.4	0.337543	0.5063	1.044	0.5063	6.0747	0.0000	0.0000
742.6	0.337663	0.5065	1.044	0.5065	6.0769	0.0000	0.0000
742.8	0.337783	0.5067	1.044	0.5067	6.0790	0.0000	0.0000
743	0.337903	0.5069	1.044	0.5069	6.0812	0.0000	0.0000
743.2	0.338022	0.5070	1.044	0.5070	6.0833	0.0000	0.0000
743.4	0.338142	0.5072	1.044	0.5072	6.0855	0.0000	0.0000
743.6	0.338262	0.5074	1.044	0.5074	6.0876	0.0000	0.0000
743.8	0.338382	0.5076	1.044	0.5076	6.0898	0.0000	0.0000
744	0.338502	0.5078	1.044	0.5078	6.0920	0.0000	0.0000
744.2	0.338622	0.5079	1.044	0.5079	6.0941	0.0000	0.0000
744.4	0.338742	0.5081	1.044	0.5081	6.0963	0.0000	0.0000
744.6	0.338862	0.5083	1.044	0.5083	6.0984	0.0000	0.0000
744.8	0.338982	0.5085	1.044	0.5085	6.1006	0.0000	0.0000
745	0.339102	0.5087	1.044	0.5087	6.1027	0.0000	0.0000
745.2	0.339222	0.5088	1.044	0.5088	6.1049	0.0000	0.0000
745.4	0.339342	0.5090	1.044	0.5090	6.1071	0.0000	0.0000
745.6	0.339462	0.5092	1.044	0.5092	6.1092	0.0000	0.0000
745.8	0.339582	0.5094	1.044	0.5094	6.1114	0.0000	0.0000
746	0.339702	0.5096	1.044	0.5096	6.1136	0.0000	0.0000
746.2	0.339822	0.5097	1.044	0.5097	6.1157	0.0000	0.0000
746.4	0.339943	0.5099	1.044	0.5099	6.1179	0.0000	0.0000
746.6	0.340063	0.5101	1.044	0.5101	6.1200	0.0000	0.0000
746.8	0.340183	0.5103	1.044	0.5103	6.1222	0.0000	0.0000
747	0.340303	0.5105	1.044	0.5105	6.1244	0.0000	0.0000
747.2	0.340424	0.5106	1.044	0.5106	6.1265	0.0000	0.0000
747.4	0.340544	0.5108	1.044	0.5108	6.1287	0.0000	0.0000
747.6	0.340664	0.5110	1.044	0.5110	6.1309	0.0000	0.0000
747.8	0.340785	0.5112	1.044	0.5112	6.1330	0.0000	0.0000
748	0.340905	0.5114	1.044	0.5114	6.1352	0.0000	0.0000
748.2	0.341026	0.5115	1.044	0.5115	6.1374	0.0000	0.0000
748.4	0.341146	0.5117	1.044	0.5117	6.1395	0.0000	0.0000
748.6	0.341267	0.5119	1.044	0.5119	6.1417	0.0000	0.0000
748.8	0.341387	0.5121	1.044	0.5121	6.1439	0.0000	0.0000
749	0.341508	0.5123	1.044	0.5123	6.1461	0.0000	0.0000
749.2	0.341629	0.5124	1.044	0.5124	6.1482	0.0000	0.0000
749.4	0.341749	0.5126	1.044	0.5126	6.1504	0.0000	0.0000
749.6	0.34187	0.5128	1.044	0.5128	6.1526	0.0000	0.0000
749.8	0.341991	0.5130	1.044	0.5130	6.1547	0.0000	0.0000
750	0.342111	0.5132	1.044	0.5132	6.1569	0.0000	0.0000
750.2	0.342232	0.5133	1.044	0.5133	6.1591	0.0000	0.0000
750.4	0.342353	0.5135	1.044	0.5135	6.1613	0.0000	0.0000

750.6	0.342474	0.5137	1.044	0.5137	6.1634	0.0000	0.0000
750.8	0.342594	0.5139	1.044	0.5139	6.1656	0.0000	0.0000
751	0.342715	0.5141	1.044	0.5141	6.1678	0.0000	0.0000
751.2	0.342836	0.5143	1.044	0.5143	6.1700	0.0000	0.0000
751.4	0.342957	0.5144	1.044	0.5144	6.1721	0.0000	0.0000
751.6	0.343078	0.5146	1.044	0.5146	6.1743	0.0000	0.0000
751.8	0.343199	0.5148	1.044	0.5148	6.1765	0.0000	0.0000
752	0.34332	0.5150	1.044	0.5150	6.1787	0.0000	0.0000
752.2	0.343441	0.5152	1.044	0.5152	6.1808	0.0000	0.0000
752.4	0.343562	0.5153	1.044	0.5153	6.1830	0.0000	0.0000
752.6	0.343683	0.5155	1.044	0.5155	6.1852	0.0000	0.0000
752.8	0.343804	0.5157	1.044	0.5157	6.1874	0.0000	0.0000
753	0.343925	0.5159	1.044	0.5159	6.1896	0.0000	0.0000
753.2	0.344047	0.5161	1.044	0.5161	6.1917	0.0000	0.0000
753.4	0.344168	0.5163	1.044	0.5163	6.1939	0.0000	0.0000
753.6	0.344289	0.5164	1.044	0.5164	6.1961	0.0000	0.0000
753.8	0.34441	0.5166	1.044	0.5166	6.1983	0.0000	0.0000
754	0.344532	0.5168	1.044	0.5168	6.2005	0.0000	0.0000
754.2	0.344653	0.5170	1.044	0.5170	6.2027	0.0000	0.0000
754.4	0.344774	0.5172	1.044	0.5172	6.2048	0.0000	0.0000
754.6	0.344896	0.5173	1.044	0.5173	6.2070	0.0000	0.0000
754.8	0.345017	0.5175	1.044	0.5175	6.2092	0.0000	0.0000
755	0.345139	0.5177	1.044	0.5177	6.2114	0.0000	0.0000
755.2	0.34526	0.5179	1.044	0.5179	6.2136	0.0000	0.0000
755.4	0.345381	0.5181	1.044	0.5181	6.2158	0.0000	0.0000
755.6	0.345503	0.5183	1.044	0.5183	6.2180	0.0000	0.0000
755.8	0.345625	0.5184	1.044	0.5184	6.2201	0.0000	0.0000
756	0.345746	0.5186	1.044	0.5186	6.2223	0.0000	0.0000
756.2	0.345868	0.5188	1.044	0.5188	6.2245	0.0000	0.0000
756.4	0.345989	0.5190	1.044	0.5190	6.2267	0.0000	0.0000
756.6	0.346111	0.5192	1.044	0.5192	6.2289	0.0000	0.0000
756.8	0.346233	0.5193	1.044	0.5193	6.2311	0.0000	0.0000
757	0.346354	0.5195	1.044	0.5195	6.2333	0.0000	0.0000
757.2	0.346476	0.5197	1.044	0.5197	6.2355	0.0000	0.0000
757.4	0.346598	0.5199	1.044	0.5199	6.2377	0.0000	0.0000
757.6	0.34672	0.5201	1.044	0.5201	6.2399	0.0000	0.0000
757.8	0.346842	0.5203	1.044	0.5203	6.2421	0.0000	0.0000
758	0.346964	0.5204	1.044	0.5204	6.2442	0.0000	0.0000
758.2	0.347085	0.5206	1.044	0.5206	6.2464	0.0000	0.0000
758.4	0.347207	0.5208	1.044	0.5208	6.2486	0.0000	0.0000
758.6	0.347329	0.5210	1.044	0.5210	6.2508	0.0000	0.0000
758.8	0.347451	0.5212	1.044	0.5212	6.2530	0.0000	0.0000
759	0.347573	0.5214	1.044	0.5214	6.2552	0.0000	0.0000
759.2	0.347695	0.5215	1.044	0.5215	6.2574	0.0000	0.0000
759.4	0.347817	0.5217	1.044	0.5217	6.2596	0.0000	0.0000
759.6	0.34794	0.5219	1.044	0.5219	6.2618	0.0000	0.0000
759.8	0.348062	0.5221	1.044	0.5221	6.2640	0.0000	0.0000

760	0.348184	0.5223	1.044	0.5223	6.2662	0.0000	0.0000
760.2	0.348306	0.5225	1.044	0.5225	6.2684	0.0000	0.0000
760.4	0.348428	0.5226	1.044	0.5226	6.2706	0.0000	0.0000
760.6	0.34855	0.5228	1.044	0.5228	6.2728	0.0000	0.0000
760.8	0.348673	0.5230	1.044	0.5230	6.2750	0.0000	0.0000
761	0.348795	0.5232	1.044	0.5232	6.2772	0.0000	0.0000
761.2	0.348917	0.5234	1.044	0.5234	6.2794	0.0000	0.0000
761.4	0.34904	0.5236	1.044	0.5236	6.2816	0.0000	0.0000
761.6	0.349162	0.5237	1.044	0.5237	6.2838	0.0000	0.0000
761.8	0.349285	0.5239	1.044	0.5239	6.2860	0.0000	0.0000
762	0.349407	0.5241	1.044	0.5241	6.2882	0.0000	0.0000
762.2	0.34953	0.5243	1.044	0.5243	6.2904	0.0000	0.0000
762.4	0.349652	0.5245	1.044	0.5245	6.2926	0.0000	0.0000
762.6	0.349775	0.5247	1.044	0.5247	6.2948	0.0000	0.0000
762.8	0.349897	0.5248	1.044	0.5248	6.2970	0.0000	0.0000
763	0.35002	0.5250	1.044	0.5250	6.2993	0.0000	0.0000
763.2	0.350142	0.5252	1.044	0.5252	6.3015	0.0000	0.0000
763.4	0.350265	0.5254	1.044	0.5254	6.3037	0.0000	0.0000
763.6	0.350388	0.5256	1.044	0.5256	6.3059	0.0000	0.0000
763.8	0.35051	0.5258	1.044	0.5258	6.3081	0.0000	0.0000
764	0.350633	0.5259	1.044	0.5259	6.3103	0.0000	0.0000
764.2	0.350756	0.5261	1.044	0.5261	6.3125	0.0000	0.0000
764.4	0.350879	0.5263	1.044	0.5263	6.3147	0.0000	0.0000
764.6	0.351002	0.5265	1.044	0.5265	6.3169	0.0000	0.0000
764.8	0.351124	0.5267	1.044	0.5267	6.3191	0.0000	0.0000
765	0.351247	0.5269	1.044	0.5269	6.3213	0.0000	0.0000
765.2	0.35137	0.5271	1.044	0.5271	6.3236	0.0000	0.0000
765.4	0.351493	0.5272	1.044	0.5272	6.3258	0.0000	0.0000
765.6	0.351616	0.5274	1.044	0.5274	6.3280	0.0000	0.0000
765.8	0.351739	0.5276	1.044	0.5276	6.3302	0.0000	0.0000
766	0.351862	0.5278	1.044	0.5278	6.3324	0.0000	0.0000
766.2	0.351985	0.5280	1.044	0.5280	6.3346	0.0000	0.0000
766.4	0.352109	0.5282	1.044	0.5282	6.3368	0.0000	0.0000
766.6	0.352232	0.5283	1.044	0.5283	6.3391	0.0000	0.0000
766.8	0.352355	0.5285	1.044	0.5285	6.3413	0.0000	0.0000
767	0.352478	0.5287	1.044	0.5287	6.3435	0.0000	0.0000
767.2	0.352601	0.5289	1.044	0.5289	6.3457	0.0000	0.0000
767.4	0.352725	0.5291	1.044	0.5291	6.3479	0.0000	0.0000
767.6	0.352848	0.5293	1.044	0.5293	6.3502	0.0000	0.0000
767.8	0.352971	0.5295	1.044	0.5295	6.3524	0.0000	0.0000
768	0.353094	0.5296	1.044	0.5296	6.3546	0.0000	0.0000
768.2	0.353218	0.5298	1.044	0.5298	6.3568	0.0000	0.0000
768.4	0.353341	0.5300	1.044	0.5300	6.3590	0.0000	0.0000
768.6	0.353465	0.5302	1.044	0.5302	6.3613	0.0000	0.0000
768.8	0.353588	0.5304	1.044	0.5304	6.3635	0.0000	0.0000
769	0.353712	0.5306	1.044	0.5306	6.3657	0.0000	0.0000
769.2	0.353835	0.5308	1.044	0.5308	6.3679	0.0000	0.0000

769.4	0.353959	0.5309	1.044	0.5309	6.3701	0.0000	0.0000
769.6	0.354082	0.5311	1.044	0.5311	6.3724	0.0000	0.0000
769.8	0.354206	0.5313	1.044	0.5313	6.3746	0.0000	0.0000
770	0.35433	0.5315	1.044	0.5315	6.3768	0.0000	0.0000
770.2	0.354453	0.5317	1.044	0.5317	6.3790	0.0000	0.0000
770.4	0.354577	0.5319	1.044	0.5319	6.3813	0.0000	0.0000
770.6	0.354701	0.5321	1.044	0.5321	6.3835	0.0000	0.0000
770.8	0.354825	0.5322	1.044	0.5322	6.3857	0.0000	0.0000
771	0.354948	0.5324	1.044	0.5324	6.3880	0.0000	0.0000
771.2	0.355072	0.5326	1.044	0.5326	6.3902	0.0000	0.0000
771.4	0.355196	0.5328	1.044	0.5328	6.3924	0.0000	0.0000
771.6	0.35532	0.5330	1.044	0.5330	6.3946	0.0000	0.0000
771.8	0.355444	0.5332	1.044	0.5332	6.3969	0.0000	0.0000
772	0.355568	0.5334	1.044	0.5334	6.3991	0.0000	0.0000
772.2	0.355692	0.5335	1.044	0.5335	6.4013	0.0000	0.0000
772.4	0.355816	0.5337	1.044	0.5337	6.4036	0.0000	0.0000
772.6	0.35594	0.5339	1.044	0.5339	6.4058	0.0000	0.0000
772.8	0.356064	0.5341	1.044	0.5341	6.4080	0.0000	0.0000
773	0.356188	0.5343	1.044	0.5343	6.4103	0.0000	0.0000
773.2	0.356312	0.5345	1.044	0.5345	6.4125	0.0000	0.0000
773.4	0.356436	0.5347	1.044	0.5347	6.4147	0.0000	0.0000
773.6	0.356561	0.5348	1.044	0.5348	6.4170	0.0000	0.0000
773.8	0.356685	0.5350	1.044	0.5350	6.4192	0.0000	0.0000
774	0.356809	0.5352	1.044	0.5352	6.4214	0.0000	0.0000
774.2	0.356933	0.5354	1.044	0.5354	6.4237	0.0000	0.0000
774.4	0.357058	0.5356	1.044	0.5356	6.4259	0.0000	0.0000
774.6	0.357182	0.5358	1.044	0.5358	6.4282	0.0000	0.0000
774.8	0.357306	0.5360	1.044	0.5360	6.4304	0.0000	0.0000
775	0.357431	0.5361	1.044	0.5361	6.4326	0.0000	0.0000
775.2	0.357555	0.5363	1.044	0.5363	6.4349	0.0000	0.0000
775.4	0.35768	0.5365	1.044	0.5365	6.4371	0.0000	0.0000
775.6	0.357804	0.5367	1.044	0.5367	6.4394	0.0000	0.0000
775.8	0.357929	0.5369	1.044	0.5369	6.4416	0.0000	0.0000
776	0.358053	0.5371	1.044	0.5371	6.4438	0.0000	0.0000
776.2	0.358178	0.5373	1.044	0.5373	6.4461	0.0000	0.0000
776.4	0.358303	0.5375	1.044	0.5375	6.4483	0.0000	0.0000
776.6	0.358427	0.5376	1.044	0.5376	6.4506	0.0000	0.0000
776.8	0.358552	0.5378	1.044	0.5378	6.4528	0.0000	0.0000
777	0.358677	0.5380	1.044	0.5380	6.4551	0.0000	0.0000
777.2	0.358802	0.5382	1.044	0.5382	6.4573	0.0000	0.0000
777.4	0.358926	0.5384	1.044	0.5384	6.4596	0.0000	0.0000
777.6	0.359051	0.5386	1.044	0.5386	6.4618	0.0000	0.0000
777.8	0.359176	0.5388	1.044	0.5388	6.4640	0.0000	0.0000
778	0.359301	0.5390	1.044	0.5390	6.4663	0.0000	0.0000
778.2	0.359426	0.5391	1.044	0.5391	6.4685	0.0000	0.0000
778.4	0.359551	0.5393	1.044	0.5393	6.4708	0.0000	0.0000
778.6	0.359676	0.5395	1.044	0.5395	6.4730	0.0000	0.0000

778.8	0.359801	0.5397	1.044	0.5397	6.4753	0.0000	0.0000
779	0.359926	0.5399	1.044	0.5399	6.4775	0.0000	0.0000
779.2	0.360051	0.5401	1.044	0.5401	6.4798	0.0000	0.0000
779.4	0.360176	0.5403	1.044	0.5403	6.4820	0.0000	0.0000
779.6	0.360301	0.5405	1.044	0.5405	6.4843	0.0000	0.0000
779.8	0.360426	0.5406	1.044	0.5406	6.4865	0.0000	0.0000
780	0.360552	0.5408	1.044	0.5408	6.4888	0.0000	0.0000
780.2	0.360677	0.5410	1.044	0.5410	6.4911	0.0000	0.0000
780.4	0.360802	0.5412	1.044	0.5412	6.4933	0.0000	0.0000
780.6	0.360927	0.5414	1.044	0.5414	6.4956	0.0000	0.0000
780.8	0.361053	0.5416	1.044	0.5416	6.4978	0.0000	0.0000
781	0.361178	0.5418	1.044	0.5418	6.5001	0.0000	0.0000
781.2	0.361303	0.5420	1.044	0.5420	6.5023	0.0000	0.0000
781.4	0.361429	0.5421	1.044	0.5421	6.5046	0.0000	0.0000
781.6	0.361554	0.5423	1.044	0.5423	6.5068	0.0000	0.0000
781.8	0.36168	0.5425	1.044	0.5425	6.5091	0.0000	0.0000
782	0.361805	0.5427	1.044	0.5427	6.5114	0.0000	0.0000
782.2	0.361931	0.5429	1.044	0.5429	6.5136	0.0000	0.0000
782.4	0.362056	0.5431	1.044	0.5431	6.5159	0.0000	0.0000
782.6	0.362182	0.5433	1.044	0.5433	6.5181	0.0000	0.0000
782.8	0.362308	0.5435	1.044	0.5435	6.5204	0.0000	0.0000
783	0.362433	0.5437	1.044	0.5437	6.5227	0.0000	0.0000
783.2	0.362559	0.5438	1.044	0.5438	6.5249	0.0000	0.0000
783.4	0.362685	0.5440	1.044	0.5440	6.5272	0.0000	0.0000
783.6	0.362811	0.5442	1.044	0.5442	6.5295	0.0000	0.0000
783.8	0.362936	0.5444	1.044	0.5444	6.5317	0.0000	0.0000
784	0.363062	0.5446	1.044	0.5446	6.5340	0.0000	0.0000
784.2	0.363188	0.5448	1.044	0.5448	6.5363	0.0000	0.0000
784.4	0.363314	0.5450	1.044	0.5450	6.5385	0.0000	0.0000
784.6	0.36344	0.5452	1.044	0.5452	6.5408	0.0000	0.0000
784.8	0.363566	0.5453	1.044	0.5453	6.5431	0.0000	0.0000
785	0.363692	0.5455	1.044	0.5455	6.5453	0.0000	0.0000
785.2	0.363818	0.5457	1.044	0.5457	6.5476	0.0000	0.0000
785.4	0.363944	0.5459	1.044	0.5459	6.5499	0.0000	0.0000
785.6	0.36407	0.5461	1.044	0.5461	6.5521	0.0000	0.0000
785.8	0.364196	0.5463	1.044	0.5463	6.5544	0.0000	0.0000
786	0.364322	0.5465	1.044	0.5465	6.5567	0.0000	0.0000
786.2	0.364449	0.5467	1.044	0.5467	6.5589	0.0000	0.0000
786.4	0.364575	0.5469	1.044	0.5469	6.5612	0.0000	0.0000
786.6	0.364701	0.5471	1.044	0.5471	6.5635	0.0000	0.0000
786.8	0.364827	0.5472	1.044	0.5472	6.5658	0.0000	0.0000
787	0.364954	0.5474	1.044	0.5474	6.5680	0.0000	0.0000
787.2	0.36508	0.5476	1.044	0.5476	6.5703	0.0000	0.0000
787.4	0.365207	0.5478	1.044	0.5478	6.5726	0.0000	0.0000
787.6	0.365333	0.5480	1.044	0.5480	6.5749	0.0000	0.0000
787.8	0.365459	0.5482	1.044	0.5482	6.5771	0.0000	0.0000
788	0.365586	0.5484	1.044	0.5484	6.5794	0.0000	0.0000

788.2	0.365712	0.5486	1.044	0.5486	6.5817	0.0000	0.0000
788.4	0.365839	0.5488	1.044	0.5488	6.5840	0.0000	0.0000
788.6	0.365966	0.5489	1.044	0.5489	6.5862	0.0000	0.0000
788.8	0.366092	0.5491	1.044	0.5491	6.5885	0.0000	0.0000
789	0.366219	0.5493	1.044	0.5493	6.5908	0.0000	0.0000
789.2	0.366346	0.5495	1.044	0.5495	6.5931	0.0000	0.0000
789.4	0.366472	0.5497	1.044	0.5497	6.5954	0.0000	0.0000
789.6	0.366599	0.5499	1.044	0.5499	6.5976	0.0000	0.0000
789.8	0.366726	0.5501	1.044	0.5501	6.5999	0.0000	0.0000
790	0.366853	0.5503	1.044	0.5503	6.6022	0.0000	0.0000
790.2	0.366979	0.5505	1.044	0.5505	6.6045	0.0000	0.0000
790.4	0.367106	0.5507	1.044	0.5507	6.6068	0.0000	0.0000
790.6	0.367233	0.5508	1.044	0.5508	6.6091	0.0000	0.0000
790.8	0.36736	0.5510	1.044	0.5510	6.6113	0.0000	0.0000
791	0.367487	0.5512	1.044	0.5512	6.6136	0.0000	0.0000
791.2	0.367614	0.5514	1.044	0.5514	6.6159	0.0000	0.0000
791.4	0.367741	0.5516	1.044	0.5516	6.6182	0.0000	0.0000
791.6	0.367868	0.5518	1.044	0.5518	6.6205	0.0000	0.0000
791.8	0.367995	0.5520	1.044	0.5520	6.6228	0.0000	0.0000
792	0.368123	0.5522	1.044	0.5522	6.6251	0.0000	0.0000
792.2	0.36825	0.5524	1.044	0.5524	6.6274	0.0000	0.0000
792.4	0.368377	0.5526	1.044	0.5526	6.6296	0.0000	0.0000
792.6	0.368504	0.5528	1.044	0.5528	6.6319	0.0000	0.0000
792.8	0.368632	0.5529	1.044	0.5529	6.6342	0.0000	0.0000
793	0.368759	0.5531	1.044	0.5531	6.6365	0.0000	0.0000
793.2	0.368886	0.5533	1.044	0.5533	6.6388	0.0000	0.0000
793.4	0.369014	0.5535	1.044	0.5535	6.6411	0.0000	0.0000
793.6	0.369141	0.5537	1.044	0.5537	6.6434	0.0000	0.0000
793.8	0.369268	0.5539	1.044	0.5539	6.6457	0.0000	0.0000
794	0.369396	0.5541	1.044	0.5541	6.6480	0.0000	0.0000
794.2	0.369523	0.5543	1.044	0.5543	6.6503	0.0000	0.0000
794.4	0.369651	0.5545	1.044	0.5545	6.6526	0.0000	0.0000
794.6	0.369779	0.5547	1.044	0.5547	6.6549	0.0000	0.0000
794.8	0.369906	0.5549	1.044	0.5549	6.6572	0.0000	0.0000
795	0.370034	0.5551	1.044	0.5551	6.6595	0.0000	0.0000
795.2	0.370161	0.5552	1.044	0.5552	6.6618	0.0000	0.0000
795.4	0.370289	0.5554	1.044	0.5554	6.6641	0.0000	0.0000
795.6	0.370417	0.5556	1.044	0.5556	6.6664	0.0000	0.0000
795.8	0.370545	0.5558	1.044	0.5558	6.6687	0.0000	0.0000
796	0.370673	0.5560	1.044	0.5560	6.6710	0.0000	0.0000
796.2	0.3708	0.5562	1.044	0.5562	6.6733	0.0000	0.0000
796.4	0.370928	0.5564	1.044	0.5564	6.6756	0.0000	0.0000
796.6	0.371056	0.5566	1.044	0.5566	6.6779	0.0000	0.0000
796.8	0.371184	0.5568	1.044	0.5568	6.6802	0.0000	0.0000
797	0.371312	0.5570	1.044	0.5570	6.6825	0.0000	0.0000
797.2	0.37144	0.5572	1.044	0.5572	6.6848	0.0000	0.0000
797.4	0.371568	0.5574	1.044	0.5574	6.6871	0.0000	0.0000

797.6	0.371696	0.5575	1.044	0.5575	6.6894	0.0000	0.0000
797.8	0.371824	0.5577	1.044	0.5577	6.6917	0.0000	0.0000
798	0.371953	0.5579	1.044	0.5579	6.6940	0.0000	0.0000
798.2	0.372081	0.5581	1.044	0.5581	6.6963	0.0000	0.0000
798.4	0.372209	0.5583	1.044	0.5583	6.6986	0.0000	0.0000
798.6	0.372337	0.5585	1.044	0.5585	6.7009	0.0000	0.0000
798.8	0.372466	0.5587	1.044	0.5587	6.7032	0.0000	0.0000
799	0.372594	0.5589	1.044	0.5589	6.7055	0.0000	0.0000
799.2	0.372722	0.5591	1.044	0.5591	6.7078	0.0000	0.0000
799.4	0.372851	0.5593	1.044	0.5593	6.7102	0.0000	0.0000
799.6	0.372979	0.5595	1.044	0.5595	6.7125	0.0000	0.0000
799.8	0.373107	0.5597	1.044	0.5597	6.7148	0.0000	0.0000
800	0.373236	0.5599	1.044	0.5599	6.7171	0.0000	0.0000
800.2	0.373365	0.5600	1.044	0.5600	6.7194	0.0000	0.0000
800.4	0.373493	0.5602	1.044	0.5602	6.7217	0.0000	0.0000
800.6	0.373622	0.5604	1.044	0.5604	6.7240	0.0000	0.0000
800.8	0.37375	0.5606	1.044	0.5606	6.7263	0.0000	0.0000
801	0.373879	0.5608	1.044	0.5608	6.7287	0.0000	0.0000
801.2	0.374008	0.5610	1.044	0.5610	6.7310	0.0000	0.0000
801.4	0.374136	0.5612	1.044	0.5612	6.7333	0.0000	0.0000
801.6	0.374265	0.5614	1.044	0.5614	6.7356	0.0000	0.0000
801.8	0.374394	0.5616	1.044	0.5616	6.7379	0.0000	0.0000
802	0.374523	0.5618	1.044	0.5618	6.7403	0.0000	0.0000
802.2	0.374652	0.5620	1.044	0.5620	6.7426	0.0000	0.0000
802.4	0.374781	0.5622	1.044	0.5622	6.7449	0.0000	0.0000
802.6	0.37491	0.5624	1.044	0.5624	6.7472	0.0000	0.0000
802.8	0.375039	0.5626	1.044	0.5626	6.7495	0.0000	0.0000
803	0.375168	0.5628	1.044	0.5628	6.7519	0.0000	0.0000
803.2	0.375297	0.5629	1.044	0.5629	6.7542	0.0000	0.0000
803.4	0.375426	0.5631	1.044	0.5631	6.7565	0.0000	0.0000
803.6	0.375555	0.5633	1.044	0.5633	6.7588	0.0000	0.0000
803.8	0.375684	0.5635	1.044	0.5635	6.7611	0.0000	0.0000
804	0.375813	0.5637	1.044	0.5637	6.7635	0.0000	0.0000
804.2	0.375942	0.5639	1.044	0.5639	6.7658	0.0000	0.0000
804.4	0.376072	0.5641	1.044	0.5641	6.7681	0.0000	0.0000
804.6	0.376201	0.5643	1.044	0.5643	6.7705	0.0000	0.0000
804.8	0.37633	0.5645	1.044	0.5645	6.7728	0.0000	0.0000
805	0.37646	0.5647	1.044	0.5647	6.7751	0.0000	0.0000
805.2	0.376589	0.5649	1.044	0.5649	6.7774	0.0000	0.0000
805.4	0.376718	0.5651	1.044	0.5651	6.7798	0.0000	0.0000
805.6	0.376848	0.5653	1.044	0.5653	6.7821	0.0000	0.0000
805.8	0.376977	0.5655	1.044	0.5655	6.7844	0.0000	0.0000
806	0.377107	0.5657	1.044	0.5657	6.7868	0.0000	0.0000
806.2	0.377237	0.5659	1.044	0.5659	6.7891	0.0000	0.0000
806.4	0.377366	0.5660	1.044	0.5660	6.7914	0.0000	0.0000
806.6	0.377496	0.5662	1.044	0.5662	6.7938	0.0000	0.0000
806.8	0.377626	0.5664	1.044	0.5664	6.7961	0.0000	0.0000

807	0.377755	0.5666	1.044	0.5666	6.7984	0.0000	0.0000
807.2	0.377885	0.5668	1.044	0.5668	6.8008	0.0000	0.0000
807.4	0.378015	0.5670	1.044	0.5670	6.8031	0.0000	0.0000
807.6	0.378145	0.5672	1.044	0.5672	6.8054	0.0000	0.0000
807.8	0.378274	0.5674	1.044	0.5674	6.8078	0.0000	0.0000
808	0.378404	0.5676	1.044	0.5676	6.8101	0.0000	0.0000
808.2	0.378534	0.5678	1.044	0.5678	6.8124	0.0000	0.0000
808.4	0.378664	0.5680	1.044	0.5680	6.8148	0.0000	0.0000
808.6	0.378794	0.5682	1.044	0.5682	6.8171	0.0000	0.0000
808.8	0.378924	0.5684	1.044	0.5684	6.8195	0.0000	0.0000
809	0.379054	0.5686	1.044	0.5686	6.8218	0.0000	0.0000
809.2	0.379184	0.5688	1.044	0.5688	6.8241	0.0000	0.0000
809.4	0.379315	0.5690	1.044	0.5690	6.8265	0.0000	0.0000
809.6	0.379445	0.5692	1.044	0.5692	6.8288	0.0000	0.0000
809.8	0.379575	0.5694	1.044	0.5694	6.8312	0.0000	0.0000
810	0.379705	0.5696	1.044	0.5696	6.8335	0.0000	0.0000
810.2	0.379835	0.5698	1.044	0.5698	6.8359	0.0000	0.0000
810.4	0.379966	0.5699	1.044	0.5699	6.8382	0.0000	0.0000
810.6	0.380096	0.5701	1.044	0.5701	6.8406	0.0000	0.0000
810.8	0.380227	0.5703	1.044	0.5703	6.8429	0.0000	0.0000
811	0.380357	0.5705	1.044	0.5705	6.8453	0.0000	0.0000
811.2	0.380487	0.5707	1.044	0.5707	6.8476	0.0000	0.0000
811.4	0.380618	0.5709	1.044	0.5709	6.8499	0.0000	0.0000
811.6	0.380748	0.5711	1.044	0.5711	6.8523	0.0000	0.0000
811.8	0.380879	0.5713	1.044	0.5713	6.8546	0.0000	0.0000
812	0.38101	0.5715	1.044	0.5715	6.8570	0.0000	0.0000
812.2	0.38114	0.5717	1.044	0.5717	6.8593	0.0000	0.0000
812.4	0.381271	0.5719	1.044	0.5719	6.8617	0.0000	0.0000
812.6	0.381402	0.5721	1.044	0.5721	6.8641	0.0000	0.0000
812.8	0.381532	0.5723	1.044	0.5723	6.8664	0.0000	0.0000
813	0.381663	0.5725	1.044	0.5725	6.8688	0.0000	0.0000
813.2	0.381794	0.5727	1.044	0.5727	6.8711	0.0000	0.0000
813.4	0.381925	0.5729	1.044	0.5729	6.8735	0.0000	0.0000
813.6	0.382056	0.5731	1.044	0.5731	6.8758	0.0000	0.0000
813.8	0.382187	0.5733	1.044	0.5733	6.8782	0.0000	0.0000
814	0.382318	0.5735	1.044	0.5735	6.8805	0.0000	0.0000
814.2	0.382449	0.5737	1.044	0.5737	6.8829	0.0000	0.0000
814.4	0.38258	0.5739	1.044	0.5739	6.8853	0.0000	0.0000
814.6	0.382711	0.5741	1.044	0.5741	6.8876	0.0000	0.0000
814.8	0.382842	0.5743	1.044	0.5743	6.8900	0.0000	0.0000
815	0.382973	0.5745	1.044	0.5745	6.8923	0.0000	0.0000
815.2	0.383104	0.5747	1.044	0.5747	6.8947	0.0000	0.0000
815.4	0.383236	0.5749	1.044	0.5749	6.8971	0.0000	0.0000
815.6	0.383367	0.5751	1.044	0.5751	6.8994	0.0000	0.0000
815.8	0.383498	0.5752	1.044	0.5752	6.9018	0.0000	0.0000
816	0.383629	0.5754	1.044	0.5754	6.9041	0.0000	0.0000
816.2	0.383761	0.5756	1.044	0.5756	6.9065	0.0000	0.0000

816.4	0.383892	0.5758	1.044	0.5758	6.9089	0.0000	0.0000
816.6	0.384024	0.5760	1.044	0.5760	6.9112	0.0000	0.0000
816.8	0.384155	0.5762	1.044	0.5762	6.9136	0.0000	0.0000
817	0.384287	0.5764	1.044	0.5764	6.9160	0.0000	0.0000
817.2	0.384418	0.5766	1.044	0.5766	6.9183	0.0000	0.0000
817.4	0.38455	0.5768	1.044	0.5768	6.9207	0.0000	0.0000
817.6	0.384681	0.5770	1.044	0.5770	6.9231	0.0000	0.0000
817.8	0.384813	0.5772	1.044	0.5772	6.9255	0.0000	0.0000
818	0.384945	0.5774	1.044	0.5774	6.9278	0.0000	0.0000
818.2	0.385077	0.5776	1.044	0.5776	6.9302	0.0000	0.0000
818.4	0.385208	0.5778	1.044	0.5778	6.9326	0.0000	0.0000
818.6	0.38534	0.5780	1.044	0.5780	6.9349	0.0000	0.0000
818.8	0.385472	0.5782	1.044	0.5782	6.9373	0.0000	0.0000
819	0.385604	0.5784	1.044	0.5784	6.9397	0.0000	0.0000
819.2	0.385736	0.5786	1.044	0.5786	6.9421	0.0000	0.0000
819.4	0.385868	0.5788	1.044	0.5788	6.9444	0.0000	0.0000
819.6	0.386	0.5790	1.044	0.5790	6.9468	0.0000	0.0000
819.8	0.386132	0.5792	1.044	0.5792	6.9492	0.0000	0.0000
820	0.386264	0.5794	1.044	0.5794	6.9516	0.0000	0.0000
820.2	0.386396	0.5796	1.044	0.5796	6.9539	0.0000	0.0000
820.4	0.386528	0.5798	1.044	0.5798	6.9563	0.0000	0.0000
820.6	0.38666	0.5800	1.044	0.5800	6.9587	0.0000	0.0000
820.8	0.386793	0.5802	1.044	0.5802	6.9611	0.0000	0.0000
821	0.386925	0.5804	1.044	0.5804	6.9635	0.0000	0.0000
821.2	0.387057	0.5806	1.044	0.5806	6.9658	0.0000	0.0000
821.4	0.38719	0.5808	1.044	0.5808	6.9682	0.0000	0.0000
821.6	0.387322	0.5810	1.044	0.5810	6.9706	0.0000	0.0000
821.8	0.387454	0.5812	1.044	0.5812	6.9730	0.0000	0.0000
822	0.387587	0.5814	1.044	0.5814	6.9754	0.0000	0.0000
822.2	0.387719	0.5816	1.044	0.5816	6.9778	0.0000	0.0000
822.4	0.387852	0.5818	1.044	0.5818	6.9801	0.0000	0.0000
822.6	0.387984	0.5820	1.044	0.5820	6.9825	0.0000	0.0000
822.8	0.388117	0.5822	1.044	0.5822	6.9849	0.0000	0.0000
823	0.38825	0.5824	1.044	0.5824	6.9873	0.0000	0.0000
823.2	0.388382	0.5826	1.044	0.5826	6.9897	0.0000	0.0000
823.4	0.388515	0.5828	1.044	0.5828	6.9921	0.0000	0.0000
823.6	0.388648	0.5830	1.044	0.5830	6.9945	0.0000	0.0000
823.8	0.388781	0.5832	1.044	0.5832	6.9969	0.0000	0.0000
824	0.388913	0.5834	1.044	0.5834	6.9992	0.0000	0.0000
824.2	0.389046	0.5836	1.044	0.5836	7.0016	0.0000	0.0000
824.4	0.389179	0.5838	1.044	0.5838	7.0040	0.0000	0.0000
824.6	0.389312	0.5840	1.044	0.5840	7.0064	0.0000	0.0000
824.8	0.389445	0.5842	1.044	0.5842	7.0088	0.0000	0.0000
825	0.389578	0.5844	1.044	0.5844	7.0112	0.0000	0.0000
825.2	0.389711	0.5846	1.044	0.5846	7.0136	0.0000	0.0000
825.4	0.389844	0.5848	1.044	0.5848	7.0160	0.0000	0.0000
825.6	0.389977	0.5850	1.044	0.5850	7.0184	0.0000	0.0000

825.8	0.390111	0.5852	1.044	0.5852	7.0208	0.0000	0.0000
826	0.390244	0.5854	1.044	0.5854	7.0232	0.0000	0.0000
826.2	0.390377	0.5856	1.044	0.5856	7.0256	0.0000	0.0000
826.4	0.39051	0.5858	1.044	0.5858	7.0280	0.0000	0.0000
826.6	0.390644	0.5860	1.044	0.5860	7.0304	0.0000	0.0000
826.8	0.390777	0.5862	1.044	0.5862	7.0328	0.0000	0.0000
827	0.39091	0.5864	1.044	0.5864	7.0352	0.0000	0.0000
827.2	0.391044	0.5866	1.044	0.5866	7.0376	0.0000	0.0000
827.4	0.391177	0.5868	1.044	0.5868	7.0400	0.0000	0.0000
827.6	0.391311	0.5870	1.044	0.5870	7.0424	0.0000	0.0000
827.8	0.391444	0.5872	1.044	0.5872	7.0448	0.0000	0.0000
828	0.391578	0.5874	1.044	0.5874	7.0472	0.0000	0.0000
828.2	0.391712	0.5876	1.044	0.5876	7.0496	0.0000	0.0000
828.4	0.391845	0.5878	1.044	0.5878	7.0520	0.0000	0.0000
828.6	0.391979	0.5880	1.044	0.5880	7.0544	0.0000	0.0000
828.8	0.392113	0.5882	1.044	0.5882	7.0568	0.0000	0.0000
829	0.392247	0.5884	1.044	0.5884	7.0592	0.0000	0.0000
829.2	0.392381	0.5886	1.044	0.5886	7.0616	0.0000	0.0000
829.4	0.392514	0.5888	1.044	0.5888	7.0641	0.0000	0.0000
829.6	0.392648	0.5890	1.044	0.5890	7.0665	0.0000	0.0000
829.8	0.392782	0.5892	1.044	0.5892	7.0689	0.0000	0.0000
830	0.392916	0.5894	1.044	0.5894	7.0713	0.0000	0.0000
830.2	0.39305	0.5896	1.044	0.5896	7.0737	0.0000	0.0000
830.4	0.393184	0.5898	1.044	0.5898	7.0761	0.0000	0.0000
830.6	0.393318	0.5900	1.044	0.5900	7.0785	0.0000	0.0000
830.8	0.393453	0.5902	1.044	0.5902	7.0809	0.0000	0.0000
831	0.393587	0.5904	1.044	0.5904	7.0834	0.0000	0.0000
831.2	0.393721	0.5906	1.044	0.5906	7.0858	0.0000	0.0000
831.4	0.393855	0.5908	1.044	0.5908	7.0882	0.0000	0.0000
831.6	0.39399	0.5910	1.044	0.5910	7.0906	0.0000	0.0000
831.8	0.394124	0.5912	1.044	0.5912	7.0930	0.0000	0.0000
832	0.394258	0.5914	1.044	0.5914	7.0954	0.0000	0.0000
832.2	0.394393	0.5916	1.044	0.5916	7.0979	0.0000	0.0000
832.4	0.394527	0.5918	1.044	0.5918	7.1003	0.0000	0.0000
832.6	0.394662	0.5920	1.044	0.5920	7.1027	0.0000	0.0000
832.8	0.394796	0.5922	1.044	0.5922	7.1051	0.0000	0.0000
833	0.394931	0.5924	1.044	0.5924	7.1075	0.0000	0.0000
833.2	0.395065	0.5926	1.044	0.5926	7.1100	0.0000	0.0000
833.4	0.3952	0.5928	1.044	0.5928	7.1124	0.0000	0.0000
833.6	0.395335	0.5930	1.044	0.5930	7.1148	0.0000	0.0000
833.8	0.39547	0.5932	1.044	0.5932	7.1172	0.0000	0.0000
834	0.395604	0.5934	1.044	0.5934	7.1197	0.0000	0.0000
834.2	0.395739	0.5936	1.044	0.5936	7.1221	0.0000	0.0000
834.4	0.395874	0.5938	1.044	0.5938	7.1245	0.0000	0.0000
834.6	0.396009	0.5940	1.044	0.5940	7.1269	0.0000	0.0000
834.8	0.396144	0.5942	1.044	0.5942	7.1294	0.0000	0.0000
835	0.396279	0.5944	1.044	0.5944	7.1318	0.0000	0.0000

835.2	0.396414	0.5946	1.044	0.5946	7.1342	0.0000	0.0000
835.4	0.396549	0.5948	1.044	0.5948	7.1367	0.0000	0.0000
835.6	0.396684	0.5950	1.044	0.5950	7.1391	0.0000	0.0000
835.8	0.396819	0.5952	1.044	0.5952	7.1415	0.0000	0.0000
836	0.396954	0.5954	1.044	0.5954	7.1440	0.0000	0.0000
836.2	0.397089	0.5956	1.044	0.5956	7.1464	0.0000	0.0000
836.4	0.397225	0.5958	1.044	0.5958	7.1488	0.0000	0.0000
836.6	0.39736	0.5960	1.044	0.5960	7.1513	0.0000	0.0000
836.8	0.397495	0.5962	1.044	0.5962	7.1537	0.0000	0.0000
837	0.397631	0.5964	1.044	0.5964	7.1561	0.0000	0.0000
837.2	0.397766	0.5966	1.044	0.5966	7.1586	0.0000	0.0000
837.4	0.397902	0.5969	1.044	0.5969	7.1610	0.0000	0.0000
837.6	0.398037	0.5971	1.044	0.5971	7.1634	0.0000	0.0000
837.8	0.398173	0.5973	1.044	0.5973	7.1659	0.0000	0.0000
838	0.398308	0.5975	1.044	0.5975	7.1683	0.0000	0.0000
838.2	0.398444	0.5977	1.044	0.5977	7.1708	0.0000	0.0000
838.4	0.39858	0.5979	1.044	0.5979	7.1732	0.0000	0.0000
838.6	0.398715	0.5981	1.044	0.5981	7.1757	0.0000	0.0000
838.8	0.398851	0.5983	1.044	0.5983	7.1781	0.0000	0.0000
839	0.398987	0.5985	1.044	0.5985	7.1805	0.0000	0.0000
839.2	0.399123	0.5987	1.044	0.5987	7.1830	0.0000	0.0000
839.4	0.399258	0.5989	1.044	0.5989	7.1854	0.0000	0.0000
839.6	0.399394	0.5991	1.044	0.5991	7.1879	0.0000	0.0000
839.8	0.39953	0.5993	1.044	0.5993	7.1903	0.0000	0.0000
840	0.399666	0.5995	1.044	0.5995	7.1928	0.0000	0.0000
840.2	0.399802	0.5997	1.044	0.5997	7.1952	0.0000	0.0000
840.4	0.399938	0.5999	1.044	0.5999	7.1977	0.0000	0.0000
840.6	0.400075	0.6001	1.044	0.6001	7.2001	0.0000	0.0000
840.8	0.400211	0.6003	1.044	0.6003	7.2026	0.0000	0.0000
841	0.400347	0.6005	1.044	0.6005	7.2050	0.0000	0.0000
841.2	0.400483	0.6007	1.044	0.6007	7.2075	0.0000	0.0000
841.4	0.400619	0.6009	1.044	0.6009	7.2099	0.0000	0.0000
841.6	0.400756	0.6011	1.044	0.6011	7.2124	0.0000	0.0000
841.8	0.400892	0.6013	1.044	0.6013	7.2148	0.0000	0.0000
842	0.401029	0.6015	1.044	0.6015	7.2173	0.0000	0.0000
842.2	0.401165	0.6017	1.044	0.6017	7.2197	0.0000	0.0000
842.4	0.401301	0.6020	1.044	0.6020	7.2222	0.0000	0.0000
842.6	0.401438	0.6022	1.044	0.6022	7.2247	0.0000	0.0000
842.8	0.401575	0.6024	1.044	0.6024	7.2271	0.0000	0.0000
843	0.401711	0.6026	1.044	0.6026	7.2296	0.0000	0.0000
843.2	0.401848	0.6028	1.044	0.6028	7.2320	0.0000	0.0000
843.4	0.401984	0.6030	1.044	0.6030	7.2345	0.0000	0.0000
843.6	0.402121	0.6032	1.044	0.6032	7.2370	0.0000	0.0000
843.8	0.402258	0.6034	1.044	0.6034	7.2394	0.0000	0.0000
844	0.402395	0.6036	1.044	0.6036	7.2419	0.0000	0.0000
844.2	0.402532	0.6038	1.044	0.6038	7.2443	0.0000	0.0000
844.4	0.402669	0.6040	1.044	0.6040	7.2468	0.0000	0.0000

844.6	0.402806	0.6042	1.044	0.6042	7.2493	0.0000	0.0000
844.8	0.402942	0.6044	1.044	0.6044	7.2517	0.0000	0.0000
845	0.40308	0.6046	1.044	0.6046	7.2542	0.0000	0.0000
845.2	0.403217	0.6048	1.044	0.6048	7.2567	0.0000	0.0000
845.4	0.403354	0.6050	1.044	0.6050	7.2591	0.0000	0.0000
845.6	0.403491	0.6052	1.044	0.6052	7.2616	0.0000	0.0000
845.8	0.403628	0.6054	1.044	0.6054	7.2641	0.0000	0.0000
846	0.403765	0.6056	1.044	0.6056	7.2665	0.0000	0.0000
846.2	0.403903	0.6059	1.044	0.6059	7.2690	0.0000	0.0000
846.4	0.40404	0.6061	1.044	0.6061	7.2715	0.0000	0.0000
846.6	0.404177	0.6063	1.044	0.6063	7.2740	0.0000	0.0000
846.8	0.404315	0.6065	1.044	0.6065	7.2764	0.0000	0.0000
847	0.404452	0.6067	1.044	0.6067	7.2789	0.0000	0.0000
847.2	0.40459	0.6069	1.044	0.6069	7.2814	0.0000	0.0000
847.4	0.404727	0.6071	1.044	0.6071	7.2839	0.0000	0.0000
847.6	0.404865	0.6073	1.044	0.6073	7.2863	0.0000	0.0000
847.8	0.405002	0.6075	1.044	0.6075	7.2888	0.0000	0.0000
848	0.40514	0.6077	1.044	0.6077	7.2913	0.0000	0.0000
848.2	0.405278	0.6079	1.044	0.6079	7.2938	0.0000	0.0000
848.4	0.405415	0.6081	1.044	0.6081	7.2962	0.0000	0.0000
848.6	0.405553	0.6083	1.044	0.6083	7.2987	0.0000	0.0000
848.8	0.405691	0.6085	1.044	0.6085	7.3012	0.0000	0.0000
849	0.405829	0.6087	1.044	0.6087	7.3037	0.0000	0.0000
849.2	0.405967	0.6090	1.044	0.6090	7.3062	0.0000	0.0000
849.4	0.406105	0.6092	1.044	0.6092	7.3086	0.0000	0.0000
849.6	0.406243	0.6094	1.044	0.6094	7.3111	0.0000	0.0000
849.8	0.406381	0.6096	1.044	0.6096	7.3136	0.0000	0.0000
850	0.406519	0.6098	1.044	0.6098	7.3161	0.0000	0.0000
850.2	0.406657	0.6100	1.044	0.6100	7.3186	0.0000	0.0000
850.4	0.406795	0.6102	1.044	0.6102	7.3211	0.0000	0.0000
850.6	0.406933	0.6104	1.044	0.6104	7.3236	0.0000	0.0000
850.8	0.407072	0.6106	1.044	0.6106	7.3260	0.0000	0.0000
851	0.40721	0.6108	1.044	0.6108	7.3285	0.0000	0.0000
851.2	0.407348	0.6110	1.044	0.6110	7.3310	0.0000	0.0000
851.4	0.407487	0.6112	1.044	0.6112	7.3335	0.0000	0.0000
851.6	0.407625	0.6114	1.044	0.6114	7.3360	0.0000	0.0000
851.8	0.407764	0.6116	1.044	0.6116	7.3385	0.0000	0.0000
852	0.407902	0.6119	1.044	0.6119	7.3410	0.0000	0.0000
852.2	0.408041	0.6121	1.044	0.6121	7.3435	0.0000	0.0000
852.4	0.408179	0.6123	1.044	0.6123	7.3460	0.0000	0.0000
852.6	0.408318	0.6125	1.044	0.6125	7.3485	0.0000	0.0000
852.8	0.408457	0.6127	1.044	0.6127	7.3510	0.0000	0.0000
853	0.408595	0.6129	1.044	0.6129	7.3535	0.0000	0.0000
853.2	0.408734	0.6131	1.044	0.6131	7.3560	0.0000	0.0000
853.4	0.408873	0.6133	1.044	0.6133	7.3585	0.0000	0.0000
853.6	0.409012	0.6135	1.044	0.6135	7.3610	0.0000	0.0000
853.8	0.409151	0.6137	1.044	0.6137	7.3635	0.0000	0.0000

854	0.40929	0.6139	1.044	0.6139	7.3660	0.0000	0.0000
854.2	0.409429	0.6141	1.044	0.6141	7.3685	0.0000	0.0000
854.4	0.409568	0.6144	1.044	0.6144	7.3710	0.0000	0.0000
854.6	0.409707	0.6146	1.044	0.6146	7.3735	0.0000	0.0000
854.8	0.409846	0.6148	1.044	0.6148	7.3760	0.0000	0.0000
855	0.409985	0.6150	1.044	0.6150	7.3785	0.0000	0.0000
855.2	0.410124	0.6152	1.044	0.6152	7.3810	0.0000	0.0000
855.4	0.410264	0.6154	1.044	0.6154	7.3835	0.0000	0.0000
855.6	0.410403	0.6156	1.044	0.6156	7.3860	0.0000	0.0000
855.8	0.410542	0.6158	1.044	0.6158	7.3885	0.0000	0.0000
856	0.410682	0.6160	1.044	0.6160	7.3910	0.0000	0.0000
856.2	0.410821	0.6162	1.044	0.6162	7.3935	0.0000	0.0000
856.4	0.410961	0.6164	1.044	0.6164	7.3960	0.0000	0.0000
856.6	0.4111	0.6167	1.044	0.6167	7.3985	0.0000	0.0000
856.8	0.41124	0.6169	1.044	0.6169	7.4011	0.0000	0.0000
857	0.411379	0.6171	1.044	0.6171	7.4036	0.0000	0.0000
857.2	0.411519	0.6173	1.044	0.6173	7.4061	0.0000	0.0000
857.4	0.411659	0.6175	1.044	0.6175	7.4086	0.0000	0.0000
857.6	0.411798	0.6177	1.044	0.6177	7.4111	0.0000	0.0000
857.8	0.411938	0.6179	1.044	0.6179	7.4136	0.0000	0.0000
858	0.412078	0.6181	1.044	0.6181	7.4161	0.0000	0.0000
858.2	0.412218	0.6183	1.044	0.6183	7.4187	0.0000	0.0000
858.4	0.412358	0.6185	1.044	0.6185	7.4212	0.0000	0.0000
858.6	0.412498	0.6187	1.044	0.6187	7.4237	0.0000	0.0000
858.8	0.412638	0.6190	1.044	0.6190	7.4262	0.0000	0.0000
859	0.412778	0.6192	1.044	0.6192	7.4287	0.0000	0.0000
859.2	0.412918	0.6194	1.044	0.6194	7.4313	0.0000	0.0000
859.4	0.413058	0.6196	1.044	0.6196	7.4338	0.0000	0.0000
859.6	0.413198	0.6198	1.044	0.6198	7.4363	0.0000	0.0000
859.8	0.413339	0.6200	1.044	0.6200	7.4388	0.0000	0.0000
860	0.413479	0.6202	1.044	0.6202	7.4414	0.0000	0.0000
860.2	0.413619	0.6204	1.044	0.6204	7.4439	0.0000	0.0000
860.4	0.41376	0.6206	1.044	0.6206	7.4464	0.0000	0.0000
860.6	0.4139	0.6209	1.044	0.6209	7.4489	0.0000	0.0000
860.8	0.414041	0.6211	1.044	0.6211	7.4515	0.0000	0.0000
861	0.414181	0.6213	1.044	0.6213	7.4540	0.0000	0.0000
861.2	0.414322	0.6215	1.044	0.6215	7.4565	0.0000	0.0000
861.4	0.414462	0.6217	1.044	0.6217	7.4591	0.0000	0.0000
861.6	0.414603	0.6219	1.044	0.6219	7.4616	0.0000	0.0000
861.8	0.414744	0.6221	1.044	0.6221	7.4641	0.0000	0.0000
862	0.414884	0.6223	1.044	0.6223	7.4667	0.0000	0.0000
862.2	0.415025	0.6225	1.044	0.6225	7.4692	0.0000	0.0000
862.4	0.415166	0.6227	1.044	0.6227	7.4717	0.0000	0.0000
862.6	0.415307	0.6230	1.044	0.6230	7.4743	0.0000	0.0000
862.8	0.415448	0.6232	1.044	0.6232	7.4768	0.0000	0.0000
863	0.415589	0.6234	1.044	0.6234	7.4793	0.0000	0.0000
863.2	0.41573	0.6236	1.044	0.6236	7.4819	0.0000	0.0000

863.4	0.415871	0.6238	1.044	0.6238	7.4844	0.0000	0.0000
863.6	0.416012	0.6240	1.044	0.6240	7.4869	0.0000	0.0000
863.8	0.416153	0.6242	1.044	0.6242	7.4895	0.0000	0.0000
864	0.416294	0.6244	1.044	0.6244	7.4920	0.0000	0.0000
864.2	0.416436	0.6247	1.044	0.6247	7.4946	0.0000	0.0000
864.4	0.416577	0.6249	1.044	0.6249	7.4971	0.0000	0.0000
864.6	0.416718	0.6251	1.044	0.6251	7.4997	0.0000	0.0000
864.8	0.41686	0.6253	1.044	0.6253	7.5022	0.0000	0.0000
865	0.417001	0.6255	1.044	0.6255	7.5047	0.0000	0.0000
865.2	0.417143	0.6257	1.044	0.6257	7.5073	0.0000	0.0000
865.4	0.417284	0.6259	1.044	0.6259	7.5098	0.0000	0.0000
865.6	0.417426	0.6261	1.044	0.6261	7.5124	0.0000	0.0000
865.8	0.417567	0.6264	1.044	0.6264	7.5149	0.0000	0.0000
866	0.417709	0.6266	1.044	0.6266	7.5175	0.0000	0.0000
866.2	0.417851	0.6268	1.044	0.6268	7.5200	0.0000	0.0000
866.4	0.417992	0.6270	1.044	0.6270	7.5226	0.0000	0.0000
866.6	0.418134	0.6272	1.044	0.6272	7.5251	0.0000	0.0000
866.8	0.418276	0.6274	1.044	0.6274	7.5277	0.0000	0.0000
867	0.418418	0.6276	1.044	0.6276	7.5302	0.0000	0.0000
867.2	0.41856	0.6278	1.044	0.6278	7.5328	0.0000	0.0000
867.4	0.418702	0.6281	1.044	0.6281	7.5354	0.0000	0.0000
867.6	0.418844	0.6283	1.044	0.6283	7.5379	0.0000	0.0000
867.8	0.418986	0.6285	1.044	0.6285	7.5405	0.0000	0.0000
868	0.419128	0.6287	1.044	0.6287	7.5430	0.0000	0.0000
868.2	0.41927	0.6289	1.044	0.6289	7.5456	0.0000	0.0000
868.4	0.419413	0.6291	1.044	0.6291	7.5481	0.0000	0.0000
868.6	0.419555	0.6293	1.044	0.6293	7.5507	0.0000	0.0000
868.8	0.419697	0.6295	1.044	0.6295	7.5533	0.0000	0.0000
869	0.41984	0.6298	1.044	0.6298	7.5558	0.0000	0.0000
869.2	0.419982	0.6300	1.044	0.6300	7.5584	0.0000	0.0000
869.4	0.420124	0.6302	1.044	0.6302	7.5610	0.0000	0.0000
869.6	0.420267	0.6304	1.044	0.6304	7.5635	0.0000	0.0000
869.8	0.420409	0.6306	1.044	0.6306	7.5661	0.0000	0.0000
870	0.420552	0.6308	1.044	0.6308	7.5687	0.0000	0.0000
870.2	0.420695	0.6310	1.044	0.6310	7.5712	0.0000	0.0000
870.4	0.420837	0.6313	1.044	0.6313	7.5738	0.0000	0.0000
870.6	0.42098	0.6315	1.044	0.6315	7.5764	0.0000	0.0000
870.8	0.421123	0.6317	1.044	0.6317	7.5789	0.0000	0.0000
871	0.421266	0.6319	1.044	0.6319	7.5815	0.0000	0.0000
871.2	0.421409	0.6321	1.044	0.6321	7.5841	0.0000	0.0000
871.4	0.421552	0.6323	1.044	0.6323	7.5866	0.0000	0.0000
871.6	0.421695	0.6325	1.044	0.6325	7.5892	0.0000	0.0000
871.8	0.421838	0.6328	1.044	0.6328	7.5918	0.0000	0.0000
872	0.421981	0.6330	1.044	0.6330	7.5944	0.0000	0.0000
872.2	0.422124	0.6332	1.044	0.6332	7.5969	0.0000	0.0000
872.4	0.422267	0.6334	1.044	0.6334	7.5995	0.0000	0.0000
872.6	0.42241	0.6336	1.044	0.6336	7.6021	0.0000	0.0000

872.8	0.422554	0.6338	1.044	0.6338	7.6047	0.0000	0.0000
873	0.422697	0.6340	1.044	0.6340	7.6073	0.0000	0.0000
873.2	0.42284	0.6343	1.044	0.6343	7.6098	0.0000	0.0000
873.4	0.422984	0.6345	1.044	0.6345	7.6124	0.0000	0.0000
873.6	0.423127	0.6347	1.044	0.6347	7.6150	0.0000	0.0000
873.8	0.423271	0.6349	1.044	0.6349	7.6176	0.0000	0.0000
874	0.423414	0.6351	1.044	0.6351	7.6202	0.0000	0.0000
874.2	0.423558	0.6353	1.044	0.6353	7.6227	0.0000	0.0000
874.4	0.423701	0.6356	1.044	0.6356	7.6253	0.0000	0.0000
874.6	0.423845	0.6358	1.044	0.6358	7.6279	0.0000	0.0000
874.8	0.423989	0.6360	1.044	0.6360	7.6305	0.0000	0.0000
875	0.424133	0.6362	1.044	0.6362	7.6331	0.0000	0.0000
875.2	0.424277	0.6364	1.044	0.6364	7.6357	0.0000	0.0000
875.4	0.424421	0.6366	1.044	0.6366	7.6383	0.0000	0.0000
875.6	0.424565	0.6368	1.044	0.6368	7.6409	0.0000	0.0000
875.8	0.424709	0.6371	1.044	0.6371	7.6435	0.0000	0.0000
876	0.424853	0.6373	1.044	0.6373	7.6460	0.0000	0.0000
876.2	0.424997	0.6375	1.044	0.6375	7.6486	0.0000	0.0000
876.4	0.425141	0.6377	1.044	0.6377	7.6512	0.0000	0.0000
876.6	0.425285	0.6379	1.044	0.6379	7.6538	0.0000	0.0000
876.8	0.425429	0.6381	1.044	0.6381	7.6564	0.0000	0.0000
877	0.425574	0.6384	1.044	0.6384	7.6590	0.0000	0.0000
877.2	0.425718	0.6386	1.044	0.6386	7.6616	0.0000	0.0000
877.4	0.425862	0.6388	1.044	0.6388	7.6642	0.0000	0.0000
877.6	0.426007	0.6390	1.044	0.6390	7.6668	0.0000	0.0000
877.8	0.426151	0.6392	1.044	0.6392	7.6694	0.0000	0.0000
878	0.426296	0.6394	1.044	0.6394	7.6720	0.0000	0.0000
878.2	0.42644	0.6397	1.044	0.6397	7.6746	0.0000	0.0000
878.4	0.426585	0.6399	1.044	0.6399	7.6772	0.0000	0.0000
878.6	0.42673	0.6401	1.044	0.6401	7.6798	0.0000	0.0000
878.8	0.426874	0.6403	1.044	0.6403	7.6824	0.0000	0.0000
879	0.427019	0.6405	1.044	0.6405	7.6850	0.0000	0.0000
879.2	0.427164	0.6407	1.044	0.6407	7.6877	0.0000	0.0000
879.4	0.427309	0.6410	1.044	0.6410	7.6903	0.0000	0.0000
879.6	0.427454	0.6412	1.044	0.6412	7.6929	0.0000	0.0000
879.8	0.427599	0.6414	1.044	0.6414	7.6955	0.0000	0.0000
880	0.427744	0.6416	1.044	0.6416	7.6981	0.0000	0.0000
880.2	0.427889	0.6418	1.044	0.6418	7.7007	0.0000	0.0000
880.4	0.428034	0.6421	1.044	0.6421	7.7033	0.0000	0.0000
880.6	0.428179	0.6423	1.044	0.6423	7.7059	0.0000	0.0000
880.8	0.428325	0.6425	1.044	0.6425	7.7085	0.0000	0.0000
881	0.42847	0.6427	1.044	0.6427	7.7112	0.0000	0.0000
881.2	0.428615	0.6429	1.044	0.6429	7.7138	0.0000	0.0000
881.4	0.428761	0.6431	1.044	0.6431	7.7164	0.0000	0.0000
881.6	0.428906	0.6434	1.044	0.6434	7.7190	0.0000	0.0000
881.8	0.429052	0.6436	1.044	0.6436	7.7216	0.0000	0.0000
882	0.429197	0.6438	1.044	0.6438	7.7242	0.0000	0.0000

882.2	0.429343	0.6440	1.044	0.6440	7.7269	0.0000	0.0000
882.4	0.429488	0.6442	1.044	0.6442	7.7295	0.0000	0.0000
882.6	0.429634	0.6445	1.044	0.6445	7.7321	0.0000	0.0000
882.8	0.42978	0.6447	1.044	0.6447	7.7347	0.0000	0.0000
883	0.429926	0.6449	1.044	0.6449	7.7374	0.0000	0.0000
883.2	0.430072	0.6451	1.044	0.6451	7.7400	0.0000	0.0000
883.4	0.430217	0.6453	1.044	0.6453	7.7426	0.0000	0.0000
883.6	0.430363	0.6455	1.044	0.6455	7.7452	0.0000	0.0000
883.8	0.430509	0.6458	1.044	0.6458	7.7479	0.0000	0.0000
884	0.430656	0.6460	1.044	0.6460	7.7505	0.0000	0.0000
884.2	0.430802	0.6462	1.044	0.6462	7.7531	0.0000	0.0000
884.4	0.430948	0.6464	1.044	0.6464	7.7557	0.0000	0.0000
884.6	0.431094	0.6466	1.044	0.6466	7.7584	0.0000	0.0000
884.8	0.43124	0.6469	1.044	0.6469	7.7610	0.0000	0.0000
885	0.431387	0.6471	1.044	0.6471	7.7636	0.0000	0.0000
885.2	0.431533	0.6473	1.044	0.6473	7.7663	0.0000	0.0000
885.4	0.431679	0.6475	1.044	0.6475	7.7689	0.0000	0.0000
885.6	0.431826	0.6477	1.044	0.6477	7.7715	0.0000	0.0000
885.8	0.431972	0.6480	1.044	0.6480	7.7742	0.0000	0.0000
886	0.432119	0.6482	1.044	0.6482	7.7768	0.0000	0.0000
886.2	0.432266	0.6484	1.044	0.6484	7.7795	0.0000	0.0000
886.4	0.432412	0.6486	1.044	0.6486	7.7821	0.0000	0.0000
886.6	0.432559	0.6488	1.044	0.6488	7.7847	0.0000	0.0000
886.8	0.432706	0.6491	1.044	0.6491	7.7874	0.0000	0.0000
887	0.432853	0.6493	1.044	0.6493	7.7900	0.0000	0.0000
887.2	0.432999	0.6495	1.044	0.6495	7.7927	0.0000	0.0000
887.4	0.433146	0.6497	1.044	0.6497	7.7953	0.0000	0.0000
887.6	0.433293	0.6499	1.044	0.6499	7.7980	0.0000	0.0000
887.8	0.43344	0.6502	1.044	0.6502	7.8006	0.0000	0.0000
888	0.433588	0.6504	1.044	0.6504	7.8033	0.0000	0.0000
888.2	0.433735	0.6506	1.044	0.6506	7.8059	0.0000	0.0000
888.4	0.433882	0.6508	1.044	0.6508	7.8085	0.0000	0.0000
888.6	0.434029	0.6510	1.044	0.6510	7.8112	0.0000	0.0000
888.8	0.434176	0.6513	1.044	0.6513	7.8138	0.0000	0.0000
889	0.434324	0.6515	1.044	0.6515	7.8165	0.0000	0.0000
889.2	0.434471	0.6517	1.044	0.6517	7.8192	0.0000	0.0000
889.4	0.434619	0.6519	1.044	0.6519	7.8218	0.0000	0.0000
889.6	0.434766	0.6521	1.044	0.6521	7.8245	0.0000	0.0000
889.8	0.434914	0.6524	1.044	0.6524	7.8271	0.0000	0.0000
890	0.435061	0.6526	1.044	0.6526	7.8298	0.0000	0.0000
890.2	0.435209	0.6528	1.044	0.6528	7.8324	0.0000	0.0000
890.4	0.435357	0.6530	1.044	0.6530	7.8351	0.0000	0.0000
890.6	0.435505	0.6533	1.044	0.6533	7.8378	0.0000	0.0000
890.8	0.435652	0.6535	1.044	0.6535	7.8404	0.0000	0.0000
891	0.4358	0.6537	1.044	0.6537	7.8431	0.0000	0.0000
891.2	0.435948	0.6539	1.044	0.6539	7.8457	0.0000	0.0000
891.4	0.436096	0.6541	1.044	0.6541	7.8484	0.0000	0.0000

891.6	0.436244	0.6544	1.044	0.6544	7.8511	0.0000	0.0000
891.8	0.436392	0.6546	1.044	0.6546	7.8537	0.0000	0.0000
892	0.43654	0.6548	1.044	0.6548	7.8564	0.0000	0.0000
892.2	0.436689	0.6550	1.044	0.6550	7.8591	0.0000	0.0000
892.4	0.436837	0.6553	1.044	0.6553	7.8617	0.0000	0.0000
892.6	0.436985	0.6555	1.044	0.6555	7.8644	0.0000	0.0000
892.8	0.437134	0.6557	1.044	0.6557	7.8671	0.0000	0.0000
893	0.437282	0.6559	1.044	0.6559	7.8697	0.0000	0.0000
893.2	0.437431	0.6561	1.044	0.6561	7.8724	0.0000	0.0000
893.4	0.437579	0.6564	1.044	0.6564	7.8751	0.0000	0.0000
893.6	0.437728	0.6566	1.044	0.6566	7.8778	0.0000	0.0000
893.8	0.437876	0.6568	1.044	0.6568	7.8804	0.0000	0.0000
894	0.438025	0.6570	1.044	0.6570	7.8831	0.0000	0.0000
894.2	0.438174	0.6573	1.044	0.6573	7.8858	0.0000	0.0000
894.4	0.438323	0.6575	1.044	0.6575	7.8885	0.0000	0.0000
894.6	0.438471	0.6577	1.044	0.6577	7.8911	0.0000	0.0000
894.8	0.43862	0.6579	1.044	0.6579	7.8938	0.0000	0.0000
895	0.438769	0.6582	1.044	0.6582	7.8965	0.0000	0.0000
895.2	0.438918	0.6584	1.044	0.6584	7.8992	0.0000	0.0000
895.4	0.439067	0.6586	1.044	0.6586	7.9019	0.0000	0.0000
895.6	0.439216	0.6588	1.044	0.6588	7.9046	0.0000	0.0000
895.8	0.439366	0.6590	1.044	0.6590	7.9072	0.0000	0.0000
896	0.439515	0.6593	1.044	0.6593	7.9099	0.0000	0.0000
896.2	0.439664	0.6595	1.044	0.6595	7.9126	0.0000	0.0000
896.4	0.439814	0.6597	1.044	0.6597	7.9153	0.0000	0.0000
896.6	0.439963	0.6599	1.044	0.6599	7.9180	0.0000	0.0000
896.8	0.440112	0.6602	1.044	0.6602	7.9207	0.0000	0.0000
897	0.440262	0.6604	1.044	0.6604	7.9234	0.0000	0.0000
897.2	0.440411	0.6606	1.044	0.6606	7.9261	0.0000	0.0000
897.4	0.440561	0.6608	1.044	0.6608	7.9288	0.0000	0.0000
897.6	0.440711	0.6611	1.044	0.6611	7.9314	0.0000	0.0000
897.8	0.44086	0.6613	1.044	0.6613	7.9341	0.0000	0.0000
898	0.44101	0.6615	1.044	0.6615	7.9368	0.0000	0.0000
898.2	0.44116	0.6617	1.044	0.6617	7.9395	0.0000	0.0000
898.4	0.44131	0.6620	1.044	0.6620	7.9422	0.0000	0.0000
898.6	0.44146	0.6622	1.044	0.6622	7.9449	0.0000	0.0000
898.8	0.44161	0.6624	1.044	0.6624	7.9476	0.0000	0.0000
899	0.44176	0.6626	1.044	0.6626	7.9503	0.0000	0.0000
899.2	0.44191	0.6629	1.044	0.6629	7.9530	0.0000	0.0000
899.4	0.44206	0.6631	1.044	0.6631	7.9557	0.0000	0.0000
899.6	0.442211	0.6633	1.044	0.6633	7.9584	0.0000	0.0000
899.8	0.442361	0.6635	1.044	0.6635	7.9611	0.0000	0.0000
900	0.442511	0.6638	1.044	0.6638	7.9638	0.0000	0.0000
900.2	0.442662	0.6640	1.044	0.6640	7.9666	0.0000	0.0000
900.4	0.442812	0.6642	1.044	0.6642	7.9693	0.0000	0.0000
900.6	0.442963	0.6644	1.044	0.6644	7.9720	0.0000	0.0000
900.8	0.443113	0.6647	1.044	0.6647	7.9747	0.0000	0.0000

901	0.443264	0.6649	1.044	0.6649	7.9774	0.0000	0.0000
901.2	0.443414	0.6651	1.044	0.6651	7.9801	0.0000	0.0000
901.4	0.443565	0.6653	1.044	0.6653	7.9828	0.0000	0.0000
901.6	0.443716	0.6656	1.044	0.6656	7.9855	0.0000	0.0000
901.8	0.443867	0.6658	1.044	0.6658	7.9882	0.0000	0.0000
902	0.444018	0.6660	1.044	0.6660	7.9910	0.0000	0.0000
902.2	0.444169	0.6663	1.044	0.6663	7.9937	0.0000	0.0000
902.4	0.44432	0.6665	1.044	0.6665	7.9964	0.0000	0.0000
902.6	0.444471	0.6667	1.044	0.6667	7.9991	0.0000	0.0000
902.8	0.444622	0.6669	1.044	0.6669	8.0018	0.0000	0.0000
903	0.444773	0.6672	1.044	0.6672	8.0046	0.0000	0.0000
903.2	0.444924	0.6674	1.044	0.6674	8.0073	0.0000	0.0000
903.4	0.445076	0.6676	1.044	0.6676	8.0100	0.0000	0.0000
903.6	0.445227	0.6678	1.044	0.6678	8.0127	0.0000	0.0000
903.8	0.445378	0.6681	1.044	0.6681	8.0154	0.0000	0.0000
904	0.44553	0.6683	1.044	0.6683	8.0182	0.0000	0.0000
904.2	0.445681	0.6685	1.044	0.6685	8.0209	0.0000	0.0000
904.4	0.445833	0.6687	1.044	0.6687	8.0236	0.0000	0.0000
904.6	0.445985	0.6690	1.044	0.6690	8.0264	0.0000	0.0000
904.8	0.446136	0.6692	1.044	0.6692	8.0291	0.0000	0.0000
905	0.446288	0.6694	1.044	0.6694	8.0318	0.0000	0.0000
905.2	0.44644	0.6697	1.044	0.6697	8.0346	0.0000	0.0000
905.4	0.446592	0.6699	1.044	0.6699	8.0373	0.0000	0.0000
905.6	0.446744	0.6701	1.044	0.6701	8.0400	0.0000	0.0000
905.8	0.446896	0.6703	1.044	0.6703	8.0428	0.0000	0.0000
906	0.447048	0.6706	1.044	0.6706	8.0455	0.0000	0.0000
906.2	0.4472	0.6708	1.044	0.6708	8.0482	0.0000	0.0000
906.4	0.447352	0.6710	1.044	0.6710	8.0510	0.0000	0.0000
906.6	0.447504	0.6713	1.044	0.6713	8.0537	0.0000	0.0000
906.8	0.447657	0.6715	1.044	0.6715	8.0564	0.0000	0.0000
907	0.447809	0.6717	1.044	0.6717	8.0592	0.0000	0.0000
907.2	0.447961	0.6719	1.044	0.6719	8.0619	0.0000	0.0000
907.4	0.448114	0.6722	1.044	0.6722	8.0647	0.0000	0.0000
907.6	0.448266	0.6724	1.044	0.6724	8.0674	0.0000	0.0000
907.8	0.448419	0.6726	1.044	0.6726	8.0702	0.0000	0.0000
908	0.448572	0.6729	1.044	0.6729	8.0729	0.0000	0.0000
908.2	0.448724	0.6731	1.044	0.6731	8.0757	0.0000	0.0000
908.4	0.448877	0.6733	1.044	0.6733	8.0784	0.0000	0.0000
908.6	0.44903	0.6735	1.044	0.6735	8.0812	0.0000	0.0000
908.8	0.449183	0.6738	1.044	0.6738	8.0839	0.0000	0.0000
909	0.449336	0.6740	1.044	0.6740	8.0867	0.0000	0.0000
909.2	0.449489	0.6742	1.044	0.6742	8.0894	0.0000	0.0000
909.4	0.449642	0.6745	1.044	0.6745	8.0922	0.0000	0.0000
909.6	0.449795	0.6747	1.044	0.6747	8.0949	0.0000	0.0000
909.8	0.449948	0.6749	1.044	0.6749	8.0977	0.0000	0.0000
910	0.450101	0.6752	1.044	0.6752	8.1004	0.0000	0.0000
910.2	0.450255	0.6754	1.044	0.6754	8.1032	0.0000	0.0000

910.4	0.450408	0.6756	1.044	0.6756	8.1060	0.0000	0.0000
910.6	0.450561	0.6758	1.044	0.6758	8.1087	0.0000	0.0000
910.8	0.450715	0.6761	1.044	0.6761	8.1115	0.0000	0.0000
911	0.450868	0.6763	1.044	0.6763	8.1142	0.0000	0.0000
911.2	0.451022	0.6765	1.044	0.6765	8.1170	0.0000	0.0000
911.4	0.451176	0.6768	1.044	0.6768	8.1198	0.0000	0.0000
911.6	0.451329	0.6770	1.044	0.6770	8.1225	0.0000	0.0000
911.8	0.451483	0.6772	1.044	0.6772	8.1253	0.0000	0.0000
912	0.451637	0.6775	1.044	0.6775	8.1281	0.0000	0.0000
912.2	0.451791	0.6777	1.044	0.6777	8.1308	0.0000	0.0000
912.4	0.451945	0.6779	1.044	0.6779	8.1336	0.0000	0.0000
912.6	0.452099	0.6781	1.044	0.6781	8.1364	0.0000	0.0000
912.8	0.452253	0.6784	1.044	0.6784	8.1392	0.0000	0.0000
913	0.452407	0.6786	1.044	0.6786	8.1419	0.0000	0.0000
913.2	0.452561	0.6788	1.044	0.6788	8.1447	0.0000	0.0000
913.4	0.452715	0.6791	1.044	0.6791	8.1475	0.0000	0.0000
913.6	0.45287	0.6793	1.044	0.6793	8.1503	0.0000	0.0000
913.8	0.453024	0.6795	1.044	0.6795	8.1530	0.0000	0.0000
914	0.453179	0.6798	1.044	0.6798	8.1558	0.0000	0.0000
914.2	0.453333	0.6800	1.044	0.6800	8.1586	0.0000	0.0000
914.4	0.453488	0.6802	1.044	0.6802	8.1614	0.0000	0.0000
914.6	0.453642	0.6805	1.044	0.6805	8.1642	0.0000	0.0000
914.8	0.453797	0.6807	1.044	0.6807	8.1670	0.0000	0.0000
915	0.453952	0.6809	1.044	0.6809	8.1697	0.0000	0.0000
915.2	0.454106	0.6812	1.044	0.6812	8.1725	0.0000	0.0000
915.4	0.454261	0.6814	1.044	0.6814	8.1753	0.0000	0.0000
915.6	0.454416	0.6816	1.044	0.6816	8.1781	0.0000	0.0000
915.8	0.454571	0.6819	1.044	0.6819	8.1809	0.0000	0.0000
916	0.454726	0.6821	1.044	0.6821	8.1837	0.0000	0.0000
916.2	0.454881	0.6823	1.044	0.6823	8.1865	0.0000	0.0000
916.4	0.455037	0.6826	1.044	0.6826	8.1893	0.0000	0.0000
916.6	0.455192	0.6828	1.044	0.6828	8.1921	0.0000	0.0000
916.8	0.455347	0.6830	1.044	0.6830	8.1948	0.0000	0.0000
917	0.455502	0.6833	1.044	0.6833	8.1976	0.0000	0.0000
917.2	0.455658	0.6835	1.044	0.6835	8.2004	0.0000	0.0000
917.4	0.455813	0.6837	1.044	0.6837	8.2032	0.0000	0.0000
917.6	0.455969	0.6840	1.044	0.6840	8.2060	0.0000	0.0000
917.8	0.456125	0.6842	1.044	0.6842	8.2088	0.0000	0.0000
918	0.45628	0.6844	1.044	0.6844	8.2116	0.0000	0.0000
918.2	0.456436	0.6847	1.044	0.6847	8.2144	0.0000	0.0000
918.4	0.456592	0.6849	1.044	0.6849	8.2172	0.0000	0.0000
918.6	0.456748	0.6851	1.044	0.6851	8.2201	0.0000	0.0000
918.8	0.456903	0.6854	1.044	0.6854	8.2229	0.0000	0.0000
919	0.457059	0.6856	1.044	0.6856	8.2257	0.0000	0.0000
919.2	0.457216	0.6858	1.044	0.6858	8.2285	0.0000	0.0000
919.4	0.457372	0.6861	1.044	0.6861	8.2313	0.0000	0.0000
919.6	0.457528	0.6863	1.044	0.6863	8.2341	0.0000	0.0000

919.8	0.457684	0.6865	1.044	0.6865	8.2369	0.0000	0.0000
920	0.45784	0.6868	1.044	0.6868	8.2397	0.0000	0.0000
920.2	0.457997	0.6870	1.044	0.6870	8.2425	0.0000	0.0000
920.4	0.458153	0.6872	1.044	0.6872	8.2453	0.0000	0.0000
920.6	0.45831	0.6875	1.044	0.6875	8.2482	0.0000	0.0000
920.8	0.458466	0.6877	1.044	0.6877	8.2510	0.0000	0.0000
921	0.458623	0.6879	1.044	0.6879	8.2538	0.0000	0.0000
921.2	0.458779	0.6882	1.044	0.6882	8.2566	0.0000	0.0000
921.4	0.458936	0.6884	1.044	0.6884	8.2594	0.0000	0.0000
921.6	0.459093	0.6886	1.044	0.6886	8.2623	0.0000	0.0000
921.8	0.45925	0.6889	1.044	0.6889	8.2651	0.0000	0.0000
922	0.459407	0.6891	1.044	0.6891	8.2679	0.0000	0.0000
922.2	0.459564	0.6893	1.044	0.6893	8.2707	0.0000	0.0000
922.4	0.459721	0.6896	1.044	0.6896	8.2736	0.0000	0.0000
922.6	0.459878	0.6898	1.044	0.6898	8.2764	0.0000	0.0000
922.8	0.460035	0.6901	1.044	0.6901	8.2792	0.0000	0.0000
923	0.460192	0.6903	1.044	0.6903	8.2820	0.0000	0.0000
923.2	0.46035	0.6905	1.044	0.6905	8.2849	0.0000	0.0000
923.4	0.460507	0.6908	1.044	0.6908	8.2877	0.0000	0.0000
923.6	0.460665	0.6910	1.044	0.6910	8.2905	0.0000	0.0000
923.8	0.460822	0.6912	1.044	0.6912	8.2934	0.0000	0.0000
924	0.46098	0.6915	1.044	0.6915	8.2962	0.0000	0.0000
924.2	0.461137	0.6917	1.044	0.6917	8.2991	0.0000	0.0000
924.4	0.461295	0.6919	1.044	0.6919	8.3019	0.0000	0.0000
924.6	0.461453	0.6922	1.044	0.6922	8.3047	0.0000	0.0000
924.8	0.461611	0.6924	1.044	0.6924	8.3076	0.0000	0.0000
925	0.461769	0.6927	1.044	0.6927	8.3104	0.0000	0.0000
925.2	0.461927	0.6929	1.044	0.6929	8.3133	0.0000	0.0000
925.4	0.462085	0.6931	1.044	0.6931	8.3161	0.0000	0.0000
925.6	0.462243	0.6934	1.044	0.6934	8.3189	0.0000	0.0000
925.8	0.462401	0.6936	1.044	0.6936	8.3218	0.0000	0.0000
926	0.462559	0.6938	1.044	0.6938	8.3246	0.0000	0.0000
926.2	0.462717	0.6941	1.044	0.6941	8.3275	0.0000	0.0000
926.4	0.462876	0.6943	1.044	0.6943	8.3303	0.0000	0.0000
926.6	0.463034	0.6946	1.044	0.6946	8.3332	0.0000	0.0000
926.8	0.463193	0.6948	1.044	0.6948	8.3360	0.0000	0.0000
927	0.463351	0.6950	1.044	0.6950	8.3389	0.0000	0.0000
927.2	0.46351	0.6953	1.044	0.6953	8.3418	0.0000	0.0000
927.4	0.463669	0.6955	1.044	0.6955	8.3446	0.0000	0.0000
927.6	0.463827	0.6957	1.044	0.6957	8.3475	0.0000	0.0000
927.8	0.463986	0.6960	1.044	0.6960	8.3503	0.0000	0.0000
928	0.464145	0.6962	1.044	0.6962	8.3532	0.0000	0.0000
928.2	0.464304	0.6965	1.044	0.6965	8.3560	0.0000	0.0000
928.4	0.464463	0.6967	1.044	0.6967	8.3589	0.0000	0.0000
928.6	0.464622	0.6969	1.044	0.6969	8.3618	0.0000	0.0000
928.8	0.464781	0.6972	1.044	0.6972	8.3646	0.0000	0.0000
929	0.464941	0.6974	1.044	0.6974	8.3675	0.0000	0.0000

929.2	0.4651	0.6976	1.044	0.6976	8.3704	0.0000	0.0000
929.4	0.465259	0.6979	1.044	0.6979	8.3732	0.0000	0.0000
929.6	0.465419	0.6981	1.044	0.6981	8.3761	0.0000	0.0000
929.8	0.465578	0.6984	1.044	0.6984	8.3790	0.0000	0.0000
930	0.465738	0.6986	1.044	0.6986	8.3818	0.0000	0.0000
930.2	0.465897	0.6988	1.044	0.6988	8.3847	0.0000	0.0000
930.4	0.466057	0.6991	1.044	0.6991	8.3876	0.0000	0.0000
930.6	0.466217	0.6993	1.044	0.6993	8.3905	0.0000	0.0000
930.8	0.466377	0.6996	1.044	0.6996	8.3933	0.0000	0.0000
931	0.466537	0.6998	1.044	0.6998	8.3962	0.0000	0.0000
931.2	0.466697	0.7000	1.044	0.7000	8.3991	0.0000	0.0000
931.4	0.466857	0.7003	1.044	0.7003	8.4020	0.0000	0.0000
931.6	0.467017	0.7005	1.044	0.7005	8.4049	0.0000	0.0000
931.8	0.467177	0.7008	1.044	0.7008	8.4077	0.0000	0.0000
932	0.467337	0.7010	1.044	0.7010	8.4106	0.0000	0.0000
932.2	0.467498	0.7012	1.044	0.7012	8.4135	0.0000	0.0000
932.4	0.467658	0.7015	1.044	0.7015	8.4164	0.0000	0.0000
932.6	0.467818	0.7017	1.044	0.7017	8.4193	0.0000	0.0000
932.8	0.467979	0.7020	1.044	0.7020	8.4222	0.0000	0.0000
933	0.46814	0.7022	1.044	0.7022	8.4251	0.0000	0.0000
933.2	0.4683	0.7025	1.044	0.7025	8.4280	0.0000	0.0000
933.4	0.468461	0.7027	1.044	0.7027	8.4308	0.0000	0.0000
933.6	0.468622	0.7029	1.044	0.7029	8.4337	0.0000	0.0000
933.8	0.468783	0.7032	1.044	0.7032	8.4366	0.0000	0.0000
934	0.468944	0.7034	1.044	0.7034	8.4395	0.0000	0.0000
934.2	0.469105	0.7037	1.044	0.7037	8.4424	0.0000	0.0000
934.4	0.469266	0.7039	1.044	0.7039	8.4453	0.0000	0.0000
934.6	0.469427	0.7041	1.044	0.7041	8.4482	0.0000	0.0000
934.8	0.469588	0.7044	1.044	0.7044	8.4511	0.0000	0.0000
935	0.469749	0.7046	1.044	0.7046	8.4540	0.0000	0.0000
935.2	0.469911	0.7049	1.044	0.7049	8.4569	0.0000	0.0000
935.4	0.470072	0.7051	1.044	0.7051	8.4598	0.0000	0.0000
935.6	0.470234	0.7054	1.044	0.7054	8.4627	0.0000	0.0000
935.8	0.470395	0.7056	1.044	0.7056	8.4657	0.0000	0.0000
936	0.470557	0.7058	1.044	0.7058	8.4686	0.0000	0.0000
936.2	0.470718	0.7061	1.044	0.7061	8.4715	0.0000	0.0000
936.4	0.47088	0.7063	1.044	0.7063	8.4744	0.0000	0.0000
936.6	0.471042	0.7066	1.044	0.7066	8.4773	0.0000	0.0000
936.8	0.471204	0.7068	1.044	0.7068	8.4802	0.0000	0.0000
937	0.471366	0.7070	1.044	0.7070	8.4831	0.0000	0.0000
937.2	0.471528	0.7073	1.044	0.7073	8.4860	0.0000	0.0000
937.4	0.47169	0.7075	1.044	0.7075	8.4890	0.0000	0.0000
937.6	0.471852	0.7078	1.044	0.7078	8.4919	0.0000	0.0000
937.8	0.472015	0.7080	1.044	0.7080	8.4948	0.0000	0.0000
938	0.472177	0.7083	1.044	0.7083	8.4977	0.0000	0.0000
938.2	0.472339	0.7085	1.044	0.7085	8.5006	0.0000	0.0000
938.4	0.472502	0.7088	1.044	0.7088	8.5036	0.0000	0.0000

938.6	0.472664	0.7090	1.044	0.7090	8.5065	0.0000	0.0000
938.8	0.472827	0.7092	1.044	0.7092	8.5094	0.0000	0.0000
939	0.47299	0.7095	1.044	0.7095	8.5124	0.0000	0.0000
939.2	0.473153	0.7097	1.044	0.7097	8.5153	0.0000	0.0000
939.4	0.473315	0.7100	1.044	0.7100	8.5182	0.0000	0.0000
939.6	0.473478	0.7102	1.044	0.7102	8.5211	0.0000	0.0000
939.8	0.473641	0.7105	1.044	0.7105	8.5241	0.0000	0.0000
940	0.473804	0.7107	1.044	0.7107	8.5270	0.0000	0.0000
940.2	0.473967	0.7110	1.044	0.7110	8.5299	0.0000	0.0000
940.4	0.474131	0.7112	1.044	0.7112	8.5329	0.0000	0.0000
940.6	0.474294	0.7114	1.044	0.7114	8.5358	0.0000	0.0000
940.8	0.474457	0.7117	1.044	0.7117	8.5388	0.0000	0.0000
941	0.474621	0.7119	1.044	0.7119	8.5417	0.0000	0.0000
941.2	0.474784	0.7122	1.044	0.7122	8.5446	0.0000	0.0000
941.4	0.474948	0.7124	1.044	0.7124	8.5476	0.0000	0.0000
941.6	0.475111	0.7127	1.044	0.7127	8.5505	0.0000	0.0000
941.8	0.475275	0.7129	1.044	0.7129	8.5535	0.0000	0.0000
942	0.475439	0.7132	1.044	0.7132	8.5564	0.0000	0.0000
942.2	0.475603	0.7134	1.044	0.7134	8.5594	0.0000	0.0000
942.4	0.475767	0.7137	1.044	0.7137	8.5623	0.0000	0.0000
942.6	0.475931	0.7139	1.044	0.7139	8.5653	0.0000	0.0000
942.8	0.476095	0.7141	1.044	0.7141	8.5682	0.0000	0.0000
943	0.476259	0.7144	1.044	0.7144	8.5712	0.0000	0.0000
943.2	0.476423	0.7146	1.044	0.7146	8.5741	0.0000	0.0000
943.4	0.476588	0.7149	1.044	0.7149	8.5771	0.0000	0.0000
943.6	0.476752	0.7151	1.044	0.7151	8.5801	0.0000	0.0000
943.8	0.476916	0.7154	1.044	0.7154	8.5830	0.0000	0.0000
944	0.477081	0.7156	1.044	0.7156	8.5860	0.0000	0.0000
944.2	0.477245	0.7159	1.044	0.7159	8.5889	0.0000	0.0000
944.4	0.47741	0.7161	1.044	0.7161	8.5919	0.0000	0.0000
944.6	0.477575	0.7164	1.044	0.7164	8.5949	0.0000	0.0000
944.8	0.47774	0.7166	1.044	0.7166	8.5978	0.0000	0.0000
945	0.477905	0.7169	1.044	0.7169	8.6008	0.0000	0.0000
945.2	0.47807	0.7171	1.044	0.7171	8.6038	0.0000	0.0000
945.4	0.478235	0.7174	1.044	0.7174	8.6067	0.0000	0.0000
945.6	0.4784	0.7176	1.044	0.7176	8.6097	0.0000	0.0000
945.8	0.478565	0.7178	1.044	0.7178	8.6127	0.0000	0.0000
946	0.47873	0.7181	1.044	0.7181	8.6157	0.0000	0.0000
946.2	0.478896	0.7183	1.044	0.7183	8.6186	0.0000	0.0000
946.4	0.479061	0.7186	1.044	0.7186	8.6216	0.0000	0.0000
946.6	0.479227	0.7188	1.044	0.7188	8.6246	0.0000	0.0000
946.8	0.479392	0.7191	1.044	0.7191	8.6276	0.0000	0.0000
947	0.479558	0.7193	1.044	0.7193	8.6305	0.0000	0.0000
947.2	0.479724	0.7196	1.044	0.7196	8.6335	0.0000	0.0000
947.4	0.479889	0.7198	1.044	0.7198	8.6365	0.0000	0.0000
947.6	0.480055	0.7201	1.044	0.7201	8.6395	0.0000	0.0000
947.8	0.480221	0.7203	1.044	0.7203	8.6425	0.0000	0.0000

948	0.480387	0.7206	1.044	0.7206	8.6455	0.0000	0.0000
948.2	0.480553	0.7208	1.044	0.7208	8.6485	0.0000	0.0000
948.4	0.48072	0.7211	1.044	0.7211	8.6515	0.0000	0.0000
948.6	0.480886	0.7213	1.044	0.7213	8.6544	0.0000	0.0000
948.8	0.481052	0.7216	1.044	0.7216	8.6574	0.0000	0.0000
949	0.481219	0.7218	1.044	0.7218	8.6604	0.0000	0.0000
949.2	0.481385	0.7221	1.044	0.7221	8.6634	0.0000	0.0000
949.4	0.481552	0.7223	1.044	0.7223	8.6664	0.0000	0.0000
949.6	0.481718	0.7226	1.044	0.7226	8.6694	0.0000	0.0000
949.8	0.481885	0.7228	1.044	0.7228	8.6724	0.0000	0.0000
950	0.482052	0.7231	1.044	0.7231	8.6754	0.0000	0.0000
950.2	0.482219	0.7233	1.044	0.7233	8.6784	0.0000	0.0000
950.4	0.482386	0.7236	1.044	0.7236	8.6814	0.0000	0.0000
950.6	0.482553	0.7238	1.044	0.7238	8.6844	0.0000	0.0000
950.8	0.48272	0.7241	1.044	0.7241	8.6875	0.0000	0.0000
951	0.482887	0.7243	1.044	0.7243	8.6905	0.0000	0.0000
951.2	0.483054	0.7246	1.044	0.7246	8.6935	0.0000	0.0000
951.4	0.483222	0.7248	1.044	0.7248	8.6965	0.0000	0.0000
951.6	0.483389	0.7251	1.044	0.7251	8.6995	0.0000	0.0000
951.8	0.483557	0.7253	1.044	0.7253	8.7025	0.0000	0.0000
952	0.483724	0.7256	1.044	0.7256	8.7055	0.0000	0.0000
952.2	0.483892	0.7258	1.044	0.7258	8.7085	0.0000	0.0000
952.4	0.48406	0.7261	1.044	0.7261	8.7116	0.0000	0.0000
952.6	0.484227	0.7263	1.044	0.7263	8.7146	0.0000	0.0000
952.8	0.484395	0.7266	1.044	0.7266	8.7176	0.0000	0.0000
953	0.484563	0.7268	1.044	0.7268	8.7206	0.0000	0.0000
953.2	0.484731	0.7271	1.044	0.7271	8.7237	0.0000	0.0000
953.4	0.484899	0.7273	1.044	0.7273	8.7267	0.0000	0.0000
953.6	0.485068	0.7276	1.044	0.7276	8.7297	0.0000	0.0000
953.8	0.485236	0.7279	1.044	0.7279	8.7327	0.0000	0.0000
954	0.485404	0.7281	1.044	0.7281	8.7358	0.0000	0.0000
954.2	0.485573	0.7284	1.044	0.7284	8.7388	0.0000	0.0000
954.4	0.485741	0.7286	1.044	0.7286	8.7418	0.0000	0.0000
954.6	0.48591	0.7289	1.044	0.7289	8.7449	0.0000	0.0000
954.8	0.486079	0.7291	1.044	0.7291	8.7479	0.0000	0.0000
955	0.486247	0.7294	1.044	0.7294	8.7509	0.0000	0.0000
955.2	0.486416	0.7296	1.044	0.7296	8.7540	0.0000	0.0000
955.4	0.486585	0.7299	1.044	0.7299	8.7570	0.0000	0.0000
955.6	0.486754	0.7301	1.044	0.7301	8.7601	0.0000	0.0000
955.8	0.486923	0.7304	1.044	0.7304	8.7631	0.0000	0.0000
956	0.487093	0.7306	1.044	0.7306	8.7661	0.0000	0.0000
956.2	0.487262	0.7309	1.044	0.7309	8.7692	0.0000	0.0000
956.4	0.487431	0.7311	1.044	0.7311	8.7722	0.0000	0.0000
956.6	0.487601	0.7314	1.044	0.7314	8.7753	0.0000	0.0000
956.8	0.48777	0.7317	1.044	0.7317	8.7783	0.0000	0.0000
957	0.48794	0.7319	1.044	0.7319	8.7814	0.0000	0.0000
957.2	0.488109	0.7322	1.044	0.7322	8.7844	0.0000	0.0000

957.4	0.488279	0.7324	1.044	0.7324	8.7875	0.0000	0.0000
957.6	0.488449	0.7327	1.044	0.7327	8.7906	0.0000	0.0000
957.8	0.488619	0.7329	1.044	0.7329	8.7936	0.0000	0.0000
958	0.488789	0.7332	1.044	0.7332	8.7967	0.0000	0.0000
958.2	0.488959	0.7334	1.044	0.7334	8.7997	0.0000	0.0000
958.4	0.489129	0.7337	1.044	0.7337	8.8028	0.0000	0.0000
958.6	0.489299	0.7339	1.044	0.7339	8.8059	0.0000	0.0000
958.8	0.48947	0.7342	1.044	0.7342	8.8089	0.0000	0.0000
959	0.48964	0.7345	1.044	0.7345	8.8120	0.0000	0.0000
959.2	0.489811	0.7347	1.044	0.7347	8.8151	0.0000	0.0000
959.4	0.489981	0.7350	1.044	0.7350	8.8181	0.0000	0.0000
959.6	0.490152	0.7352	1.044	0.7352	8.8212	0.0000	0.0000
959.8	0.490323	0.7355	1.044	0.7355	8.8243	0.0000	0.0000
960	0.490493	0.7357	1.044	0.7357	8.8273	0.0000	0.0000
960.2	0.490664	0.7360	1.044	0.7360	8.8304	0.0000	0.0000
960.4	0.490835	0.7363	1.044	0.7363	8.8335	0.0000	0.0000
960.6	0.491006	0.7365	1.044	0.7365	8.8366	0.0000	0.0000
960.8	0.491178	0.7368	1.044	0.7368	8.8397	0.0000	0.0000
961	0.491349	0.7370	1.044	0.7370	8.8427	0.0000	0.0000
961.2	0.49152	0.7373	1.044	0.7373	8.8458	0.0000	0.0000
961.4	0.491692	0.7375	1.044	0.7375	8.8489	0.0000	0.0000
961.6	0.491863	0.7378	1.044	0.7378	8.8520	0.0000	0.0000
961.8	0.492035	0.7381	1.044	0.7381	8.8551	0.0000	0.0000
962	0.492206	0.7383	1.044	0.7383	8.8582	0.0000	0.0000
962.2	0.492378	0.7386	1.044	0.7386	8.8613	0.0000	0.0000
962.4	0.49255	0.7388	1.044	0.7388	8.8644	0.0000	0.0000
962.6	0.492722	0.7391	1.044	0.7391	8.8674	0.0000	0.0000
962.8	0.492894	0.7393	1.044	0.7393	8.8705	0.0000	0.0000
963	0.493066	0.7396	1.044	0.7396	8.8736	0.0000	0.0000
963.2	0.493238	0.7399	1.044	0.7399	8.8767	0.0000	0.0000
963.4	0.493411	0.7401	1.044	0.7401	8.8798	0.0000	0.0000
963.6	0.493583	0.7404	1.044	0.7404	8.8829	0.0000	0.0000
963.8	0.493755	0.7406	1.044	0.7406	8.8860	0.0000	0.0000
964	0.493928	0.7409	1.044	0.7409	8.8891	0.0000	0.0000
964.2	0.4941	0.7412	1.044	0.7412	8.8923	0.0000	0.0000
964.4	0.494273	0.7414	1.044	0.7414	8.8954	0.0000	0.0000
964.6	0.494446	0.7417	1.044	0.7417	8.8985	0.0000	0.0000
964.8	0.494619	0.7419	1.044	0.7419	8.9016	0.0000	0.0000
965	0.494792	0.7422	1.044	0.7422	8.9047	0.0000	0.0000
965.2	0.494965	0.7424	1.044	0.7424	8.9078	0.0000	0.0000
965.4	0.495138	0.7427	1.044	0.7427	8.9109	0.0000	0.0000
965.6	0.495311	0.7430	1.044	0.7430	8.9140	0.0000	0.0000
965.8	0.495485	0.7432	1.044	0.7432	8.9172	0.0000	0.0000
966	0.495658	0.7435	1.044	0.7435	8.9203	0.0000	0.0000
966.2	0.495831	0.7437	1.044	0.7437	8.9234	0.0000	0.0000
966.4	0.496005	0.7440	1.044	0.7440	8.9265	0.0000	0.0000
966.6	0.496179	0.7443	1.044	0.7443	8.9297	0.0000	0.0000

966.8	0.496352	0.7445	1.044	0.7445	8.9328	0.0000	0.0000
967	0.496526	0.7448	1.044	0.7448	8.9359	0.0000	0.0000
967.2	0.4967	0.7451	1.044	0.7451	8.9390	0.0000	0.0000
967.4	0.496874	0.7453	1.044	0.7453	8.9422	0.0000	0.0000
967.6	0.497048	0.7456	1.044	0.7456	8.9453	0.0000	0.0000
967.8	0.497222	0.7458	1.044	0.7458	8.9484	0.0000	0.0000
968	0.497397	0.7461	1.044	0.7461	8.9516	0.0000	0.0000
968.2	0.497571	0.7464	1.044	0.7464	8.9547	0.0000	0.0000
968.4	0.497746	0.7466	1.044	0.7466	8.9578	0.0000	0.0000
968.6	0.49792	0.7469	1.044	0.7469	8.9610	0.0000	0.0000
968.8	0.498095	0.7471	1.044	0.7471	8.9641	0.0000	0.0000
969	0.498269	0.7474	1.044	0.7474	8.9673	0.0000	0.0000
969.2	0.498444	0.7477	1.044	0.7477	8.9704	0.0000	0.0000
969.4	0.498619	0.7479	1.044	0.7479	8.9736	0.0000	0.0000
969.6	0.498794	0.7482	1.044	0.7482	8.9767	0.0000	0.0000
969.8	0.498969	0.7485	1.044	0.7485	8.9799	0.0000	0.0000
970	0.499144	0.7487	1.044	0.7487	8.9830	0.0000	0.0000
970.2	0.49932	0.7490	1.044	0.7490	8.9862	0.0000	0.0000
970.4	0.499495	0.7492	1.044	0.7492	8.9893	0.0000	0.0000
970.6	0.499671	0.7495	1.044	0.7495	8.9925	0.0000	0.0000
970.8	0.499846	0.7498	1.044	0.7498	8.9956	0.0000	0.0000
971	0.500022	0.7500	1.044	0.7500	8.9988	0.0000	0.0000
971.2	0.500197	0.7503	1.044	0.7503	9.0020	0.0000	0.0000
971.4	0.500373	0.7506	1.044	0.7506	9.0051	0.0000	0.0000
971.6	0.500549	0.7508	1.044	0.7508	9.0083	0.0000	0.0000
971.8	0.500725	0.7511	1.044	0.7511	9.0115	0.0000	0.0000
972	0.500901	0.7514	1.044	0.7514	9.0146	0.0000	0.0000
972.2	0.501077	0.7516	1.044	0.7516	9.0178	0.0000	0.0000
972.4	0.501254	0.7519	1.044	0.7519	9.0210	0.0000	0.0000
972.6	0.50143	0.7521	1.044	0.7521	9.0242	0.0000	0.0000
972.8	0.501607	0.7524	1.044	0.7524	9.0273	0.0000	0.0000
973	0.501783	0.7527	1.044	0.7527	9.0305	0.0000	0.0000
973.2	0.50196	0.7529	1.044	0.7529	9.0337	0.0000	0.0000
973.4	0.502136	0.7532	1.044	0.7532	9.0369	0.0000	0.0000
973.6	0.502313	0.7535	1.044	0.7535	9.0400	0.0000	0.0000
973.8	0.50249	0.7537	1.044	0.7537	9.0432	0.0000	0.0000
974	0.502667	0.7540	1.044	0.7540	9.0464	0.0000	0.0000
974.2	0.502844	0.7543	1.044	0.7543	9.0496	0.0000	0.0000
974.4	0.503022	0.7545	1.044	0.7545	9.0528	0.0000	0.0000
974.6	0.503199	0.7548	1.044	0.7548	9.0560	0.0000	0.0000
974.8	0.503376	0.7551	1.044	0.7551	9.0592	0.0000	0.0000
975	0.503554	0.7553	1.044	0.7553	9.0624	0.0000	0.0000
975.2	0.503731	0.7556	1.044	0.7556	9.0656	0.0000	0.0000
975.4	0.503909	0.7559	1.044	0.7559	9.0688	0.0000	0.0000
975.6	0.504087	0.7561	1.044	0.7561	9.0720	0.0000	0.0000
975.8	0.504265	0.7564	1.044	0.7564	9.0752	0.0000	0.0000
976	0.504443	0.7567	1.044	0.7567	9.0784	0.0000	0.0000

976.2	0.504621	0.7569	1.044	0.7569	9.0816	0.0000	0.0000
976.4	0.504799	0.7572	1.044	0.7572	9.0848	0.0000	0.0000
976.6	0.504977	0.7575	1.044	0.7575	9.0880	0.0000	0.0000
976.8	0.505155	0.7577	1.044	0.7577	9.0912	0.0000	0.0000
977	0.505334	0.7580	1.044	0.7580	9.0944	0.0000	0.0000
977.2	0.505512	0.7583	1.044	0.7583	9.0976	0.0000	0.0000
977.4	0.505691	0.7585	1.044	0.7585	9.1008	0.0000	0.0000
977.6	0.50587	0.7588	1.044	0.7588	9.1040	0.0000	0.0000
977.8	0.506048	0.7591	1.044	0.7591	9.1073	0.0000	0.0000
978	0.506227	0.7593	1.044	0.7593	9.1105	0.0000	0.0000
978.2	0.506406	0.7596	1.044	0.7596	9.1137	0.0000	0.0000
978.4	0.506586	0.7599	1.044	0.7599	9.1169	0.0000	0.0000
978.6	0.506765	0.7601	1.044	0.7601	9.1202	0.0000	0.0000
978.8	0.506944	0.7604	1.044	0.7604	9.1234	0.0000	0.0000
979	0.507123	0.7607	1.044	0.7607	9.1266	0.0000	0.0000
979.2	0.507303	0.7610	1.044	0.7610	9.1298	0.0000	0.0000
979.4	0.507483	0.7612	1.044	0.7612	9.1331	0.0000	0.0000
979.6	0.507662	0.7615	1.044	0.7615	9.1363	0.0000	0.0000
979.8	0.507842	0.7618	1.044	0.7618	9.1395	0.0000	0.0000
980	0.508022	0.7620	1.044	0.7620	9.1428	0.0000	0.0000
980.2	0.508202	0.7623	1.044	0.7623	9.1460	0.0000	0.0000
980.4	0.508382	0.7626	1.044	0.7626	9.1493	0.0000	0.0000
980.6	0.508562	0.7628	1.044	0.7628	9.1525	0.0000	0.0000
980.8	0.508742	0.7631	1.044	0.7631	9.1557	0.0000	0.0000
981	0.508923	0.7634	1.044	0.7634	9.1590	0.0000	0.0000
981.2	0.509103	0.7637	1.044	0.7637	9.1622	0.0000	0.0000
981.4	0.509284	0.7639	1.044	0.7639	9.1655	0.0000	0.0000
981.6	0.509465	0.7642	1.044	0.7642	9.1687	0.0000	0.0000
981.8	0.509645	0.7645	1.044	0.7645	9.1720	0.0000	0.0000
982	0.509826	0.7647	1.044	0.7647	9.1752	0.0000	0.0000
982.2	0.510007	0.7650	1.044	0.7650	9.1785	0.0000	0.0000
982.4	0.510188	0.7653	1.044	0.7653	9.1818	0.0000	0.0000
982.6	0.51037	0.7656	1.044	0.7656	9.1850	0.0000	0.0000
982.8	0.510551	0.7658	1.044	0.7658	9.1883	0.0000	0.0000
983	0.510732	0.7661	1.044	0.7661	9.1915	0.0000	0.0000
983.2	0.510914	0.7664	1.044	0.7664	9.1948	0.0000	0.0000
983.4	0.511095	0.7666	1.044	0.7666	9.1981	0.0000	0.0000
983.6	0.511277	0.7669	1.044	0.7669	9.2013	0.0000	0.0000
983.8	0.511459	0.7672	1.044	0.7672	9.2046	0.0000	0.0000
984	0.511641	0.7675	1.044	0.7675	9.2079	0.0000	0.0000
984.2	0.511823	0.7677	1.044	0.7677	9.2112	0.0000	0.0000
984.4	0.512005	0.7680	1.044	0.7680	9.2144	0.0000	0.0000
984.6	0.512187	0.7683	1.044	0.7683	9.2177	0.0000	0.0000
984.8	0.512369	0.7686	1.044	0.7686	9.2210	0.0000	0.0000
985	0.512552	0.7688	1.044	0.7688	9.2243	0.0000	0.0000
985.2	0.512734	0.7691	1.044	0.7691	9.2276	0.0000	0.0000
985.4	0.512917	0.7694	1.044	0.7694	9.2309	0.0000	0.0000

985.6	0.513099	0.7696	1.044	0.7696	9.2341	0.0000	0.0000
985.8	0.513282	0.7699	1.044	0.7699	9.2374	0.0000	0.0000
986	0.513465	0.7702	1.044	0.7702	9.2407	0.0000	0.0000
986.2	0.513648	0.7705	1.044	0.7705	9.2440	0.0000	0.0000
986.4	0.513831	0.7707	1.044	0.7707	9.2473	0.0000	0.0000
986.6	0.514015	0.7710	1.044	0.7710	9.2506	0.0000	0.0000
986.8	0.514198	0.7713	1.044	0.7713	9.2539	0.0000	0.0000
987	0.514381	0.7716	1.044	0.7716	9.2572	0.0000	0.0000
987.2	0.514565	0.7718	1.044	0.7718	9.2605	0.0000	0.0000
987.4	0.514748	0.7721	1.044	0.7721	9.2638	0.0000	0.0000
987.6	0.514932	0.7724	1.044	0.7724	9.2671	0.0000	0.0000
987.8	0.515116	0.7727	1.044	0.7727	9.2704	0.0000	0.0000
988	0.5153	0.7730	1.044	0.7730	9.2737	0.0000	0.0000
988.2	0.515484	0.7732	1.044	0.7732	9.2771	0.0000	0.0000
988.4	0.515668	0.7735	1.044	0.7735	9.2804	0.0000	0.0000
988.6	0.515853	0.7738	1.044	0.7738	9.2837	0.0000	0.0000
988.8	0.516037	0.7741	1.044	0.7741	9.2870	0.0000	0.0000
989	0.516221	0.7743	1.044	0.7743	9.2903	0.0000	0.0000
989.2	0.516406	0.7746	1.044	0.7746	9.2936	0.0000	0.0000
989.4	0.516591	0.7749	1.044	0.7749	9.2970	0.0000	0.0000
989.6	0.516776	0.7752	1.044	0.7752	9.3003	0.0000	0.0000
989.8	0.51696	0.7754	1.044	0.7754	9.3036	0.0000	0.0000
990	0.517145	0.7757	1.044	0.7757	9.3070	0.0000	0.0000
990.2	0.517331	0.7760	1.044	0.7760	9.3103	0.0000	0.0000
990.4	0.517516	0.7763	1.044	0.7763	9.3136	0.0000	0.0000
990.6	0.517701	0.7766	1.044	0.7766	9.3170	0.0000	0.0000
990.8	0.517887	0.7768	1.044	0.7768	9.3203	0.0000	0.0000
991	0.518072	0.7771	1.044	0.7771	9.3236	0.0000	0.0000
991.2	0.518258	0.7774	1.044	0.7774	9.3270	0.0000	0.0000
991.4	0.518444	0.7777	1.044	0.7777	9.3303	0.0000	0.0000
991.6	0.51863	0.7779	1.044	0.7779	9.3337	0.0000	0.0000
991.8	0.518816	0.7782	1.044	0.7782	9.3370	0.0000	0.0000
992	0.519002	0.7785	1.044	0.7785	9.3404	0.0000	0.0000
992.2	0.519188	0.7788	1.044	0.7788	9.3437	0.0000	0.0000
992.4	0.519374	0.7791	1.044	0.7791	9.3471	0.0000	0.0000
992.6	0.519561	0.7793	1.044	0.7793	9.3504	0.0000	0.0000
992.8	0.519747	0.7796	1.044	0.7796	9.3538	0.0000	0.0000
993	0.519934	0.7799	1.044	0.7799	9.3571	0.0000	0.0000
993.2	0.520121	0.7802	1.044	0.7802	9.3605	0.0000	0.0000
993.4	0.520307	0.7805	1.044	0.7805	9.3639	0.0000	0.0000
993.6	0.520494	0.7807	1.044	0.7807	9.3672	0.0000	0.0000
993.8	0.520682	0.7810	1.044	0.7810	9.3706	0.0000	0.0000
994	0.520869	0.7813	1.044	0.7813	9.3740	0.0000	0.0000
994.2	0.521056	0.7816	1.044	0.7816	9.3773	0.0000	0.0000
994.4	0.521244	0.7819	1.044	0.7819	9.3807	0.0000	0.0000
994.6	0.521431	0.7821	1.044	0.7821	9.3841	0.0000	0.0000
994.8	0.521619	0.7824	1.044	0.7824	9.3874	0.0000	0.0000

995	0.521806	0.7827	1.044	0.7827	9.3908	0.0000	0.0000
995.2	0.521994	0.7830	1.044	0.7830	9.3942	0.0000	0.0000
995.4	0.522182	0.7833	1.044	0.7833	9.3976	0.0000	0.0000
995.6	0.52237	0.7836	1.044	0.7836	9.4010	0.0000	0.0000
995.8	0.522559	0.7838	1.044	0.7838	9.4044	0.0000	0.0000
996	0.522747	0.7841	1.044	0.7841	9.4078	0.0000	0.0000
996.2	0.522935	0.7844	1.044	0.7844	9.4111	0.0000	0.0000
996.4	0.523124	0.7847	1.044	0.7847	9.4145	0.0000	0.0000
996.6	0.523313	0.7850	1.044	0.7850	9.4179	0.0000	0.0000
996.8	0.523501	0.7853	1.044	0.7853	9.4213	0.0000	0.0000
997	0.52369	0.7855	1.044	0.7855	9.4247	0.0000	0.0000
997.2	0.523879	0.7858	1.044	0.7858	9.4281	0.0000	0.0000
997.4	0.524069	0.7861	1.044	0.7861	9.4315	0.0000	0.0000
997.6	0.524258	0.7864	1.044	0.7864	9.4349	0.0000	0.0000
997.8	0.524447	0.7867	1.044	0.7867	9.4383	0.0000	0.0000
998	0.524637	0.7870	1.044	0.7870	9.4418	0.0000	0.0000
998.2	0.524826	0.7872	1.044	0.7872	9.4452	0.0000	0.0000
998.4	0.525016	0.7875	1.044	0.7875	9.4486	0.0000	0.0000
998.6	0.525206	0.7878	1.044	0.7878	9.4520	0.0000	0.0000
998.8	0.525396	0.7881	1.044	0.7881	9.4554	0.0000	0.0000
999	0.525586	0.7884	1.044	0.7884	9.4588	0.0000	0.0000
999.2	0.525776	0.7887	1.044	0.7887	9.4623	0.0000	0.0000
999.4	0.525966	0.7889	1.044	0.7889	9.4657	0.0000	0.0000
999.6	0.526157	0.7892	1.044	0.7892	9.4691	0.0000	0.0000
999.8	0.526347	0.7895	1.044	0.7895	9.4725	0.0000	0.0000
1000	0.526538	0.7898	1.044	0.7898	9.4760	0.0000	0.0000
1000.2	0.526729	0.7901	1.044	0.7901	9.4794	0.0000	0.0000
1000.4	0.526919	0.7904	1.044	0.7904	9.4828	0.0000	0.0000
1000.6	0.52711	0.7907	1.044	0.7907	9.4863	0.0000	0.0000
1000.8	0.527302	0.7910	1.044	0.7910	9.4897	0.0000	0.0000
1001	0.527493	0.7912	1.044	0.7912	9.4931	0.0000	0.0000
1001.2	0.527684	0.7915	1.044	0.7915	9.4966	0.0000	0.0000
1001.4	0.527876	0.7918	1.044	0.7918	9.5000	0.0000	0.0000
1001.6	0.528067	0.7921	1.044	0.7921	9.5035	0.0000	0.0000
1001.8	0.528259	0.7924	1.044	0.7924	9.5069	0.0000	0.0000
1002	0.528451	0.7927	1.044	0.7927	9.5104	0.0000	0.0000
1002.2	0.528643	0.7930	1.044	0.7930	9.5138	0.0000	0.0000
1002.4	0.528835	0.7933	1.044	0.7933	9.5173	0.0000	0.0000
1002.6	0.529027	0.7935	1.044	0.7935	9.5208	0.0000	0.0000
1002.8	0.529219	0.7938	1.044	0.7938	9.5242	0.0000	0.0000
1003	0.529412	0.7941	1.044	0.7941	9.5277	0.0000	0.0000
1003.2	0.529604	0.7944	1.044	0.7944	9.5311	0.0000	0.0000
1003.4	0.529797	0.7947	1.044	0.7947	9.5346	0.0000	0.0000
1003.6	0.52999	0.7950	1.044	0.7950	9.5381	0.0000	0.0000
1003.8	0.530183	0.7953	1.044	0.7953	9.5416	0.0000	0.0000
1004	0.530376	0.7956	1.044	0.7956	9.5450	0.0000	0.0000
1004.2	0.530569	0.7959	1.044	0.7959	9.5485	0.0000	0.0000

1004.4	0.530762	0.7961	1.044	0.7961	9.5520	0.0000	0.0000
1004.6	0.530956	0.7964	1.044	0.7964	9.5555	0.0000	0.0000
1004.8	0.531149	0.7967	1.044	0.7967	9.5589	0.0000	0.0000
1005	0.531343	0.7970	1.044	0.7970	9.5624	0.0000	0.0000
1005.2	0.531537	0.7973	1.044	0.7973	9.5659	0.0000	0.0000
1005.4	0.531731	0.7976	1.044	0.7976	9.5694	0.0000	0.0000
1005.6	0.531925	0.7979	1.044	0.7979	9.5729	0.0000	0.0000
1005.8	0.532119	0.7982	1.044	0.7982	9.5764	0.0000	0.0000
1006	0.532313	0.7985	1.044	0.7985	9.5799	0.0000	0.0000
1006.2	0.532507	0.7988	1.044	0.7988	9.5834	0.0000	0.0000
1006.4	0.532702	0.7991	1.044	0.7991	9.5869	0.0000	0.0000
1006.6	0.532897	0.7993	1.044	0.7993	9.5904	0.0000	0.0000
1006.8	0.533091	0.7996	1.044	0.7996	9.5939	0.0000	0.0000
1007	0.533286	0.7999	1.044	0.7999	9.5974	0.0000	0.0000
1007.2	0.533481	0.8002	1.044	0.8002	9.6009	0.0000	0.0000
1007.4	0.533677	0.8005	1.044	0.8005	9.6044	0.0000	0.0000
1007.6	0.533872	0.8008	1.044	0.8008	9.6079	0.0000	0.0000
1007.8	0.534067	0.8011	1.044	0.8011	9.6115	0.0000	0.0000
1008	0.534263	0.8014	1.044	0.8014	9.6150	0.0000	0.0000
1008.2	0.534459	0.8017	1.044	0.8017	9.6185	0.0000	0.0000
1008.4	0.534654	0.8020	1.044	0.8020	9.6220	0.0000	0.0000
1008.6	0.53485	0.8023	1.044	0.8023	9.6255	0.0000	0.0000
1008.8	0.535046	0.8026	1.044	0.8026	9.6291	0.0000	0.0000
1009	0.535242	0.8029	1.044	0.8029	9.6326	0.0000	0.0000
1009.2	0.535439	0.8032	1.044	0.8032	9.6361	0.0000	0.0000
1009.4	0.535635	0.8035	1.044	0.8035	9.6397	0.0000	0.0000
1009.6	0.535832	0.8037	1.044	0.8037	9.6432	0.0000	0.0000
1009.8	0.536029	0.8040	1.044	0.8040	9.6467	0.0000	0.0000
1010	0.536225	0.8043	1.044	0.8043	9.6503	0.0000	0.0000
1010.2	0.536422	0.8046	1.044	0.8046	9.6538	0.0000	0.0000
1010.4	0.536619	0.8049	1.044	0.8049	9.6574	0.0000	0.0000
1010.6	0.536817	0.8052	1.044	0.8052	9.6609	0.0000	0.0000
1010.8	0.537014	0.8055	1.044	0.8055	9.6645	0.0000	0.0000
1011	0.537212	0.8058	1.044	0.8058	9.6680	0.0000	0.0000
1011.2	0.537409	0.8061	1.044	0.8061	9.6716	0.0000	0.0000
1011.4	0.537607	0.8064	1.044	0.8064	9.6751	0.0000	0.0000
1011.6	0.537805	0.8067	1.044	0.8067	9.6787	0.0000	0.0000
1011.8	0.538003	0.8070	1.044	0.8070	9.6823	0.0000	0.0000
1012	0.538201	0.8073	1.044	0.8073	9.6858	0.0000	0.0000
1012.2	0.538399	0.8076	1.044	0.8076	9.6894	0.0000	0.0000
1012.4	0.538598	0.8079	1.044	0.8079	9.6930	0.0000	0.0000
1012.6	0.538796	0.8082	1.044	0.8082	9.6965	0.0000	0.0000
1012.8	0.538995	0.8085	1.044	0.8085	9.7001	0.0000	0.0000
1013	0.539194	0.8088	1.044	0.8088	9.7037	0.0000	0.0000
1013.2	0.539393	0.8091	1.044	0.8091	9.7073	0.0000	0.0000
1013.4	0.539592	0.8094	1.044	0.8094	9.7109	0.0000	0.0000
1013.6	0.539791	0.8097	1.044	0.8097	9.7144	0.0000	0.0000

1013.8	0.53999	0.8100	1.044	0.8100	9.7180	0.0000	0.0000
1014	0.54019	0.8103	1.044	0.8103	9.7216	0.0000	0.0000
1014.2	0.540389	0.8106	1.044	0.8106	9.7252	0.0000	0.0000
1014.4	0.540589	0.8109	1.044	0.8109	9.7288	0.0000	0.0000
1014.6	0.540789	0.8112	1.044	0.8112	9.7324	0.0000	0.0000
1014.8	0.540989	0.8115	1.044	0.8115	9.7360	0.0000	0.0000
1015	0.541189	0.8118	1.044	0.8118	9.7396	0.0000	0.0000
1015.2	0.54139	0.8121	1.044	0.8121	9.7432	0.0000	0.0000
1015.4	0.54159	0.8124	1.044	0.8124	9.7468	0.0000	0.0000
1015.6	0.541791	0.8127	1.044	0.8127	9.7504	0.0000	0.0000
1015.8	0.541991	0.8130	1.044	0.8130	9.7540	0.0000	0.0000
1016	0.542192	0.8133	1.044	0.8133	9.7577	0.0000	0.0000
1016.2	0.542393	0.8136	1.044	0.8136	9.7613	0.0000	0.0000
1016.4	0.542595	0.8139	1.044	0.8139	9.7649	0.0000	0.0000
1016.6	0.542796	0.8142	1.044	0.8142	9.7685	0.0000	0.0000
1016.8	0.542997	0.8145	1.044	0.8145	9.7721	0.0000	0.0000
1017	0.543199	0.8148	1.044	0.8148	9.7758	0.0000	0.0000
1017.2	0.5434	0.8151	1.044	0.8151	9.7794	0.0000	0.0000
1017.4	0.543602	0.8154	1.044	0.8154	9.7830	0.0000	0.0000
1017.6	0.543804	0.8157	1.044	0.8157	9.7867	0.0000	0.0000
1017.8	0.544006	0.8160	1.044	0.8160	9.7903	0.0000	0.0000
1018	0.544209	0.8163	1.044	0.8163	9.7939	0.0000	0.0000
1018.2	0.544411	0.8166	1.044	0.8166	9.7976	0.0000	0.0000
1018.4	0.544614	0.8169	1.044	0.8169	9.8012	0.0000	0.0000
1018.6	0.544816	0.8172	1.044	0.8172	9.8049	0.0000	0.0000
1018.8	0.545019	0.8175	1.044	0.8175	9.8085	0.0000	0.0000
1019	0.545222	0.8178	1.044	0.8178	9.8122	0.0000	0.0000
1019.2	0.545425	0.8181	1.044	0.8181	9.8158	0.0000	0.0000
1019.4	0.545629	0.8184	1.044	0.8184	9.8195	0.0000	0.0000
1019.6	0.545832	0.8187	1.044	0.8187	9.8231	0.0000	0.0000
1019.8	0.546036	0.8191	1.044	0.8191	9.8268	0.0000	0.0000
1020	0.546239	0.8194	1.044	0.8194	9.8305	0.0000	0.0000
1020.2	0.546443	0.8197	1.044	0.8197	9.8341	0.0000	0.0000
1020.4	0.546647	0.8200	1.044	0.8200	9.8378	0.0000	0.0000
1020.6	0.546851	0.8203	1.044	0.8203	9.8415	0.0000	0.0000
1020.8	0.547056	0.8206	1.044	0.8206	9.8452	0.0000	0.0000
1021	0.54726	0.8209	1.044	0.8209	9.8488	0.0000	0.0000
1021.2	0.547465	0.8212	1.044	0.8212	9.8525	0.0000	0.0000
1021.4	0.547669	0.8215	1.044	0.8215	9.8562	0.0000	0.0000
1021.6	0.547874	0.8218	1.044	0.8218	9.8599	0.0000	0.0000
1021.8	0.548079	0.8221	1.044	0.8221	9.8636	0.0000	0.0000
1022	0.548284	0.8224	1.044	0.8224	9.8673	0.0000	0.0000
1022.2	0.54849	0.8227	1.044	0.8227	9.8710	0.0000	0.0000
1022.4	0.548695	0.8230	1.044	0.8230	9.8747	0.0000	0.0000
1022.6	0.548901	0.8234	1.044	0.8234	9.8784	0.0000	0.0000
1022.8	0.549107	0.8237	1.044	0.8237	9.8821	0.0000	0.0000
1023	0.549312	0.8240	1.044	0.8240	9.8858	0.0000	0.0000

1023.2	0.549519	0.8243	1.044	0.8243	9.8895	0.0000	0.0000
1023.4	0.549725	0.8246	1.044	0.8246	9.8932	0.0000	0.0000
1023.6	0.549931	0.8249	1.044	0.8249	9.8969	0.0000	0.0000
1023.8	0.550138	0.8252	1.044	0.8252	9.9006	0.0000	0.0000
1024	0.550344	0.8255	1.044	0.8255	9.9043	0.0000	0.0000
1024.2	0.550551	0.8258	1.044	0.8258	9.9081	0.0000	0.0000
1024.4	0.550758	0.8261	1.044	0.8261	9.9118	0.0000	0.0000
1024.6	0.550965	0.8264	1.044	0.8264	9.9155	0.0000	0.0000
1024.8	0.551173	0.8268	1.044	0.8268	9.9192	0.0000	0.0000
1025	0.55138	0.8271	1.044	0.8271	9.9230	0.0000	0.0000
1025.2	0.551588	0.8274	1.044	0.8274	9.9267	0.0000	0.0000
1025.4	0.551795	0.8277	1.044	0.8277	9.9304	0.0000	0.0000
1025.6	0.552003	0.8280	1.044	0.8280	9.9342	0.0000	0.0000
1025.8	0.552211	0.8283	1.044	0.8283	9.9379	0.0000	0.0000
1026	0.552419	0.8286	1.044	0.8286	9.9417	0.0000	0.0000
1026.2	0.552628	0.8289	1.044	0.8289	9.9454	0.0000	0.0000
1026.4	0.552836	0.8293	1.044	0.8293	9.9492	0.0000	0.0000
1026.6	0.553045	0.8296	1.044	0.8296	9.9529	0.0000	0.0000
1026.8	0.553254	0.8299	1.044	0.8299	9.9567	0.0000	0.0000
1027	0.553463	0.8302	1.044	0.8302	9.9604	0.0000	0.0000
1027.2	0.553672	0.8305	1.044	0.8305	9.9642	0.0000	0.0000
1027.4	0.553881	0.8308	1.044	0.8308	9.9680	0.0000	0.0000
1027.6	0.554091	0.8311	1.044	0.8311	9.9717	0.0000	0.0000
1027.8	0.5543	0.8315	1.044	0.8315	9.9755	0.0000	0.0000
1028	0.55451	0.8318	1.044	0.8318	9.9793	0.0000	0.0000
1028.2	0.55472	0.8321	1.044	0.8321	9.9831	0.0000	0.0000
1028.4	0.55493	0.8324	1.044	0.8324	9.9869	0.0000	0.0000
1028.6	0.55514	0.8327	1.044	0.8327	9.9906	0.0000	0.0000
1028.8	0.555351	0.8330	1.044	0.8330	9.9944	0.0000	0.0000
1029	0.555561	0.8333	1.044	0.8333	9.9982	0.0000	0.0000
1029.2	0.555772	0.8337	1.044	0.8337	10.0020	0.0000	0.0000
1029.4	0.555983	0.8340	1.044	0.8340	10.0058	0.0000	0.0000
1029.6	0.556194	0.8343	1.044	0.8343	10.0096	0.0000	0.0000
1029.8	0.556405	0.8346	1.044	0.8346	10.0134	0.0000	0.0000
1030	0.556617	0.8349	1.044	0.8349	10.0172	0.0000	0.0000
1030.2	0.556828	0.8352	1.044	0.8352	10.0210	0.0000	0.0000
1030.4	0.55704	0.8356	1.044	0.8356	10.0248	0.0000	0.0000
1030.6	0.557252	0.8359	1.044	0.8359	10.0286	0.0000	0.0000
1030.8	0.557464	0.8362	1.044	0.8362	10.0324	0.0000	0.0000
1031	0.557676	0.8365	1.044	0.8365	10.0363	0.0000	0.0000
1031.2	0.557888	0.8368	1.044	0.8368	10.0401	0.0000	0.0000
1031.4	0.558101	0.8372	1.044	0.8372	10.0439	0.0000	0.0000
1031.6	0.558314	0.8375	1.044	0.8375	10.0477	0.0000	0.0000
1031.8	0.558526	0.8378	1.044	0.8378	10.0516	0.0000	0.0000
1032	0.558739	0.8381	1.044	0.8381	10.0554	0.0000	0.0000
1032.2	0.558953	0.8384	1.044	0.8384	10.0592	0.0000	0.0000
1032.4	0.559166	0.8387	1.044	0.8387	10.0631	0.0000	0.0000

1032.6	0.55938	0.8391	1.044	0.8391	10.0669	0.0000	0.0000
1032.8	0.559593	0.8394	1.044	0.8394	10.0708	0.0000	0.0000
1033	0.559807	0.8397	1.044	0.8397	10.0746	0.0000	0.0000
1033.2	0.560021	0.8400	1.044	0.8400	10.0785	0.0000	0.0000
1033.4	0.560235	0.8404	1.044	0.8404	10.0823	0.0000	0.0000
1033.6	0.56045	0.8407	1.044	0.8407	10.0862	0.0000	0.0000
1033.8	0.560664	0.8410	1.044	0.8410	10.0900	0.0000	0.0000
1034	0.560879	0.8413	1.044	0.8413	10.0939	0.0000	0.0000
1034.2	0.561094	0.8416	1.044	0.8416	10.0978	0.0000	0.0000
1034.4	0.561309	0.8420	1.044	0.8420	10.1016	0.0000	0.0000
1034.6	0.561524	0.8423	1.044	0.8423	10.1055	0.0000	0.0000
1034.8	0.56174	0.8426	1.044	0.8426	10.1094	0.0000	0.0000
1035	0.561955	0.8429	1.044	0.8429	10.1133	0.0000	0.0000
1035.2	0.562171	0.8433	1.044	0.8433	10.1171	0.0000	0.0000
1035.4	0.562387	0.8436	1.044	0.8436	10.1210	0.0000	0.0000
1035.6	0.562603	0.8439	1.044	0.8439	10.1249	0.0000	0.0000
1035.8	0.562819	0.8442	1.044	0.8442	10.1288	0.0000	0.0000
1036	0.563036	0.8446	1.044	0.8446	10.1327	0.0000	0.0000
1036.2	0.563252	0.8449	1.044	0.8449	10.1366	0.0000	0.0000
1036.4	0.563469	0.8452	1.044	0.8452	10.1405	0.0000	0.0000
1036.6	0.563686	0.8455	1.044	0.8455	10.1444	0.0000	0.0000
1036.8	0.563903	0.8459	1.044	0.8459	10.1483	0.0000	0.0000
1037	0.564121	0.8462	1.044	0.8462	10.1522	0.0000	0.0000
1037.2	0.564338	0.8465	1.044	0.8465	10.1561	0.0000	0.0000
1037.4	0.564556	0.8468	1.044	0.8468	10.1600	0.0000	0.0000
1037.6	0.564774	0.8472	1.044	0.8472	10.1640	0.0000	0.0000
1037.8	0.564992	0.8475	1.044	0.8475	10.1679	0.0000	0.0000
1038	0.56521	0.8478	1.044	0.8478	10.1718	0.0000	0.0000
1038.2	0.565428	0.8481	1.044	0.8481	10.1757	0.0000	0.0000
1038.4	0.565647	0.8485	1.044	0.8485	10.1797	0.0000	0.0000
1038.6	0.565866	0.8488	1.044	0.8488	10.1836	0.0000	0.0000
1038.8	0.566085	0.8491	1.044	0.8491	10.1876	0.0000	0.0000
1039	0.566304	0.8495	1.044	0.8495	10.1915	0.0000	0.0000
1039.2	0.566523	0.8498	1.044	0.8498	10.1954	0.0000	0.0000
1039.4	0.566743	0.8501	1.044	0.8501	10.1994	0.0000	0.0000
1039.6	0.566962	0.8504	1.044	0.8504	10.2033	0.0000	0.0000
1039.8	0.567182	0.8508	1.044	0.8508	10.2073	0.0000	0.0000
1040	0.567402	0.8511	1.044	0.8511	10.2113	0.0000	0.0000
1040.2	0.567622	0.8514	1.044	0.8514	10.2152	0.0000	0.0000
1040.4	0.567843	0.8518	1.044	0.8518	10.2192	0.0000	0.0000
1040.6	0.568063	0.8521	1.044	0.8521	10.2232	0.0000	0.0000
1040.8	0.568284	0.8524	1.044	0.8524	10.2271	0.0000	0.0000
1041	0.568505	0.8528	1.044	0.8528	10.2311	0.0000	0.0000
1041.2	0.568726	0.8531	1.044	0.8531	10.2351	0.0000	0.0000
1041.4	0.568948	0.8534	1.044	0.8534	10.2391	0.0000	0.0000
1041.6	0.569169	0.8538	1.044	0.8538	10.2431	0.0000	0.0000
1041.8	0.569391	0.8541	1.044	0.8541	10.2470	0.0000	0.0000

1042	0.569613	0.8544	1.044	0.8544	10.2510	0.0000	0.0000
1042.2	0.569835	0.8548	1.044	0.8548	10.2550	0.0000	0.0000
1042.4	0.570057	0.8551	1.044	0.8551	10.2590	0.0000	0.0000
1042.6	0.57028	0.8554	1.044	0.8554	10.2630	0.0000	0.0000
1042.8	0.570502	0.8558	1.044	0.8558	10.2670	0.0000	0.0000
1043	0.570725	0.8561	1.044	0.8561	10.2710	0.0000	0.0000
1043.2	0.570948	0.8564	1.044	0.8564	10.2751	0.0000	0.0000
1043.4	0.571172	0.8568	1.044	0.8568	10.2791	0.0000	0.0000
1043.6	0.571395	0.8571	1.044	0.8571	10.2831	0.0000	0.0000
1043.8	0.571619	0.8574	1.044	0.8574	10.2871	0.0000	0.0000
1044	0.571842	0.8578	1.044	0.8578	10.2912	0.0000	0.0000
1044.2	0.572067	0.8581	1.044	0.8581	10.2952	0.0000	0.0000
1044.4	0.572291	0.8584	1.044	0.8584	10.2992	0.0000	0.0000
1044.6	0.572515	0.8588	1.044	0.8588	10.3033	0.0000	0.0000
1044.8	0.57274	0.8591	1.044	0.8591	10.3073	0.0000	0.0000
1045	0.572965	0.8594	1.044	0.8594	10.3113	0.0000	0.0000
1045.2	0.57319	0.8598	1.044	0.8598	10.3154	0.0000	0.0000
1045.4	0.573415	0.8601	1.044	0.8601	10.3194	0.0000	0.0000
1045.6	0.57364	0.8605	1.044	0.8605	10.3235	0.0000	0.0000
1045.8	0.573866	0.8608	1.044	0.8608	10.3276	0.0000	0.0000
1046	0.574092	0.8611	1.044	0.8611	10.3316	0.0000	0.0000
1046.2	0.574318	0.8615	1.044	0.8615	10.3357	0.0000	0.0000
1046.4	0.574544	0.8618	1.044	0.8618	10.3398	0.0000	0.0000
1046.6	0.57477	0.8622	1.044	0.8622	10.3438	0.0000	0.0000
1046.8	0.574997	0.8625	1.044	0.8625	10.3479	0.0000	0.0000
1047	0.575224	0.8628	1.044	0.8628	10.3520	0.0000	0.0000
1047.2	0.575451	0.8632	1.044	0.8632	10.3561	0.0000	0.0000
1047.4	0.575678	0.8635	1.044	0.8635	10.3602	0.0000	0.0000
1047.6	0.575905	0.8639	1.044	0.8639	10.3642	0.0000	0.0000
1047.8	0.576133	0.8642	1.044	0.8642	10.3683	0.0000	0.0000
1048	0.576361	0.8645	1.044	0.8645	10.3724	0.0000	0.0000
1048.2	0.576589	0.8649	1.044	0.8649	10.3765	0.0000	0.0000
1048.4	0.576817	0.8652	1.044	0.8652	10.3807	0.0000	0.0000
1048.6	0.577046	0.8656	1.044	0.8656	10.3848	0.0000	0.0000
1048.8	0.577274	0.8659	1.044	0.8659	10.3889	0.0000	0.0000
1049	0.577503	0.8663	1.044	0.8663	10.3930	0.0000	0.0000
1049.2	0.577732	0.8666	1.044	0.8666	10.3971	0.0000	0.0000
1049.4	0.577962	0.8669	1.044	0.8669	10.4012	0.0000	0.0000
1049.6	0.578191	0.8673	1.044	0.8673	10.4054	0.0000	0.0000
1049.8	0.578421	0.8676	1.044	0.8676	10.4095	0.0000	0.0000
1050	0.578651	0.8680	1.044	0.8680	10.4136	0.0000	0.0000
1050.2	0.578881	0.8683	1.044	0.8683	10.4178	0.0000	0.0000
1050.4	0.579111	0.8687	1.044	0.8687	10.4219	0.0000	0.0000
1050.6	0.579342	0.8690	1.044	0.8690	10.4261	0.0000	0.0000
1050.8	0.579572	0.8694	1.044	0.8694	10.4302	0.0000	0.0000
1051	0.579803	0.8697	1.044	0.8697	10.4344	0.0000	0.0000
1051.2	0.580035	0.8701	1.044	0.8701	10.4385	0.0000	0.0000

1051.4	0.580266	0.8704	1.044	0.8704	10.4427	0.0000	0.0000
1051.6	0.580498	0.8707	1.044	0.8707	10.4469	0.0000	0.0000
1051.8	0.58073	0.8711	1.044	0.8711	10.4510	0.0000	0.0000
1052	0.580962	0.8714	1.044	0.8714	10.4552	0.0000	0.0000
1052.2	0.581194	0.8718	1.044	0.8718	10.4594	0.0000	0.0000
1052.4	0.581426	0.8721	1.044	0.8721	10.4636	0.0000	0.0000
1052.6	0.581659	0.8725	1.044	0.8725	10.4678	0.0000	0.0000
1052.8	0.581892	0.8728	1.044	0.8728	10.4720	0.0000	0.0000
1053	0.582125	0.8732	1.044	0.8732	10.4762	0.0000	0.0000
1053.2	0.582359	0.8735	1.044	0.8735	10.4804	0.0000	0.0000
1053.4	0.582592	0.8739	1.044	0.8739	10.4846	0.0000	0.0000
1053.6	0.582826	0.8742	1.044	0.8742	10.4888	0.0000	0.0000
1053.8	0.58306	0.8746	1.044	0.8746	10.4930	0.0000	0.0000
1054	0.583294	0.8749	1.044	0.8749	10.4972	0.0000	0.0000
1054.2	0.583529	0.8753	1.044	0.8753	10.5014	0.0000	0.0000
1054.4	0.583764	0.8756	1.044	0.8756	10.5056	0.0000	0.0000
1054.6	0.583999	0.8760	1.044	0.8760	10.5099	0.0000	0.0000
1054.8	0.584234	0.8764	1.044	0.8764	10.5141	0.0000	0.0000
1055	0.584469	0.8767	1.044	0.8767	10.5183	0.0000	0.0000
1055.2	0.584705	0.8771	1.044	0.8771	10.5226	0.0000	0.0000
1055.4	0.584941	0.8774	1.044	0.8774	10.5268	0.0000	0.0000
1055.6	0.585177	0.8778	1.044	0.8778	10.5311	0.0000	0.0000
1055.8	0.585413	0.8781	1.044	0.8781	10.5353	0.0000	0.0000
1056	0.58565	0.8785	1.044	0.8785	10.5396	0.0000	0.0000
1056.2	0.585887	0.8788	1.044	0.8788	10.5438	0.0000	0.0000
1056.4	0.586124	0.8792	1.044	0.8792	10.5481	0.0000	0.0000
1056.6	0.586361	0.8795	1.044	0.8795	10.5524	0.0000	0.0000
1056.8	0.586598	0.8799	1.044	0.8799	10.5566	0.0000	0.0000
1057	0.586836	0.8803	1.044	0.8803	10.5609	0.0000	0.0000
1057.2	0.587074	0.8806	1.044	0.8806	10.5652	0.0000	0.0000
1057.4	0.587312	0.8810	1.044	0.8810	10.5695	0.0000	0.0000
1057.6	0.587551	0.8813	1.044	0.8813	10.5738	0.0000	0.0000
1057.8	0.587789	0.8817	1.044	0.8817	10.5781	0.0000	0.0000
1058	0.588028	0.8820	1.044	0.8820	10.5824	0.0000	0.0000
1058.2	0.588267	0.8824	1.044	0.8824	10.5867	0.0000	0.0000
1058.4	0.588507	0.8828	1.044	0.8828	10.5910	0.0000	0.0000
1058.6	0.588746	0.8831	1.044	0.8831	10.5953	0.0000	0.0000
1058.8	0.588986	0.8835	1.044	0.8835	10.5996	0.0000	0.0000
1059	0.589226	0.8838	1.044	0.8838	10.6039	0.0000	0.0000
1059.2	0.589467	0.8842	1.044	0.8842	10.6082	0.0000	0.0000
1059.4	0.589707	0.8846	1.044	0.8846	10.6126	0.0000	0.0000
1059.6	0.589948	0.8849	1.044	0.8849	10.6169	0.0000	0.0000
1059.8	0.590189	0.8853	1.044	0.8853	10.6212	0.0000	0.0000
1060	0.590431	0.8856	1.044	0.8856	10.6256	0.0000	0.0000
1060.2	0.590672	0.8860	1.044	0.8860	10.6299	0.0000	0.0000
1060.4	0.590914	0.8864	1.044	0.8864	10.6343	0.0000	0.0000
1060.6	0.591156	0.8867	1.044	0.8867	10.6386	0.0000	0.0000

1060.8	0.591398	0.8871	1.044	0.8871	10.6430	0.0000	0.0000
1061	0.591641	0.8875	1.044	0.8875	10.6474	0.0000	0.0000
1061.2	0.591884	0.8878	1.044	0.8878	10.6517	0.0000	0.0000
1061.4	0.592127	0.8882	1.044	0.8882	10.6561	0.0000	0.0000
1061.6	0.59237	0.8886	1.044	0.8886	10.6605	0.0000	0.0000
1061.8	0.592614	0.8889	1.044	0.8889	10.6649	0.0000	0.0000
1062	0.592858	0.8893	1.044	0.8893	10.6692	0.0000	0.0000
1062.2	0.593102	0.8897	1.044	0.8897	10.6736	0.0000	0.0000
1062.4	0.593346	0.8900	1.044	0.8900	10.6780	0.0000	0.0000
1062.6	0.593591	0.8904	1.044	0.8904	10.6824	0.0000	0.0000
1062.8	0.593836	0.8908	1.044	0.8908	10.6868	0.0000	0.0000
1063	0.594081	0.8911	1.044	0.8911	10.6912	0.0000	0.0000
1063.2	0.594326	0.8915	1.044	0.8915	10.6957	0.0000	0.0000
1063.4	0.594572	0.8919	1.044	0.8919	10.7001	0.0000	0.0000
1063.6	0.594818	0.8922	1.044	0.8922	10.7045	0.0000	0.0000
1063.8	0.595064	0.8926	1.044	0.8926	10.7089	0.0000	0.0000
1064	0.59531	0.8930	1.044	0.8930	10.7134	0.0000	0.0000
1064.2	0.595557	0.8933	1.044	0.8933	10.7178	0.0000	0.0000
1064.4	0.595804	0.8937	1.044	0.8937	10.7222	0.0000	0.0000
1064.6	0.596051	0.8941	1.044	0.8941	10.7267	0.0000	0.0000
1064.8	0.596299	0.8944	1.044	0.8944	10.7311	0.0000	0.0000
1065	0.596546	0.8948	1.044	0.8948	10.7356	0.0000	0.0000
1065.2	0.596794	0.8952	1.044	0.8952	10.7401	0.0000	0.0000
1065.4	0.597043	0.8956	1.044	0.8956	10.7445	0.0000	0.0000
1065.6	0.597291	0.8959	1.044	0.8959	10.7490	0.0000	0.0000
1065.8	0.59754	0.8963	1.044	0.8963	10.7535	0.0000	0.0000
1066	0.597789	0.8967	1.044	0.8967	10.7580	0.0000	0.0000
1066.2	0.598039	0.8971	1.044	0.8971	10.7624	0.0000	0.0000
1066.4	0.598288	0.8974	1.044	0.8974	10.7669	0.0000	0.0000
1066.6	0.598538	0.8978	1.044	0.8978	10.7714	0.0000	0.0000
1066.8	0.598788	0.8982	1.044	0.8982	10.7759	0.0000	0.0000
1067	0.599039	0.8986	1.044	0.8986	10.7804	0.0000	0.0000
1067.2	0.59929	0.8989	1.044	0.8989	10.7850	0.0000	0.0000
1067.4	0.599541	0.8993	1.044	0.8993	10.7895	0.0000	0.0000
1067.6	0.599792	0.8997	1.044	0.8997	10.7940	0.0000	0.0000
1067.8	0.600043	0.9001	1.044	0.9001	10.7985	0.0000	0.0000
1068	0.600295	0.9004	1.044	0.9004	10.8030	0.0000	0.0000
1068.2	0.600547	0.9008	1.044	0.9008	10.8076	0.0000	0.0000
1068.4	0.6008	0.9012	1.044	0.9012	10.8121	0.0000	0.0000
1068.6	0.601053	0.9016	1.044	0.9016	10.8167	0.0000	0.0000
1068.8	0.601306	0.9020	1.044	0.9020	10.8212	0.0000	0.0000
1069	0.601559	0.9023	1.044	0.9023	10.8258	0.0000	0.0000
1069.2	0.601813	0.9027	1.044	0.9027	10.8303	0.0000	0.0000
1069.4	0.602066	0.9031	1.044	0.9031	10.8349	0.0000	0.0000
1069.6	0.602321	0.9035	1.044	0.9035	10.8395	0.0000	0.0000
1069.8	0.602575	0.9039	1.044	0.9039	10.8441	0.0000	0.0000
1070	0.60283	0.9042	1.044	0.9042	10.8486	0.0000	0.0000

1070.2	0.603085	0.9046	1.044	0.9046	10.8532	0.0000	0.0000
1070.4	0.60334	0.9050	1.044	0.9050	10.8578	0.0000	0.0000
1070.6	0.603596	0.9054	1.044	0.9054	10.8624	0.0000	0.0000
1070.8	0.603852	0.9058	1.044	0.9058	10.8670	0.0000	0.0000
1071	0.604108	0.9062	1.044	0.9062	10.8716	0.0000	0.0000
1071.2	0.604364	0.9065	1.044	0.9065	10.8762	0.0000	0.0000
1071.4	0.604621	0.9069	1.044	0.9069	10.8809	0.0000	0.0000
1071.6	0.604878	0.9073	1.044	0.9073	10.8855	0.0000	0.0000
1071.8	0.605136	0.9077	1.044	0.9077	10.8901	0.0000	0.0000
1072	0.605393	0.9081	1.044	0.9081	10.8948	0.0000	0.0000
1072.2	0.605651	0.9085	1.044	0.9085	10.8994	0.0000	0.0000
1072.4	0.60591	0.9089	1.044	0.9089	10.9040	0.0000	0.0000
1072.6	0.606168	0.9093	1.044	0.9093	10.9087	0.0000	0.0000
1072.8	0.606427	0.9096	1.044	0.9096	10.9134	0.0000	0.0000
1073	0.606686	0.9100	1.044	0.9100	10.9180	0.0000	0.0000
1073.2	0.606946	0.9104	1.044	0.9104	10.9227	0.0000	0.0000
1073.4	0.607206	0.9108	1.044	0.9108	10.9274	0.0000	0.0000
1073.6	0.607466	0.9112	1.044	0.9112	10.9320	0.0000	0.0000
1073.8	0.607726	0.9116	1.044	0.9116	10.9367	0.0000	0.0000
1074	0.607987	0.9120	1.044	0.9120	10.9414	0.0000	0.0000
1074.2	0.608248	0.9124	1.044	0.9124	10.9461	0.0000	0.0000
1074.4	0.60851	0.9128	1.044	0.9128	10.9508	0.0000	0.0000
1074.6	0.608771	0.9132	1.044	0.9132	10.9555	0.0000	0.0000
1074.8	0.609033	0.9136	1.044	0.9136	10.9602	0.0000	0.0000
1075	0.609296	0.9139	1.044	0.9139	10.9650	0.0000	0.0000
1075.2	0.609558	0.9143	1.044	0.9143	10.9697	0.0000	0.0000
1075.4	0.609821	0.9147	1.044	0.9147	10.9744	0.0000	0.0000
1075.6	0.610085	0.9151	1.044	0.9151	10.9792	0.0000	0.0000
1075.8	0.610348	0.9155	1.044	0.9155	10.9839	0.0000	0.0000
1076	0.610612	0.9159	1.044	0.9159	10.9886	0.0000	0.0000
1076.2	0.610877	0.9163	1.044	0.9163	10.9934	0.0000	0.0000
1076.4	0.611141	0.9167	1.044	0.9167	10.9982	0.0000	0.0000
1076.6	0.611406	0.9171	1.044	0.9171	11.0029	0.0000	0.0000
1076.8	0.611672	0.9175	1.044	0.9175	11.0077	0.0000	0.0000
1077	0.611937	0.9179	1.044	0.9179	11.0125	0.0000	0.0000
1077.2	0.612203	0.9183	1.044	0.9183	11.0173	0.0000	0.0000
1077.4	0.61247	0.9187	1.044	0.9187	11.0221	0.0000	0.0000
1077.6	0.612736	0.9191	1.044	0.9191	11.0269	0.0000	0.0000
1077.8	0.613003	0.9195	1.044	0.9195	11.0317	0.0000	0.0000
1078	0.61327	0.9199	1.044	0.9199	11.0365	0.0000	0.0000
1078.2	0.613538	0.9203	1.044	0.9203	11.0413	0.0000	0.0000
1078.4	0.613806	0.9207	1.044	0.9207	11.0461	0.0000	0.0000
1078.6	0.614074	0.9211	1.044	0.9211	11.0509	0.0000	0.0000
1078.8	0.614343	0.9215	1.044	0.9215	11.0558	0.0000	0.0000
1079	0.614612	0.9219	1.044	0.9219	11.0606	0.0000	0.0000
1079.2	0.614882	0.9223	1.044	0.9223	11.0654	0.0000	0.0000
1079.4	0.615151	0.9227	1.044	0.9227	11.0703	0.0000	0.0000

1079.6	0.615421	0.9231	1.044	0.9231	11.0752	0.0000	0.0000
1079.8	0.615692	0.9235	1.044	0.9235	11.0800	0.0000	0.0000
1080	0.615962	0.9239	1.044	0.9239	11.0849	0.0000	0.0000
1080.2	0.616234	0.9244	1.044	0.9244	11.0898	0.0000	0.0000
1080.4	0.616505	0.9248	1.044	0.9248	11.0946	0.0000	0.0000
1080.6	0.616777	0.9252	1.044	0.9252	11.0995	0.0000	0.0000
1080.8	0.617049	0.9256	1.044	0.9256	11.1044	0.0000	0.0000
1081	0.617322	0.9260	1.044	0.9260	11.1093	0.0000	0.0000
1081.2	0.617595	0.9264	1.044	0.9264	11.1142	0.0000	0.0000
1081.4	0.617868	0.9268	1.044	0.9268	11.1192	0.0000	0.0000
1081.6	0.618141	0.9272	1.044	0.9272	11.1241	0.0000	0.0000
1081.8	0.618415	0.9276	1.044	0.9276	11.1290	0.0000	0.0000
1082	0.61869	0.9280	1.044	0.9280	11.1339	0.0000	0.0000
1082.2	0.618965	0.9284	1.044	0.9284	11.1389	0.0000	0.0000
1082.4	0.61924	0.9289	1.044	0.9289	11.1438	0.0000	0.0000
1082.6	0.619515	0.9293	1.044	0.9293	11.1488	0.0000	0.0000
1082.8	0.619791	0.9297	1.044	0.9297	11.1538	0.0000	0.0000
1083	0.620067	0.9301	1.044	0.9301	11.1587	0.0000	0.0000
1083.2	0.620344	0.9305	1.044	0.9305	11.1637	0.0000	0.0000
1083.4	0.620621	0.9309	1.044	0.9309	11.1687	0.0000	0.0000
1083.6	0.620898	0.9313	1.044	0.9313	11.1737	0.0000	0.0000
1083.8	0.621176	0.9318	1.044	0.9318	11.1787	0.0000	0.0000
1084	0.621454	0.9322	1.044	0.9322	11.1837	0.0000	0.0000
1084.2	0.621733	0.9326	1.044	0.9326	11.1887	0.0000	0.0000
1084.4	0.622012	0.9330	1.044	0.9330	11.1937	0.0000	0.0000
1084.6	0.622291	0.9334	1.044	0.9334	11.1987	0.0000	0.0000
1084.8	0.62257	0.9339	1.044	0.9339	11.2038	0.0000	0.0000
1085	0.622851	0.9343	1.044	0.9343	11.2088	0.0000	0.0000
1085.2	0.623131	0.9347	1.044	0.9347	11.2138	0.0000	0.0000
1085.4	0.623412	0.9351	1.044	0.9351	11.2189	0.0000	0.0000
1085.6	0.623693	0.9355	1.044	0.9355	11.2239	0.0000	0.0000
1085.8	0.623975	0.9360	1.044	0.9360	11.2290	0.0000	0.0000
1086	0.624257	0.9364	1.044	0.9364	11.2341	0.0000	0.0000
1086.2	0.624539	0.9368	1.044	0.9368	11.2392	0.0000	0.0000
1086.4	0.624822	0.9372	1.044	0.9372	11.2443	0.0000	0.0000
1086.6	0.625105	0.9377	1.044	0.9377	11.2493	0.0000	0.0000
1086.8	0.625389	0.9381	1.044	0.9381	11.2545	0.0000	0.0000
1087	0.625673	0.9385	1.044	0.9385	11.2596	0.0000	0.0000
1087.2	0.625958	0.9389	1.044	0.9389	11.2647	0.0000	0.0000
1087.4	0.626243	0.9394	1.044	0.9394	11.2698	0.0000	0.0000
1087.6	0.626528	0.9398	1.044	0.9398	11.2749	0.0000	0.0000
1087.8	0.626814	0.9402	1.044	0.9402	11.2801	0.0000	0.0000
1088	0.6271	0.9406	1.044	0.9406	11.2852	0.0000	0.0000
1088.2	0.627386	0.9411	1.044	0.9411	11.2904	0.0000	0.0000
1088.4	0.627673	0.9415	1.044	0.9415	11.2955	0.0000	0.0000
1088.6	0.627961	0.9419	1.044	0.9419	11.3007	0.0000	0.0000
1088.8	0.628249	0.9424	1.044	0.9424	11.3059	0.0000	0.0000

1089	0.628537	0.9428	1.044	0.9428	11.3111	0.0000	0.0000
1089.2	0.628826	0.9432	1.044	0.9432	11.3163	0.0000	0.0000
1089.4	0.629115	0.9437	1.044	0.9437	11.3215	0.0000	0.0000
1089.6	0.629404	0.9441	1.044	0.9441	11.3267	0.0000	0.0000
1089.8	0.629694	0.9445	1.044	0.9445	11.3319	0.0000	0.0000
1090	0.629985	0.9450	1.044	0.9450	11.3371	0.0000	0.0000
1090.2	0.630276	0.9454	1.044	0.9454	11.3423	0.0000	0.0000
1090.4	0.630567	0.9459	1.044	0.9459	11.3476	0.0000	0.0000
1090.6	0.630859	0.9463	1.044	0.9463	11.3528	0.0000	0.0000
1090.8	0.631151	0.9467	1.044	0.9467	11.3581	0.0000	0.0000
1091	0.631444	0.9472	1.044	0.9472	11.3634	0.0000	0.0000
1091.2	0.631737	0.9476	1.044	0.9476	11.3686	0.0000	0.0000
1091.4	0.63203	0.9480	1.044	0.9480	11.3739	0.0000	0.0000
1091.6	0.632324	0.9485	1.044	0.9485	11.3792	0.0000	0.0000
1091.8	0.632619	0.9489	1.044	0.9489	11.3845	0.0000	0.0000
1092	0.632914	0.9494	1.044	0.9494	11.3898	0.0000	0.0000
1092.2	0.633209	0.9498	1.044	0.9498	11.3951	0.0000	0.0000
1092.4	0.633505	0.9503	1.044	0.9503	11.4004	0.0000	0.0000
1092.6	0.633802	0.9507	1.044	0.9507	11.4058	0.0000	0.0000
1092.8	0.634098	0.9511	1.044	0.9511	11.4111	0.0000	0.0000
1093	0.634396	0.9516	1.044	0.9516	11.4164	0.0000	0.0000
1093.2	0.634693	0.9520	1.044	0.9520	11.4218	0.0000	0.0000
1093.4	0.634992	0.9525	1.044	0.9525	11.4272	0.0000	0.0000
1093.6	0.63529	0.9529	1.044	0.9529	11.4325	0.0000	0.0000
1093.8	0.63559	0.9534	1.044	0.9534	11.4379	0.0000	0.0000
1094	0.635889	0.9538	1.044	0.9538	11.4433	0.0000	0.0000
1094.2	0.636189	0.9543	1.044	0.9543	11.4487	0.0000	0.0000
1094.4	0.63649	0.9547	1.044	0.9547	11.4541	0.0000	0.0000
1094.6	0.636791	0.9552	1.044	0.9552	11.4595	0.0000	0.0000
1094.8	0.637093	0.9556	1.044	0.9556	11.4650	0.0000	0.0000
1095	0.637395	0.9561	1.044	0.9561	11.4704	0.0000	0.0000
1095.2	0.637698	0.9565	1.044	0.9565	11.4758	0.0000	0.0000
1095.4	0.638001	0.9570	1.044	0.9570	11.4813	0.0000	0.0000
1095.6	0.638304	0.9575	1.044	0.9575	11.4867	0.0000	0.0000
1095.8	0.638609	0.9579	1.044	0.9579	11.4922	0.0000	0.0000
1096	0.638913	0.9584	1.044	0.9584	11.4977	0.0000	0.0000
1096.2	0.639218	0.9588	1.044	0.9588	11.5032	0.0000	0.0000
1096.4	0.639524	0.9593	1.044	0.9593	11.5087	0.0000	0.0000
1096.6	0.63983	0.9597	1.044	0.9597	11.5142	0.0000	0.0000
1096.8	0.640137	0.9602	1.044	0.9602	11.5197	0.0000	0.0000
1097	0.640444	0.9607	1.044	0.9607	11.5252	0.0000	0.0000
1097.2	0.640752	0.9611	1.044	0.9611	11.5308	0.0000	0.0000
1097.4	0.64106	0.9616	1.044	0.9616	11.5363	0.0000	0.0000
1097.6	0.641369	0.9621	1.044	0.9621	11.5419	0.0000	0.0000
1097.8	0.641679	0.9625	1.044	0.9625	11.5474	0.0000	0.0000
1098	0.641988	0.9630	1.044	0.9630	11.5530	0.0000	0.0000
1098.2	0.642299	0.9634	1.044	0.9634	11.5586	0.0000	0.0000

1098.4	0.64261	0.9639	1.044	0.9639	11.5642	0.0000	0.0000
1098.6	0.642921	0.9644	1.044	0.9644	11.5698	0.0000	0.0000
1098.8	0.643233	0.9649	1.044	0.9649	11.5754	0.0000	0.0000
1099	0.643546	0.9653	1.044	0.9653	11.5810	0.0000	0.0000
1099.2	0.643859	0.9658	1.044	0.9658	11.5866	0.0000	0.0000
1099.4	0.644173	0.9663	1.044	0.9663	11.5923	0.0000	0.0000
1099.6	0.644487	0.9667	1.044	0.9667	11.5979	0.0000	0.0000
1099.8	0.644802	0.9672	1.044	0.9672	11.6036	0.0000	0.0000
1100	0.645118	0.9677	1.044	0.9677	11.6093	0.0000	0.0000
1100.2	0.645434	0.9682	1.044	0.9682	11.6150	0.0000	0.0000
1100.4	0.64575	0.9686	1.044	0.9686	11.6207	0.0000	0.0000
1100.6	0.646067	0.9691	1.044	0.9691	11.6264	0.0000	0.0000
1100.8	0.646385	0.9696	1.044	0.9696	11.6321	0.0000	0.0000
1101	0.646703	0.9701	1.044	0.9701	11.6378	0.0000	0.0000
1101.2	0.647022	0.9705	1.044	0.9705	11.6435	0.0000	0.0000
1101.4	0.647342	0.9710	1.044	0.9710	11.6493	0.0000	0.0000
1101.6	0.647662	0.9715	1.044	0.9715	11.6550	0.0000	0.0000
1101.8	0.647983	0.9720	1.044	0.9720	11.6608	0.0000	0.0000
1102	0.648304	0.9725	1.044	0.9725	11.6666	0.0000	0.0000
1102.2	0.648626	0.9729	1.044	0.9729	11.6724	0.0000	0.0000
1102.4	0.648948	0.9734	1.044	0.9734	11.6782	0.0000	0.0000
1102.6	0.649271	0.9739	1.044	0.9739	11.6840	0.0000	0.0000
1102.8	0.649595	0.9744	1.044	0.9744	11.6898	0.0000	0.0000
1103	0.64992	0.9749	1.044	0.9749	11.6956	0.0000	0.0000
1103.2	0.650245	0.9754	1.044	0.9754	11.7015	0.0000	0.0000
1103.4	0.65057	0.9759	1.044	0.9759	11.7073	0.0000	0.0000
1103.6	0.650896	0.9763	1.044	0.9763	11.7132	0.0000	0.0000
1103.8	0.651223	0.9768	1.044	0.9768	11.7191	0.0000	0.0000
1104	0.651551	0.9773	1.044	0.9773	11.7250	0.0000	0.0000
1104.2	0.651879	0.9778	1.044	0.9778	11.7309	0.0000	0.0000
1104.4	0.652208	0.9783	1.044	0.9783	11.7368	0.0000	0.0000
1104.6	0.652537	0.9788	1.044	0.9788	11.7427	0.0000	0.0000
1104.8	0.652867	0.9793	1.044	0.9793	11.7486	0.0000	0.0000
1105	0.653198	0.9798	1.044	0.9798	11.7546	0.0000	0.0000
1105.2	0.653529	0.9803	1.044	0.9803	11.7605	0.0000	0.0000
1105.4	0.653861	0.9808	1.044	0.9808	11.7665	0.0000	0.0000
1105.6	0.654194	0.9813	1.044	0.9813	11.7725	0.0000	0.0000
1105.8	0.654528	0.9818	1.044	0.9818	11.7785	0.0000	0.0000
1106	0.654862	0.9823	1.044	0.9823	11.7845	0.0000	0.0000
1106.2	0.655197	0.9828	1.044	0.9828	11.7905	0.0000	0.0000
1106.4	0.655532	0.9833	1.044	0.9833	11.7966	0.0000	0.0000
1106.6	0.655868	0.9838	1.044	0.9838	11.8026	0.0000	0.0000
1106.8	0.656205	0.9843	1.044	0.9843	11.8087	0.0000	0.0000
1107	0.656543	0.9848	1.044	0.9848	11.8147	0.0000	0.0000
1107.2	0.656881	0.9853	1.044	0.9853	11.8208	0.0000	0.0000
1107.4	0.65722	0.9858	1.044	0.9858	11.8269	0.0000	0.0000
1107.6	0.65756	0.9863	1.044	0.9863	11.8330	0.0000	0.0000

1107.8	0.6579	0.9869	1.044	0.9869	11.8391	0.0000	0.0000
1108	0.658241	0.9874	1.044	0.9874	11.8453	0.0000	0.0000
1108.2	0.658583	0.9879	1.044	0.9879	11.8514	0.0000	0.0000
1108.4	0.658926	0.9884	1.044	0.9884	11.8576	0.0000	0.0000
1108.6	0.659269	0.9889	1.044	0.9889	11.8638	0.0000	0.0000
1108.8	0.659613	0.9894	1.044	0.9894	11.8699	0.0000	0.0000
1109	0.659958	0.9899	1.044	0.9899	11.8761	0.0000	0.0000
1109.2	0.660304	0.9905	1.044	0.9905	11.8824	0.0000	0.0000
1109.4	0.66065	0.9910	1.044	0.9910	11.8886	0.0000	0.0000
1109.6	0.660997	0.9915	1.044	0.9915	11.8948	0.0000	0.0000
1109.8	0.661345	0.9920	1.044	0.9920	11.9011	0.0000	0.0000
1110	0.661694	0.9925	1.044	0.9925	11.9073	0.0000	0.0000
1110.2	0.662043	0.9931	1.044	0.9931	11.9136	0.0000	0.0000
1110.4	0.662393	0.9936	1.044	0.9936	11.9199	0.0000	0.0000
1110.6	0.662744	0.9941	1.044	0.9941	11.9262	0.0000	0.0000
1110.8	0.663096	0.9946	1.044	0.9946	11.9326	0.0000	0.0000
1111	0.663449	0.9952	1.044	0.9952	11.9389	0.0000	0.0000
1111.2	0.663802	0.9957	1.044	0.9957	11.9453	0.0000	0.0000
1111.4	0.664156	0.9962	1.044	0.9962	11.9516	0.0000	0.0000
1111.6	0.664512	0.9968	1.044	0.9968	11.9580	0.0000	0.0000
1111.8	0.664867	0.9973	1.044	0.9973	11.9644	0.0000	0.0000
1112	0.665224	0.9978	1.044	0.9978	11.9708	0.0000	0.0000
1112.2	0.665582	0.9984	1.044	0.9984	11.9773	0.0000	0.0000
1112.4	0.66594	0.9989	1.044	0.9989	11.9837	0.0000	0.0000
1112.6	0.666299	0.9994	1.044	0.9994	11.9902	0.0000	0.0000
1112.8	0.66666	1.0000	1.044	1.0000	11.9966	0.0000	0.0000
1113	0.667021	1.0005	1.044	1.0005	12.0031	0.0000	0.0000
1113.2	0.667382	1.0011	1.044	1.0011	12.0096	0.0000	0.0000
1113.4	0.667745	1.0016	1.044	1.0016	12.0161	0.0000	0.0000
1113.6	0.668109	1.0022	1.044	1.0022	12.0227	0.0000	0.0000
1113.8	0.668473	1.0027	1.044	1.0027	12.0292	0.0000	0.0000
1114	0.668839	1.0033	1.044	1.0033	12.0358	0.0000	0.0000
1114.2	0.669205	1.0038	1.044	1.0038	12.0424	0.0000	0.0000
1114.4	0.669572	1.0044	1.044	1.0044	12.0490	0.0000	0.0000
1114.6	0.66994	1.0049	1.044	1.0049	12.0556	0.0000	0.0000
1114.8	0.67031	1.0055	1.044	1.0055	12.0623	0.0000	0.0000
1115	0.67068	1.0060	1.044	1.0060	12.0689	0.0000	0.0000
1115.2	0.671051	1.0066	1.044	1.0066	12.0756	0.0000	0.0000
1115.4	0.671422	1.0071	1.044	1.0071	12.0823	0.0000	0.0000
1115.6	0.671795	1.0077	1.044	1.0077	12.0890	0.0000	0.0000
1115.8	0.672169	1.0083	1.044	1.0083	12.0957	0.0000	0.0000
1116	0.672544	1.0088	1.044	1.0088	12.1024	0.0000	0.0000
1116.2	0.67292	1.0094	1.044	1.0094	12.1092	0.0000	0.0000
1116.4	0.673296	1.0099	1.044	1.0099	12.1159	0.0000	0.0000
1116.6	0.673674	1.0105	1.044	1.0105	12.1227	0.0000	0.0000
1116.8	0.674053	1.0111	1.044	1.0111	12.1295	0.0000	0.0000
1117	0.674433	1.0116	1.044	1.0116	12.1364	0.0000	0.0000

1117.2	0.674814	1.0122	1.044	1.0122	12.1432	0.0000	0.0000
1117.4	0.675195	1.0128	1.044	1.0128	12.1501	0.0000	0.0000
1117.6	0.675578	1.0134	1.044	1.0134	12.1570	0.0000	0.0000
1117.8	0.675962	1.0139	1.044	1.0139	12.1639	0.0000	0.0000
1118	0.676347	1.0145	1.044	1.0145	12.1708	0.0000	0.0000
1118.2	0.676733	1.0151	1.044	1.0151	12.1777	0.0000	0.0000
1118.4	0.67712	1.0157	1.044	1.0157	12.1847	0.0000	0.0000
1118.6	0.677509	1.0163	1.044	1.0163	12.1917	0.0000	0.0000
1118.8	0.677898	1.0168	1.044	1.0168	12.1987	0.0000	0.0000
1119	0.678288	1.0174	1.044	1.0174	12.2057	0.0000	0.0000
1119.2	0.67868	1.0180	1.044	1.0180	12.2127	0.0000	0.0000
1119.4	0.679072	1.0186	1.044	1.0186	12.2198	0.0000	0.0000
1119.6	0.679466	1.0192	1.044	1.0192	12.2268	0.0000	0.0000
1119.8	0.679861	1.0198	1.044	1.0198	12.2339	0.0000	0.0000
1120	0.680257	1.0204	1.044	1.0204	12.2411	0.0000	0.0000
1120.2	0.680654	1.0210	1.044	1.0210	12.2482	0.0000	0.0000
1120.4	0.681053	1.0216	1.044	1.0216	12.2554	0.0000	0.0000
1120.6	0.681452	1.0222	1.044	1.0222	12.2625	0.0000	0.0000
1120.8	0.681853	1.0228	1.044	1.0228	12.2697	0.0000	0.0000
1121	0.682255	1.0234	1.044	1.0234	12.2770	0.0000	0.0000
1121.2	0.682658	1.0240	1.044	1.0240	12.2842	0.0000	0.0000
1121.4	0.683063	1.0246	1.044	1.0246	12.2915	0.0000	0.0000
1121.6	0.683469	1.0252	1.044	1.0252	12.2988	0.0000	0.0000
1121.8	0.683876	1.0258	1.044	1.0258	12.3061	0.0000	0.0000
1122	0.684284	1.0264	1.044	1.0264	12.3134	0.0000	0.0000
1122.2	0.684693	1.0270	1.044	1.0270	12.3208	0.0000	0.0000
1122.4	0.685104	1.0277	1.044	1.0277	12.3282	0.0000	0.0000
1122.6	0.685516	1.0283	1.044	1.0283	12.3356	0.0000	0.0000
1122.8	0.68593	1.0289	1.044	1.0289	12.3430	0.0000	0.0000
1123	0.686344	1.0295	1.044	1.0295	12.3505	0.0000	0.0000
1123.2	0.68676	1.0301	1.044	1.0301	12.3579	0.0000	0.0000
1123.4	0.687178	1.0308	1.044	1.0308	12.3654	0.0000	0.0000
1123.6	0.687597	1.0314	1.044	1.0314	12.3730	0.0000	0.0000
1123.8	0.688017	1.0320	1.044	1.0320	12.3805	0.0000	0.0000
1124	0.688439	1.0327	1.044	1.0327	12.3881	0.0000	0.0000
1124.2	0.688862	1.0333	1.044	1.0333	12.3957	0.0000	0.0000
1124.4	0.689286	1.0339	1.044	1.0339	12.4033	0.0000	0.0000
1124.6	0.689712	1.0346	1.044	1.0346	12.4110	0.0000	0.0000
1124.8	0.690139	1.0352	1.044	1.0352	12.4187	0.0000	0.0000
1125	0.690568	1.0359	1.044	1.0359	12.4264	0.0000	0.0000
1125.2	0.690999	1.0365	1.044	1.0365	12.4341	0.0000	0.0000
1125.4	0.691431	1.0371	1.044	1.0371	12.4419	0.0000	0.0000
1125.6	0.691864	1.0378	1.044	1.0378	12.4497	0.0000	0.0000
1125.8	0.692299	1.0384	1.044	1.0384	12.4575	0.0000	0.0000
1126	0.692735	1.0391	1.044	1.0391	12.4653	0.0000	0.0000
1126.2	0.693174	1.0398	1.044	1.0398	12.4732	0.0000	0.0000
1126.4	0.693613	1.0404	1.044	1.0404	12.4811	0.0000	0.0000

1126.6	0.694055	1.0411	1.044	1.0411	12.4890	0.0000	0.0000
1126.8	0.694498	1.0417	1.044	1.0417	12.4970	0.0000	0.0000
1127	0.694942	1.0424	1.044	1.0424	12.5050	0.0000	0.0000
1127.2	0.695388	1.0431	1.044	1.0431	12.5130	0.0000	0.0000
1127.4	0.695836	1.0438	1.044	1.0438	12.5210	0.0000	0.0000
1127.6	0.696286	1.0444	1.044	1.0443	12.5285	0.0001	0.0006
1127.8	0.696738	1.0451	1.044	1.0443	12.5319	0.0008	0.0053
1128	0.697191	1.0458	1.044	1.0443	12.5319	0.0015	0.0134
1128.2	0.697646	1.0465	1.044	1.0443	12.5319	0.0021	0.0216
1128.4	0.698102	1.0472	1.044	1.0443	12.5319	0.0028	0.0298
1128.6	0.698561	1.0478	1.044	1.0443	12.5319	0.0035	0.0380
1128.8	0.699022	1.0485	1.044	1.0443	12.5319	0.0042	0.0463
1129	0.699484	1.0492	1.044	1.0443	12.5319	0.0049	0.0546
1129.2	0.699948	1.0499	1.044	1.0443	12.5319	0.0056	0.0629
1129.4	0.700414	1.0506	1.044	1.0443	12.5319	0.0063	0.0713
1129.6	0.700882	1.0513	1.044	1.0443	12.5319	0.0070	0.0797
1129.8	0.701352	1.0520	1.044	1.0443	12.5319	0.0077	0.0882
1130	0.701824	1.0527	1.044	1.0443	12.5319	0.0084	0.0966
1130.2	0.702298	1.0534	1.044	1.0443	12.5319	0.0091	0.1052
1130.4	0.702774	1.0542	1.044	1.0443	12.5319	0.0098	0.1137
1130.6	0.703253	1.0549	1.044	1.0443	12.5319	0.0106	0.1223
1130.8	0.703733	1.0556	1.044	1.0443	12.5319	0.0113	0.1309
1131	0.704215	1.0563	1.044	1.0443	12.5319	0.0120	0.1396
1131.2	0.7047	1.0570	1.044	1.0443	12.5319	0.0127	0.1483
1131.4	0.705187	1.0578	1.044	1.0443	12.5319	0.0135	0.1570
1131.6	0.705676	1.0585	1.044	1.0443	12.5319	0.0142	0.1658
1131.8	0.706167	1.0593	1.044	1.0443	12.5319	0.0149	0.1746
1132	0.70666	1.0600	1.044	1.0443	12.5319	0.0157	0.1835
1132.2	0.707156	1.0607	1.044	1.0443	12.5319	0.0164	0.1924
1132.4	0.707654	1.0615	1.044	1.0443	12.5319	0.0172	0.2014
1132.6	0.708155	1.0622	1.044	1.0443	12.5319	0.0179	0.2103
1132.8	0.708658	1.0630	1.044	1.0443	12.5319	0.0187	0.2194
1133	0.709164	1.0637	1.044	1.0443	12.5319	0.0194	0.2285
1133.2	0.709672	1.0645	1.044	1.0443	12.5319	0.0202	0.2376
1133.4	0.710182	1.0653	1.044	1.0443	12.5319	0.0209	0.2467
1133.6	0.710695	1.0660	1.044	1.0443	12.5319	0.0217	0.2560
1133.8	0.711211	1.0668	1.044	1.0443	12.5319	0.0225	0.2652
1134	0.71173	1.0676	1.044	1.0443	12.5319	0.0233	0.2745
1134.2	0.712251	1.0684	1.044	1.0443	12.5319	0.0240	0.2839
1134.4	0.712775	1.0692	1.044	1.0443	12.5319	0.0248	0.2933
1134.6	0.713302	1.0700	1.044	1.0443	12.5319	0.0256	0.3027
1134.8	0.713831	1.0707	1.044	1.0443	12.5319	0.0264	0.3123
1135	0.714364	1.0715	1.044	1.0443	12.5319	0.0272	0.3218
1135.2	0.714899	1.0723	1.044	1.0443	12.5319	0.0280	0.3314
1135.4	0.715438	1.0732	1.044	1.0443	12.5319	0.0288	0.3411
1135.6	0.715979	1.0740	1.044	1.0443	12.5319	0.0296	0.3508
1135.8	0.716524	1.0748	1.044	1.0443	12.5319	0.0305	0.3606

1136	0.717072	1.0756	1.044	1.0443	12.5319	0.0313	0.3704
1136.2	0.717623	1.0764	1.044	1.0443	12.5319	0.0321	0.3803
1136.4	0.718177	1.0773	1.044	1.0443	12.5319	0.0329	0.3902
1136.6	0.718735	1.0781	1.044	1.0443	12.5319	0.0338	0.4003
1136.8	0.719296	1.0789	1.044	1.0443	12.5319	0.0346	0.4103
1137	0.71986	1.0798	1.044	1.0443	12.5319	0.0355	0.4205
1137.2	0.720428	1.0806	1.044	1.0443	12.5319	0.0363	0.4307
1137.4	0.721	1.0815	1.044	1.0443	12.5319	0.0372	0.4409
1137.6	0.721575	1.0824	1.044	1.0443	12.5319	0.0380	0.4512
1137.8	0.722155	1.0832	1.044	1.0443	12.5319	0.0389	0.4616
1138	0.722738	1.0841	1.044	1.0443	12.5319	0.0398	0.4721
1138.2	0.723325	1.0850	1.044	1.0443	12.5319	0.0407	0.4826
1138.4	0.723916	1.0859	1.044	1.0443	12.5319	0.0415	0.4932
1138.6	0.724511	1.0868	1.044	1.0443	12.5319	0.0424	0.5039
1138.8	0.72511	1.0877	1.044	1.0443	12.5319	0.0433	0.5146
1139	0.725713	1.0886	1.044	1.0443	12.5319	0.0442	0.5255
1139.2	0.726321	1.0895	1.044	1.0443	12.5319	0.0452	0.5364
1139.4	0.726934	1.0904	1.044	1.0443	12.5319	0.0461	0.5474
1139.6	0.727551	1.0913	1.044	1.0443	12.5319	0.0470	0.5584
1139.8	0.728172	1.0923	1.044	1.0443	12.5319	0.0479	0.5696
1140	0.728799	1.0932	1.044	1.0443	12.5319	0.0489	0.5808
1140.2	0.72943	1.0941	1.044	1.0443	12.5319	0.0498	0.5921
1140.4	0.730067	1.0951	1.044	1.0443	12.5319	0.0508	0.6035
1140.6	0.730709	1.0961	1.044	1.0443	12.5319	0.0517	0.6150
1140.8	0.731356	1.0970	1.044	1.0443	12.5319	0.0527	0.6266
1141	0.732008	1.0980	1.044	1.0443	12.5319	0.0537	0.6383
1141.2	0.732666	1.0990	1.044	1.0443	12.5319	0.0547	0.6501
1141.4	0.73333	1.1000	1.044	1.0443	12.5319	0.0557	0.6620
1141.6	0.733999	1.1010	1.044	1.0443	12.5319	0.0567	0.6740
1141.8	0.734675	1.1020	1.044	1.0443	12.5319	0.0577	0.6861
1142	0.735357	1.1030	1.044	1.0443	12.5319	0.0587	0.6983
1142.2	0.736046	1.1041	1.044	1.0443	12.5319	0.0597	0.7107
1142.4	0.736741	1.1051	1.044	1.0443	12.5319	0.0608	0.7231
1142.6	0.737443	1.1062	1.044	1.0443	12.5319	0.0618	0.7357
1142.8	0.738152	1.1072	1.044	1.0443	12.5319	0.0629	0.7484
1143	0.738868	1.1083	1.044	1.0443	12.5319	0.0640	0.7612
1143.2	0.739592	1.1094	1.044	1.0443	12.5319	0.0651	0.7742
1143.4	0.740323	1.1105	1.044	1.0443	12.5319	0.0662	0.7873
1143.6	0.741063	1.1116	1.044	1.0443	12.5319	0.0673	0.8005
1143.8	0.741811	1.1127	1.044	1.0443	12.5319	0.0684	0.8139
1144	0.742567	1.1139	1.044	1.0443	12.5319	0.0695	0.8275
1144.2	0.743333	1.1150	1.044	1.0443	12.5319	0.0707	0.8412
1144.4	0.744108	1.1162	1.044	1.0443	12.5319	0.0718	0.8550
1144.6	0.744892	1.1173	1.044	1.0443	12.5319	0.0730	0.8691
1144.8	0.745687	1.1185	1.044	1.0443	12.5319	0.0742	0.8833
1145	0.746492	1.1197	1.044	1.0443	12.5319	0.0754	0.8977
1145.2	0.747307	1.1210	1.044	1.0443	12.5319	0.0766	0.9122

1145.4	0.748135	1.1222	1.044	1.0443	12.5319	0.0779	0.9270
1145.6	0.748974	1.1235	1.044	1.0443	12.5319	0.0791	0.9420
1145.8	0.749825	1.1247	1.044	1.0443	12.5319	0.0804	0.9572
1146	0.750689	1.1260	1.044	1.0443	12.5319	0.0817	0.9727
1146.2	0.751567	1.1274	1.044	1.0443	12.5319	0.0830	0.9884
1146.4	0.75246	1.1287	1.044	1.0443	12.5319	0.0844	1.0043
1146.6	0.753367	1.1301	1.044	1.0443	12.5319	0.0857	1.0205
1146.8	0.754291	1.1314	1.044	1.0443	12.5319	0.0871	1.0370
1147	0.755231	1.1328	1.044	1.0443	12.5319	0.0885	1.0538
1147.2	0.75619	1.1343	1.044	1.0443	12.5319	0.0900	1.0708
1147.4	0.757167	1.1358	1.044	1.0443	12.5319	0.0914	1.0883
1147.6	0.758164	1.1372	1.044	1.0443	12.5319	0.0929	1.1060
1147.8	0.759183	1.1388	1.044	1.0443	12.5319	0.0944	1.1242
1148	0.760225	1.1403	1.044	1.0443	12.5319	0.0960	1.1427
1148.2	0.761292	1.1419	1.044	1.0443	12.5319	0.0976	1.1617
1148.4	0.762385	1.1436	1.044	1.0443	12.5319	0.0992	1.1811
1148.6	0.763507	1.1453	1.044	1.0443	12.5319	0.1009	1.2011
1148.8	0.764661	1.1470	1.044	1.0443	12.5319	0.1027	1.2216
1149	0.76585	1.1488	1.044	1.0443	12.5319	0.1044	1.2427
1149.2	0.767076	1.1506	1.044	1.0443	12.5319	0.1063	1.2644
1149.4	0.768344	1.1525	1.044	1.0443	12.5319	0.1082	1.2868
1149.6	0.769659	1.1545	1.044	1.0443	12.5319	0.1102	1.3101
1149.8	0.771026	1.1565	1.044	1.0443	12.5319	0.1122	1.3342
1150	0.772454	1.1587	1.044	1.0443	12.5319	0.1144	1.3594
1150.2	0.77395	1.1609	1.044	1.0443	12.5319	0.1166	1.3857
1150.4	0.775526	1.1633	1.044	1.0443	12.5319	0.1190	1.4133
1150.6	0.777198	1.1658	1.044	1.0443	12.5319	0.1215	1.4426
1150.8	0.778987	1.1685	1.044	1.0443	12.5319	0.1242	1.4737
1151	0.780923	1.1714	1.044	1.0443	12.5319	0.1271	1.5072
1151.2	0.78305	1.1746	1.044	1.0443	12.5319	0.1302	1.5438
1151.4	0.785447	1.1782	1.044	1.0443	12.5319	0.1338	1.5845
1151.6	0.788262	1.1824	1.044	1.0443	12.5319	0.1381	1.6314
1151.8	0.79187	1.1878	1.044	1.0443	12.5319	0.1435	1.6892
1152	0.8	1.2000	1.044	1.0443	12.5319	0.1557	1.7949
1152.2	0.804237	1.2064	1.044	1.0443	12.5319	0.1620	1.9062
1152.4	0.806118	1.2092	1.044	1.0443	12.5319	0.1648	1.9613
1152.6	0.807585	1.2114	1.044	1.0443	12.5319	0.1670	1.9914
1152.8	0.808835	1.2133	1.044	1.0443	12.5319	0.1689	2.0158
1153	0.809944	1.2149	1.044	1.0443	12.5319	0.1706	2.0371
1153.2	0.810953	1.2164	1.044	1.0443	12.5319	0.1721	2.0561
1153.4	0.811885	1.2178	1.044	1.0443	12.5319	0.1735	2.0736
1153.6	0.812757	1.2191	1.044	1.0443	12.5319	0.1748	2.0898
1153.8	0.813578	1.2204	1.044	1.0443	12.5319	0.1760	2.1051
1154	0.814358	1.2215	1.044	1.0443	12.5319	0.1772	2.1195
1154.2	0.815102	1.2227	1.044	1.0443	12.5319	0.1783	2.1332
1154.4	0.815815	1.2237	1.044	1.0443	12.5319	0.1794	2.1463
1154.6	0.8165	1.2248	1.044	1.0443	12.5319	0.1804	2.1589

1154.8	0.817161	1.2257	1.044	1.0443	12.5319	0.1814	2.1710
1155	0.8178	1.2267	1.044	1.0443	12.5319	0.1824	2.1827
1155.2	0.81842	1.2276	1.044	1.0443	12.5319	0.1833	2.1940
1155.4	0.819021	1.2285	1.044	1.0443	12.5319	0.1842	2.2050
1155.6	0.819606	1.2294	1.044	1.0443	12.5319	0.1851	2.2157
1155.8	0.820176	1.2303	1.044	1.0443	12.5319	0.1859	2.2261
1156	0.820732	1.2311	1.044	1.0443	12.5319	0.1868	2.2362
1156.2	0.821275	1.2319	1.044	1.0443	12.5319	0.1876	2.2461
1156.4	0.821806	1.2327	1.044	1.0443	12.5319	0.1884	2.2558
1156.6	0.822326	1.2335	1.044	1.0443	12.5319	0.1892	2.2652
1156.8	0.822835	1.2343	1.044	1.0443	12.5319	0.1899	2.2745
1157	0.823335	1.2350	1.044	1.0443	12.5319	0.1907	2.2836
1157.2	0.823825	1.2357	1.044	1.0443	12.5319	0.1914	2.2925
1157.4	0.824306	1.2365	1.044	1.0443	12.5319	0.1921	2.3012
1157.6	0.824779	1.2372	1.044	1.0443	12.5319	0.1928	2.3098
1157.8	0.825245	1.2379	1.044	1.0443	12.5319	0.1935	2.3183
1158	0.825702	1.2386	1.044	1.0443	12.5319	0.1942	2.3266
1158.2	0.826153	1.2392	1.044	1.0443	12.5319	0.1949	2.3348
1158.4	0.826597	1.2399	1.044	1.0443	12.5319	0.1956	2.3428
1158.6	0.827034	1.2406	1.044	1.0443	12.5319	0.1962	2.3507
1158.8	0.827465	1.2412	1.044	1.0443	12.5319	0.1969	2.3585
1159	0.82789	1.2418	1.044	1.0443	12.5319	0.1975	2.3663
1159.2	0.82831	1.2425	1.044	1.0443	12.5319	0.1981	2.3739
1159.4	0.828724	1.2431	1.044	1.0443	12.5319	0.1988	2.3814
1159.6	0.829133	1.2437	1.044	1.0443	12.5319	0.1994	2.3888
1159.8	0.829537	1.2443	1.044	1.0443	12.5319	0.2000	2.3961
1160	0.829936	1.2449	1.044	1.0443	12.5319	0.2006	2.4033
1160.2	0.83033	1.2455	1.044	1.0443	12.5319	0.2012	2.4104
1160.4	0.83072	1.2461	1.044	1.0443	12.5319	0.2018	2.4175
1160.6	0.831105	1.2467	1.044	1.0443	12.5319	0.2023	2.4245
1160.8	0.831487	1.2472	1.044	1.0443	12.5319	0.2029	2.4314
1161	0.831864	1.2478	1.044	1.0443	12.5319	0.2035	2.4382
1161.2	0.832237	1.2484	1.044	1.0443	12.5319	0.2040	2.4450
1161.4	0.832607	1.2489	1.044	1.0443	12.5319	0.2046	2.4517
1161.6	0.832973	1.2495	1.044	1.0443	12.5319	0.2051	2.4583
1161.8	0.833335	1.2500	1.044	1.0443	12.5319	0.2057	2.4648
1162	0.833694	1.2505	1.044	1.0443	12.5319	0.2062	2.4713
1162.2	0.834049	1.2511	1.044	1.0443	12.5319	0.2067	2.4777
1162.4	0.834402	1.2516	1.044	1.0443	12.5319	0.2073	2.4841
1162.6	0.834751	1.2521	1.044	1.0443	12.5319	0.2078	2.4904
1162.8	0.835097	1.2526	1.044	1.0443	12.5319	0.2083	2.4967
1163	0.83544	1.2532	1.044	1.0443	12.5319	0.2088	2.5029
1163.2	0.83578	1.2537	1.044	1.0443	12.5319	0.2093	2.5090
1163.4	0.836117	1.2542	1.044	1.0443	12.5319	0.2098	2.5151
1163.6	0.836451	1.2547	1.044	1.0443	12.5319	0.2103	2.5212
1163.8	0.836783	1.2552	1.044	1.0443	12.5319	0.2108	2.5272
1164	0.837112	1.2557	1.044	1.0443	12.5319	0.2113	2.5331

1164.2	0.837439	1.2562	1.044	1.0443	12.5319	0.2118	2.5390
1164.4	0.837763	1.2566	1.044	1.0443	12.5319	0.2123	2.5449
1164.6	0.838085	1.2571	1.044	1.0443	12.5319	0.2128	2.5507
1164.8	0.838404	1.2576	1.044	1.0443	12.5319	0.2133	2.5564
1165	0.838721	1.2581	1.044	1.0443	12.5319	0.2138	2.5622
1165.2	0.839035	1.2586	1.044	1.0443	12.5319	0.2142	2.5679
1165.4	0.839348	1.2590	1.044	1.0443	12.5319	0.2147	2.5735
1165.6	0.839658	1.2595	1.044	1.0443	12.5319	0.2152	2.5791
1165.8	0.839966	1.2599	1.044	1.0443	12.5319	0.2156	2.5847
1166	0.840272	1.2604	1.044	1.0443	12.5319	0.2161	2.5902
1166.2	0.840576	1.2609	1.044	1.0443	12.5319	0.2165	2.5957
1166.4	0.840877	1.2613	1.044	1.0443	12.5319	0.2170	2.6011
1166.6	0.841177	1.2618	1.044	1.0443	12.5319	0.2174	2.6065
1166.8	0.841475	1.2622	1.044	1.0443	12.5319	0.2179	2.6119
1167	0.841772	1.2627	1.044	1.0443	12.5319	0.2183	2.6173
1167.2	0.842066	1.2631	1.044	1.0443	12.5319	0.2188	2.6226
1167.4	0.842358	1.2635	1.044	1.0443	12.5319	0.2192	2.6279
1167.6	0.842649	1.2640	1.044	1.0443	12.5319	0.2196	2.6331
1167.8	0.842938	1.2644	1.044	1.0443	12.5319	0.2201	2.6383
1168	0.843225	1.2648	1.044	1.0443	12.5319	0.2205	2.6435
1168.2	0.843511	1.2653	1.044	1.0443	12.5319	0.2209	2.6487
1168.4	0.843794	1.2657	1.044	1.0443	12.5319	0.2214	2.6538
1168.6	0.844077	1.2661	1.044	1.0443	12.5319	0.2218	2.6589
1168.8	0.844357	1.2665	1.044	1.0443	12.5319	0.2222	2.6640
1169	0.844636	1.2670	1.044	1.0443	12.5319	0.2226	2.6690
1169.2	0.844914	1.2674	1.044	1.0443	12.5319	0.2230	2.6740
1169.4	0.84519	1.2678	1.044	1.0443	12.5319	0.2235	2.6790
1169.6	0.845465	1.2682	1.044	1.0443	12.5319	0.2239	2.6839
1169.8	0.845738	1.2686	1.044	1.0443	12.5319	0.2243	2.6889
1170	0.846009	1.2690	1.044	1.0443	12.5319	0.2247	2.6938
1170.2	0.84628	1.2694	1.044	1.0443	12.5319	0.2251	2.6987
1170.4	0.846548	1.2698	1.044	1.0443	12.5319	0.2255	2.7035
1170.6	0.846816	1.2702	1.044	1.0443	12.5319	0.2259	2.7083
1170.8	0.847082	1.2706	1.044	1.0443	12.5319	0.2263	2.7131
1171	0.847347	1.2710	1.044	1.0443	12.5319	0.2267	2.7179
1171.2	0.84761	1.2714	1.044	1.0443	12.5319	0.2271	2.7227
1171.4	0.847873	1.2718	1.044	1.0443	12.5319	0.2275	2.7274
1171.6	0.848134	1.2722	1.044	1.0443	12.5319	0.2279	2.7321
1171.8	0.848393	1.2726	1.044	1.0443	12.5319	0.2283	2.7368
1172	0.848652	1.2730	1.044	1.0443	12.5319	0.2286	2.7415
1172.2	0.848909	1.2734	1.044	1.0443	12.5319	0.2290	2.7461
1172.4	0.849165	1.2737	1.044	1.0443	12.5319	0.2294	2.7507
1172.6	0.84942	1.2741	1.044	1.0443	12.5319	0.2298	2.7553
1172.8	0.849674	1.2745	1.044	1.0443	12.5319	0.2302	2.7599
1173	0.849926	1.2749	1.044	1.0443	12.5319	0.2306	2.7645
1173.2	0.850178	1.2753	1.044	1.0443	12.5319	0.2309	2.7690
1173.4	0.850428	1.2756	1.044	1.0443	12.5319	0.2313	2.7735

1173.6	0.850677	1.2760	1.044	1.0443	12.5319	0.2317	2.7780
1173.8	0.850925	1.2764	1.044	1.0443	12.5319	0.2321	2.7825
1174	0.851172	1.2768	1.044	1.0443	12.5319	0.2324	2.7869
1174.2	0.851418	1.2771	1.044	1.0443	12.5319	0.2328	2.7914
1174.4	0.851663	1.2775	1.044	1.0443	12.5319	0.2332	2.7958
1174.6	0.851907	1.2779	1.044	1.0443	12.5319	0.2335	2.8002
1174.8	0.85215	1.2782	1.044	1.0443	12.5319	0.2339	2.8046
1175	0.852392	1.2786	1.044	1.0443	12.5319	0.2343	2.8089
1175.2	0.852633	1.2789	1.044	1.0443	12.5319	0.2346	2.8133
1175.4	0.852873	1.2793	1.044	1.0443	12.5319	0.2350	2.8176
1175.6	0.853112	1.2797	1.044	1.0443	12.5319	0.2353	2.8219
1175.8	0.85335	1.2800	1.044	1.0443	12.5319	0.2357	2.8262
1176	0.853588	1.2804	1.044	1.0443	12.5319	0.2361	2.8305
1176.2	0.853824	1.2807	1.044	1.0443	12.5319	0.2364	2.8348
1176.4	0.854059	1.2811	1.044	1.0443	12.5319	0.2368	2.8390
1176.6	0.854293	1.2814	1.044	1.0443	12.5319	0.2371	2.8432
1176.8	0.854527	1.2818	1.044	1.0443	12.5319	0.2375	2.8474
1177	0.85476	1.2821	1.044	1.0443	12.5319	0.2378	2.8516
1177.2	0.854991	1.2825	1.044	1.0443	12.5319	0.2382	2.8558
1177.4	0.855222	1.2828	1.044	1.0443	12.5319	0.2385	2.8600
1177.6	0.855452	1.2832	1.044	1.0443	12.5319	0.2388	2.8641
1177.8	0.855681	1.2835	1.044	1.0443	12.5319	0.2392	2.8683
1178	0.85591	1.2839	1.044	1.0443	12.5319	0.2395	2.8724
1178.2	0.856137	1.2842	1.044	1.0443	12.5319	0.2399	2.8765
1178.4	0.856364	1.2845	1.044	1.0443	12.5319	0.2402	2.8806
1178.6	0.85659	1.2849	1.044	1.0443	12.5319	0.2406	2.8846
1178.8	0.856815	1.2852	1.044	1.0443	12.5319	0.2409	2.8887
1179	0.857039	1.2856	1.044	1.0443	12.5319	0.2412	2.8927
1179.2	0.857263	1.2859	1.044	1.0443	12.5319	0.2416	2.8968
1179.4	0.857486	1.2862	1.044	1.0443	12.5319	0.2419	2.9008
1179.6	0.857708	1.2866	1.044	1.0443	12.5319	0.2422	2.9048
1179.8	0.857929	1.2869	1.044	1.0443	12.5319	0.2426	2.9088
1180	0.858149	1.2872	1.044	1.0443	12.5319	0.2429	2.9128
1180.2	0.858369	1.2876	1.044	1.0443	12.5319	0.2432	2.9167
1180.4	0.858588	1.2879	1.044	1.0443	12.5319	0.2436	2.9207
1180.6	0.858807	1.2882	1.044	1.0443	12.5319	0.2439	2.9246
1180.8	0.859024	1.2885	1.044	1.0443	12.5319	0.2442	2.9285
1181	0.859241	1.2889	1.044	1.0443	12.5319	0.2445	2.9324
1181.2	0.859457	1.2892	1.044	1.0443	12.5319	0.2449	2.9363
1181.4	0.859673	1.2895	1.044	1.0443	12.5319	0.2452	2.9402
1181.6	0.859888	1.2898	1.044	1.0443	12.5319	0.2455	2.9441
1181.8	0.860102	1.2902	1.044	1.0443	12.5319	0.2458	2.9480
1182	0.860315	1.2905	1.044	1.0443	12.5319	0.2461	2.9518
1182.2	0.860528	1.2908	1.044	1.0443	12.5319	0.2465	2.9556
1182.4	0.86074	1.2911	1.044	1.0443	12.5319	0.2468	2.9595
1182.6	0.860951	1.2914	1.044	1.0443	12.5319	0.2471	2.9633
1182.8	0.861162	1.2917	1.044	1.0443	12.5319	0.2474	2.9671

1183	0.861372	1.2921	1.044	1.0443	12.5319	0.2477	2.9709
1183.2	0.861582	1.2924	1.044	1.0443	12.5319	0.2480	2.9746
1183.4	0.861791	1.2927	1.044	1.0443	12.5319	0.2484	2.9784
1183.6	0.861999	1.2930	1.044	1.0443	12.5319	0.2487	2.9822
1183.8	0.862207	1.2933	1.044	1.0443	12.5319	0.2490	2.9859
1184	0.862414	1.2936	1.044	1.0443	12.5319	0.2493	2.9896
1184.2	0.86262	1.2939	1.044	1.0443	12.5319	0.2496	2.9934
1184.4	0.862826	1.2942	1.044	1.0443	12.5319	0.2499	2.9971
1184.6	0.863031	1.2945	1.044	1.0443	12.5319	0.2502	3.0008
1184.8	0.863236	1.2949	1.044	1.0443	12.5319	0.2505	3.0045
1185	0.86344	1.2952	1.044	1.0443	12.5319	0.2508	3.0081
1185.2	0.863644	1.2955	1.044	1.0443	12.5319	0.2511	3.0118
1185.4	0.863847	1.2958	1.044	1.0443	12.5319	0.2514	3.0155
1185.6	0.864049	1.2961	1.044	1.0443	12.5319	0.2517	3.0191
1185.8	0.864251	1.2964	1.044	1.0443	12.5319	0.2520	3.0228
1186	0.864452	1.2967	1.044	1.0443	12.5319	0.2523	3.0264
1186.2	0.864653	1.2970	1.044	1.0443	12.5319	0.2527	3.0300
1186.4	0.864853	1.2973	1.044	1.0443	12.5319	0.2530	3.0336
1186.6	0.865052	1.2976	1.044	1.0443	12.5319	0.2532	3.0372
1186.8	0.865251	1.2979	1.044	1.0443	12.5319	0.2535	3.0408
1187	0.86545	1.2982	1.044	1.0443	12.5319	0.2538	3.0444
1187.2	0.865648	1.2985	1.044	1.0443	12.5319	0.2541	3.0479
1187.4	0.865845	1.2988	1.044	1.0443	12.5319	0.2544	3.0515
1187.6	0.866042	1.2991	1.044	1.0443	12.5319	0.2547	3.0550
1187.8	0.866238	1.2994	1.044	1.0443	12.5319	0.2550	3.0586
1188	0.866434	1.2997	1.044	1.0443	12.5319	0.2553	3.0621
1188.2	0.86663	1.2999	1.044	1.0443	12.5319	0.2556	3.0656
1188.4	0.866824	1.3002	1.044	1.0443	12.5319	0.2559	3.0691
1188.6	0.867019	1.3005	1.044	1.0443	12.5319	0.2562	3.0726
1188.8	0.867213	1.3008	1.044	1.0443	12.5319	0.2565	3.0761
1189	0.867406	1.3011	1.044	1.0443	12.5319	0.2568	3.0796
1189.2	0.867599	1.3014	1.044	1.0443	12.5319	0.2571	3.0831
1189.4	0.867791	1.3017	1.044	1.0443	12.5319	0.2574	3.0866
1189.6	0.867983	1.3020	1.044	1.0443	12.5319	0.2576	3.0900
1189.8	0.868175	1.3023	1.044	1.0443	12.5319	0.2579	3.0935
1190	0.868366	1.3025	1.044	1.0443	12.5319	0.2582	3.0969
1190.2	0.868556	1.3028	1.044	1.0443	12.5319	0.2585	3.1003
1190.4	0.868746	1.3031	1.044	1.0443	12.5319	0.2588	3.1038
1190.6	0.868936	1.3034	1.044	1.0443	12.5319	0.2591	3.1072
1190.8	0.869125	1.3037	1.044	1.0443	12.5319	0.2594	3.1106
1191	0.869313	1.3040	1.044	1.0443	12.5319	0.2596	3.1140
1191.2	0.869501	1.3043	1.044	1.0443	12.5319	0.2599	3.1174
1191.4	0.869689	1.3045	1.044	1.0443	12.5319	0.2602	3.1208
1191.6	0.869876	1.3048	1.044	1.0443	12.5319	0.2605	3.1241
1191.8	0.870063	1.3051	1.044	1.0443	12.5319	0.2608	3.1275
1192	0.87025	1.3054	1.044	1.0443	12.5319	0.2610	3.1309
1192.2	0.870436	1.3057	1.044	1.0443	12.5319	0.2613	3.1342

1192.4	0.870621	1.3059	1.044	1.0443	12.5319	0.2616	3.1376
1192.6	0.870806	1.3062	1.044	1.0443	12.5319	0.2619	3.1409
1192.8	0.870991	1.3065	1.044	1.0443	12.5319	0.2622	3.1442
1193	0.871175	1.3068	1.044	1.0443	12.5319	0.2624	3.1475
1193.2	0.871359	1.3070	1.044	1.0443	12.5319	0.2627	3.1509
1193.4	0.871542	1.3073	1.044	1.0443	12.5319	0.2630	3.1542
1193.6	0.871725	1.3076	1.044	1.0443	12.5319	0.2633	3.1575
1193.8	0.871908	1.3079	1.044	1.0443	12.5319	0.2635	3.1608
1194	0.87209	1.3081	1.044	1.0443	12.5319	0.2638	3.1640
1194.2	0.872272	1.3084	1.044	1.0443	12.5319	0.2641	3.1673
1194.4	0.872453	1.3087	1.044	1.0443	12.5319	0.2644	3.1706
1194.6	0.872634	1.3090	1.044	1.0443	12.5319	0.2646	3.1738
1194.8	0.872814	1.3092	1.044	1.0443	12.5319	0.2649	3.1771
1195	0.872995	1.3095	1.044	1.0443	12.5319	0.2652	3.1803
1195.2	0.873174	1.3098	1.044	1.0443	12.5319	0.2654	3.1836
1195.4	0.873354	1.3100	1.044	1.0443	12.5319	0.2657	3.1868
1195.6	0.873533	1.3103	1.044	1.0443	12.5319	0.2660	3.1900
1195.8	0.873711	1.3106	1.044	1.0443	12.5319	0.2662	3.1932
1196	0.873889	1.3108	1.044	1.0443	12.5319	0.2665	3.1965
1196.2	0.874067	1.3111	1.044	1.0443	12.5319	0.2668	3.1997
1196.4	0.874245	1.3114	1.044	1.0443	12.5319	0.2670	3.2029
1196.6	0.874422	1.3116	1.044	1.0443	12.5319	0.2673	3.2061
1196.8	0.874598	1.3119	1.044	1.0443	12.5319	0.2676	3.2092
1197	0.874775	1.3122	1.044	1.0443	12.5319	0.2678	3.2124
1197.2	0.874951	1.3124	1.044	1.0443	12.5319	0.2681	3.2156
1197.4	0.875126	1.3127	1.044	1.0443	12.5319	0.2684	3.2187
1197.6	0.875301	1.3130	1.044	1.0443	12.5319	0.2686	3.2219
1197.8	0.875476	1.3132	1.044	1.0443	12.5319	0.2689	3.2251
1198	0.875651	1.3135	1.044	1.0443	12.5319	0.2691	3.2282
1198.2	0.875825	1.3137	1.044	1.0443	12.5319	0.2694	3.2313
1198.4	0.875999	1.3140	1.044	1.0443	12.5319	0.2697	3.2345
1198.6	0.876172	1.3143	1.044	1.0443	12.5319	0.2699	3.2376
1198.8	0.876345	1.3145	1.044	1.0443	12.5319	0.2702	3.2407
1199	0.876518	1.3148	1.044	1.0443	12.5319	0.2704	3.2438
1199.2	0.87669	1.3150	1.044	1.0443	12.5319	0.2707	3.2469
1199.4	0.876862	1.3153	1.044	1.0443	12.5319	0.2710	3.2500
1199.6	0.877034	1.3156	1.044	1.0443	12.5319	0.2712	3.2531
1199.8	0.877206	1.3158	1.044	1.0443	12.5319	0.2715	3.2562
1200	0.877377	1.3161	1.044	1.0443	12.5319	0.2717	3.2593
1200.2	0.877547	1.3163	1.044	1.0443	12.5319	0.2720	3.2624
1200.4	0.877718	1.3166	1.044	1.0443	12.5319	0.2722	3.2654
1200.6	0.877888	1.3168	1.044	1.0443	12.5319	0.2725	3.2685
1200.8	0.878057	1.3171	1.044	1.0443	12.5319	0.2728	3.2716
1201	0.878227	1.3173	1.044	1.0443	12.5319	0.2730	3.2746
1201.2	0.878396	1.3176	1.044	1.0443	12.5319	0.2733	3.2777
1201.4	0.878565	1.3178	1.044	1.0443	12.5319	0.2735	3.2807
1201.6	0.878733	1.3181	1.044	1.0443	12.5319	0.2738	3.2837

1201.8	0.878901	1.3184	1.044	1.0443	12.5319	0.2740	3.2868
1202	0.879069	1.3186	1.044	1.0443	12.5319	0.2743	3.2898
1202.2	0.879236	1.3189	1.044	1.0443	12.5319	0.2745	3.2928
1202.4	0.879404	1.3191	1.044	1.0443	12.5319	0.2748	3.2958
1202.6	0.87957	1.3194	1.044	1.0443	12.5319	0.2750	3.2988
1202.8	0.879737	1.3196	1.044	1.0443	12.5319	0.2753	3.3018
1203	0.879903	1.3199	1.044	1.0443	12.5319	0.2755	3.3048
1203.2	0.880069	1.3201	1.044	1.0443	12.5319	0.2758	3.3078
1203.4	0.880235	1.3204	1.044	1.0443	12.5319	0.2760	3.3108
1203.6	0.8804	1.3206	1.044	1.0443	12.5319	0.2763	3.3138
1203.8	0.880565	1.3208	1.044	1.0443	12.5319	0.2765	3.3167
1204	0.88073	1.3211	1.044	1.0443	12.5319	0.2768	3.3197
1204.2	0.880894	1.3213	1.044	1.0443	12.5319	0.2770	3.3227
1204.4	0.881058	1.3216	1.044	1.0443	12.5319	0.2773	3.3256
1204.6	0.881222	1.3218	1.044	1.0443	12.5319	0.2775	3.3286
1204.8	0.881386	1.3221	1.044	1.0443	12.5319	0.2777	3.3315
1205	0.881549	1.3223	1.044	1.0443	12.5319	0.2780	3.3345
1205.2	0.881712	1.3226	1.044	1.0443	12.5319	0.2782	3.3374
1205.4	0.881875	1.3228	1.044	1.0443	12.5319	0.2785	3.3403
1205.6	0.882037	1.3231	1.044	1.0443	12.5319	0.2787	3.3433
1205.8	0.882199	1.3233	1.044	1.0443	12.5319	0.2790	3.3462
1206	0.882361	1.3235	1.044	1.0443	12.5319	0.2792	3.3491
1206.2	0.882522	1.3238	1.044	1.0443	12.5319	0.2795	3.3520
1206.4	0.882684	1.3240	1.044	1.0443	12.5319	0.2797	3.3549
1206.6	0.882845	1.3243	1.044	1.0443	12.5319	0.2799	3.3578
1206.8	0.883005	1.3245	1.044	1.0443	12.5319	0.2802	3.3607
1207	0.883166	1.3247	1.044	1.0443	12.5319	0.2804	3.3636
1207.2	0.883326	1.3250	1.044	1.0443	12.5319	0.2807	3.3665
1207.4	0.883486	1.3252	1.044	1.0443	12.5319	0.2809	3.3694
1207.6	0.883645	1.3255	1.044	1.0443	12.5319	0.2811	3.3722
1207.8	0.883805	1.3257	1.044	1.0443	12.5319	0.2814	3.3751
1208	0.883964	1.3259	1.044	1.0443	12.5319	0.2816	3.3780
1208.2	0.884123	1.3262	1.044	1.0443	12.5319	0.2819	3.3808
1208.4	0.884281	1.3264	1.044	1.0443	12.5319	0.2821	3.3837
1208.6	0.884439	1.3267	1.044	1.0443	12.5319	0.2823	3.3865
1208.8	0.884597	1.3269	1.044	1.0443	12.5319	0.2826	3.3894
1209	0.884755	1.3271	1.044	1.0443	12.5319	0.2828	3.3922
1209.2	0.884913	1.3274	1.044	1.0443	12.5319	0.2830	3.3951
1209.4	0.88507	1.3276	1.044	1.0443	12.5319	0.2833	3.3979
1209.6	0.885227	1.3278	1.044	1.0443	12.5319	0.2835	3.4007
1209.8	0.885383	1.3281	1.044	1.0443	12.5319	0.2837	3.4035
1210	0.88554	1.3283	1.044	1.0443	12.5319	0.2840	3.4064
1210.2	0.885696	1.3285	1.044	1.0443	12.5319	0.2842	3.4092
1210.4	0.885852	1.3288	1.044	1.0443	12.5319	0.2844	3.4120
1210.6	0.886008	1.3290	1.044	1.0443	12.5319	0.2847	3.4148
1210.8	0.886163	1.3292	1.044	1.0443	12.5319	0.2849	3.4176
1211	0.886318	1.3295	1.044	1.0443	12.5319	0.2851	3.4204

1211.2	0.886473	1.3297	1.044	1.0443	12.5319	0.2854	3.4232
1211.4	0.886628	1.3299	1.044	1.0443	12.5319	0.2856	3.4260
1211.6	0.886783	1.3302	1.044	1.0443	12.5319	0.2858	3.4288
1211.8	0.886937	1.3304	1.044	1.0443	12.5319	0.2861	3.4315
1212	0.887091	1.3306	1.044	1.0443	12.5319	0.2863	3.4343
1212.2	0.887245	1.3309	1.044	1.0443	12.5319	0.2865	3.4371
1212.4	0.887398	1.3311	1.044	1.0443	12.5319	0.2868	3.4398
1212.6	0.887551	1.3313	1.044	1.0443	12.5319	0.2870	3.4426
1212.8	0.887704	1.3316	1.044	1.0443	12.5319	0.2872	3.4454
1213	0.887857	1.3318	1.044	1.0443	12.5319	0.2875	3.4481
1213.2	0.88801	1.3320	1.044	1.0443	12.5319	0.2877	3.4509
1213.4	0.888162	1.3322	1.044	1.0443	12.5319	0.2879	3.4536
1213.6	0.888314	1.3325	1.044	1.0443	12.5319	0.2881	3.4563
1213.8	0.888466	1.3327	1.044	1.0443	12.5319	0.2884	3.4591
1214	0.888618	1.3329	1.044	1.0443	12.5319	0.2886	3.4618
1214.2	0.888769	1.3332	1.044	1.0443	12.5319	0.2888	3.4645
1214.4	0.88892	1.3334	1.044	1.0443	12.5319	0.2891	3.4673
1214.6	0.889071	1.3336	1.044	1.0443	12.5319	0.2893	3.4700
1214.8	0.889222	1.3338	1.044	1.0443	12.5319	0.2895	3.4727
1215	0.889372	1.3341	1.044	1.0443	12.5319	0.2897	3.4754
1215.2	0.889522	1.3343	1.044	1.0443	12.5319	0.2900	3.4781
1215.4	0.889673	1.3345	1.044	1.0443	12.5319	0.2902	3.4808
1215.6	0.889822	1.3347	1.044	1.0443	12.5319	0.2904	3.4835
1215.8	0.889972	1.3350	1.044	1.0443	12.5319	0.2906	3.4862
1216	0.890121	1.3352	1.044	1.0443	12.5319	0.2909	3.4889
1216.2	0.89027	1.3354	1.044	1.0443	12.5319	0.2911	3.4916
1216.4	0.890419	1.3356	1.044	1.0443	12.5319	0.2913	3.4943
1216.6	0.890568	1.3359	1.044	1.0443	12.5319	0.2915	3.4969
1216.8	0.890717	1.3361	1.044	1.0443	12.5319	0.2917	3.4996
1217	0.890865	1.3363	1.044	1.0443	12.5319	0.2920	3.5023
1217.2	0.891013	1.3365	1.044	1.0443	12.5319	0.2922	3.5050
1217.4	0.891161	1.3367	1.044	1.0443	12.5319	0.2924	3.5076
1217.6	0.891308	1.3370	1.044	1.0443	12.5319	0.2926	3.5103
1217.8	0.891456	1.3372	1.044	1.0443	12.5319	0.2929	3.5129
1218	0.891603	1.3374	1.044	1.0443	12.5319	0.2931	3.5156
1218.2	0.89175	1.3376	1.044	1.0443	12.5319	0.2933	3.5182
1218.4	0.891897	1.3378	1.044	1.0443	12.5319	0.2935	3.5209
1218.6	0.892044	1.3381	1.044	1.0443	12.5319	0.2937	3.5235
1218.8	0.89219	1.3383	1.044	1.0443	12.5319	0.2940	3.5262
1219	0.892336	1.3385	1.044	1.0443	12.5319	0.2942	3.5288
1219.2	0.892482	1.3387	1.044	1.0443	12.5319	0.2944	3.5314
1219.4	0.892628	1.3389	1.044	1.0443	12.5319	0.2946	3.5340
1219.6	0.892773	1.3392	1.044	1.0443	12.5319	0.2948	3.5367
1219.8	0.892919	1.3394	1.044	1.0443	12.5319	0.2950	3.5393
1220	0.893064	1.3396	1.044	1.0443	12.5319	0.2953	3.5419
1220.2	0.893209	1.3398	1.044	1.0443	12.5319	0.2955	3.5445
1220.4	0.893354	1.3400	1.044	1.0443	12.5319	0.2957	3.5471

1220.6	0.893498	1.3402	1.044	1.0443	12.5319	0.2959	3.5497
1220.8	0.893643	1.3405	1.044	1.0443	12.5319	0.2961	3.5523
1221	0.893787	1.3407	1.044	1.0443	12.5319	0.2964	3.5549
1221.2	0.893931	1.3409	1.044	1.0443	12.5319	0.2966	3.5575
1221.4	0.894075	1.3411	1.044	1.0443	12.5319	0.2968	3.5601
1221.6	0.894218	1.3413	1.044	1.0443	12.5319	0.2970	3.5627
1221.8	0.894362	1.3415	1.044	1.0443	12.5319	0.2972	3.5653
1222	0.894505	1.3418	1.044	1.0443	12.5319	0.2974	3.5679
1222.2	0.894648	1.3420	1.044	1.0443	12.5319	0.2976	3.5704
1222.4	0.894791	1.3422	1.044	1.0443	12.5319	0.2979	3.5730
1222.6	0.894933	1.3424	1.044	1.0443	12.5319	0.2981	3.5756
1222.8	0.895076	1.3426	1.044	1.0443	12.5319	0.2983	3.5781
1223	0.895218	1.3428	1.044	1.0443	12.5319	0.2985	3.5807
1223.2	0.89536	1.3430	1.044	1.0443	12.5319	0.2987	3.5833
1223.4	0.895502	1.3433	1.044	1.0443	12.5319	0.2989	3.5858
1223.6	0.895644	1.3435	1.044	1.0443	12.5319	0.2991	3.5884
1223.8	0.895785	1.3437	1.044	1.0443	12.5319	0.2993	3.5909
1224	0.895926	1.3439	1.044	1.0443	12.5319	0.2996	3.5935
1224.2	0.896068	1.3441	1.044	1.0443	12.5319	0.2998	3.5960
1224.4	0.896208	1.3443	1.044	1.0443	12.5319	0.3000	3.5985
1224.6	0.896349	1.3445	1.044	1.0443	12.5319	0.3002	3.6011
1224.8	0.89649	1.3447	1.044	1.0443	12.5319	0.3004	3.6036
1225	0.89663	1.3449	1.044	1.0443	12.5319	0.3006	3.6061
1225.2	0.89677	1.3452	1.044	1.0443	12.5319	0.3008	3.6087
1225.4	0.896911	1.3454	1.044	1.0443	12.5319	0.3010	3.6112
1225.6	0.89705	1.3456	1.044	1.0443	12.5319	0.3012	3.6137
1225.8	0.89719	1.3458	1.044	1.0443	12.5319	0.3015	3.6162
1226	0.89733	1.3460	1.044	1.0443	12.5319	0.3017	3.6187
1226.2	0.897469	1.3462	1.044	1.0443	12.5319	0.3019	3.6212
1226.4	0.897608	1.3464	1.044	1.0443	12.5319	0.3021	3.6237
1226.6	0.897747	1.3466	1.044	1.0443	12.5319	0.3023	3.6263
1226.8	0.897886	1.3468	1.044	1.0443	12.5319	0.3025	3.6288
1227	0.898024	1.3470	1.044	1.0443	12.5319	0.3027	3.6312
1227.2	0.898163	1.3472	1.044	1.0443	12.5319	0.3029	3.6337
1227.4	0.898301	1.3475	1.044	1.0443	12.5319	0.3031	3.6362
1227.6	0.898439	1.3477	1.044	1.0443	12.5319	0.3033	3.6387
1227.8	0.898577	1.3479	1.044	1.0443	12.5319	0.3035	3.6412
1228	0.898715	1.3481	1.044	1.0443	12.5319	0.3037	3.6437
1228.2	0.898853	1.3483	1.044	1.0443	12.5319	0.3040	3.6462
1228.4	0.89899	1.3485	1.044	1.0443	12.5319	0.3042	3.6486
1228.6	0.899127	1.3487	1.044	1.0443	12.5319	0.3044	3.6511
1228.8	0.899264	1.3489	1.044	1.0443	12.5319	0.3046	3.6536
1229	0.899401	1.3491	1.044	1.0443	12.5319	0.3048	3.6560
1229.2	0.899538	1.3493	1.044	1.0443	12.5319	0.3050	3.6585
1229.4	0.899675	1.3495	1.044	1.0443	12.5319	0.3052	3.6610
1229.6	0.899811	1.3497	1.044	1.0443	12.5319	0.3054	3.6634
1229.8	0.899947	1.3499	1.044	1.0443	12.5319	0.3056	3.6659

1230	0.900083	1.3501	1.044	1.0443	12.5319	0.3058	3.6683
1230.2	0.900219	1.3503	1.044	1.0443	12.5319	0.3060	3.6708
1230.4	0.900355	1.3505	1.044	1.0443	12.5319	0.3062	3.6732
1230.6	0.900491	1.3507	1.044	1.0443	12.5319	0.3064	3.6757
1230.8	0.900626	1.3509	1.044	1.0443	12.5319	0.3066	3.6781
1231	0.900761	1.3511	1.044	1.0443	12.5319	0.3068	3.6805
1231.2	0.900897	1.3513	1.044	1.0443	12.5319	0.3070	3.6830
1231.4	0.901032	1.3515	1.044	1.0443	12.5319	0.3072	3.6854
1231.6	0.901166	1.3517	1.044	1.0443	12.5319	0.3074	3.6878
1231.8	0.901301	1.3520	1.044	1.0443	12.5319	0.3076	3.6903
1232	0.901435	1.3522	1.044	1.0443	12.5319	0.3078	3.6927
1232.2	0.90157	1.3524	1.044	1.0443	12.5319	0.3080	3.6951
1232.4	0.901704	1.3526	1.044	1.0443	12.5319	0.3082	3.6975
1232.6	0.901838	1.3528	1.044	1.0443	12.5319	0.3084	3.6999
1232.8	0.901972	1.3530	1.044	1.0443	12.5319	0.3086	3.7023
1233	0.902105	1.3532	1.044	1.0443	12.5319	0.3088	3.7048
1233.2	0.902239	1.3534	1.044	1.0443	12.5319	0.3090	3.7072
1233.4	0.902372	1.3536	1.044	1.0443	12.5319	0.3092	3.7096
1233.6	0.902506	1.3538	1.044	1.0443	12.5319	0.3094	3.7120
1233.8	0.902639	1.3540	1.044	1.0443	12.5319	0.3096	3.7144
1234	0.902772	1.3542	1.044	1.0443	12.5319	0.3098	3.7167
1234.2	0.902904	1.3544	1.044	1.0443	12.5319	0.3100	3.7191
1234.4	0.903037	1.3546	1.044	1.0443	12.5319	0.3102	3.7215
1234.6	0.90317	1.3548	1.044	1.0443	12.5319	0.3104	3.7239
1234.8	0.903302	1.3550	1.044	1.0443	12.5319	0.3106	3.7263
1235	0.903434	1.3552	1.044	1.0443	12.5319	0.3108	3.7287
1235.2	0.903566	1.3553	1.044	1.0443	12.5319	0.3110	3.7311
1235.4	0.903698	1.3555	1.044	1.0443	12.5319	0.3112	3.7334
1235.6	0.90383	1.3557	1.044	1.0443	12.5319	0.3114	3.7358
1235.8	0.903961	1.3559	1.044	1.0443	12.5319	0.3116	3.7382
1236	0.904093	1.3561	1.044	1.0443	12.5319	0.3118	3.7405
1236.2	0.904224	1.3563	1.044	1.0443	12.5319	0.3120	3.7429
1236.4	0.904355	1.3565	1.044	1.0443	12.5319	0.3122	3.7453
1236.6	0.904486	1.3567	1.044	1.0443	12.5319	0.3124	3.7476
1236.8	0.904617	1.3569	1.044	1.0443	12.5319	0.3126	3.7500
1237	0.904748	1.3571	1.044	1.0443	12.5319	0.3128	3.7523
1237.2	0.904878	1.3573	1.044	1.0443	12.5319	0.3130	3.7547
1237.4	0.905009	1.3575	1.044	1.0443	12.5319	0.3132	3.7570
1237.6	0.905139	1.3577	1.044	1.0443	12.5319	0.3134	3.7594
1237.8	0.905269	1.3579	1.044	1.0443	12.5319	0.3136	3.7617
1238	0.905399	1.3581	1.044	1.0443	12.5319	0.3138	3.7641
1238.2	0.905529	1.3583	1.044	1.0443	12.5319	0.3140	3.7664
1238.4	0.905658	1.3585	1.044	1.0443	12.5319	0.3142	3.7687
1238.6	0.905788	1.3587	1.044	1.0443	12.5319	0.3144	3.7711
1238.8	0.905917	1.3589	1.044	1.0443	12.5319	0.3145	3.7734
1239	0.906047	1.3591	1.044	1.0443	12.5319	0.3147	3.7757
1239.2	0.906176	1.3593	1.044	1.0443	12.5319	0.3149	3.7781

1239.4	0.906305	1.3595	1.044	1.0443	12.5319	0.3151	3.7804
1239.6	0.906434	1.3597	1.044	1.0443	12.5319	0.3153	3.7827
1239.8	0.906562	1.3598	1.044	1.0443	12.5319	0.3155	3.7850
1240	0.906691	1.3600	1.044	1.0443	12.5319	0.3157	3.7873
1240.2	0.906819	1.3602	1.044	1.0443	12.5319	0.3159	3.7896
1240.4	0.906948	1.3604	1.044	1.0443	12.5319	0.3161	3.7920
1240.6	0.907076	1.3606	1.044	1.0443	12.5319	0.3163	3.7943
1240.8	0.907204	1.3608	1.044	1.0443	12.5319	0.3165	3.7966
1241	0.907332	1.3610	1.044	1.0443	12.5319	0.3167	3.7989
1241.2	0.90746	1.3612	1.044	1.0443	12.5319	0.3169	3.8012
1241.4	0.907587	1.3614	1.044	1.0443	12.5319	0.3171	3.8035
1241.6	0.907715	1.3616	1.044	1.0443	12.5319	0.3172	3.8058
1241.8	0.907842	1.3618	1.044	1.0443	12.5319	0.3174	3.8081
1242	0.907969	1.3620	1.044	1.0443	12.5319	0.3176	3.8104
1242.2	0.908096	1.3621	1.044	1.0443	12.5319	0.3178	3.8126
1242.4	0.908223	1.3623	1.044	1.0443	12.5319	0.3180	3.8149
1242.6	0.90835	1.3625	1.044	1.0443	12.5319	0.3182	3.8172
1242.8	0.908477	1.3627	1.044	1.0443	12.5319	0.3184	3.8195
1243	0.908604	1.3629	1.044	1.0443	12.5319	0.3186	3.8218
1243.2	0.90873	1.3631	1.044	1.0443	12.5319	0.3188	3.8241
1243.4	0.908856	1.3633	1.044	1.0443	12.5319	0.3190	3.8263
1243.6	0.908982	1.3635	1.044	1.0443	12.5319	0.3191	3.8286
1243.8	0.909109	1.3637	1.044	1.0443	12.5319	0.3193	3.8309
1244	0.909234	1.3639	1.044	1.0443	12.5319	0.3195	3.8331
1244.2	0.90936	1.3640	1.044	1.0443	12.5319	0.3197	3.8354
1244.4	0.909486	1.3642	1.044	1.0443	12.5319	0.3199	3.8377
1244.6	0.909611	1.3644	1.044	1.0443	12.5319	0.3201	3.8399
1244.8	0.909737	1.3646	1.044	1.0443	12.5319	0.3203	3.8422
1245	0.909862	1.3648	1.044	1.0443	12.5319	0.3205	3.8444
1245.2	0.909987	1.3650	1.044	1.0443	12.5319	0.3207	3.8467
1245.4	0.910112	1.3652	1.044	1.0443	12.5319	0.3208	3.8490
1245.6	0.910237	1.3654	1.044	1.0443	12.5319	0.3210	3.8512
1245.8	0.910362	1.3655	1.044	1.0443	12.5319	0.3212	3.8534
1246	0.910487	1.3657	1.044	1.0443	12.5319	0.3214	3.8557
1246.2	0.910611	1.3659	1.044	1.0443	12.5319	0.3216	3.8579
1246.4	0.910736	1.3661	1.044	1.0443	12.5319	0.3218	3.8602
1246.6	0.91086	1.3663	1.044	1.0443	12.5319	0.3220	3.8624
1246.8	0.910984	1.3665	1.044	1.0443	12.5319	0.3221	3.8647
1247	0.911108	1.3667	1.044	1.0443	12.5319	0.3223	3.8669
1247.2	0.911232	1.3668	1.044	1.0443	12.5319	0.3225	3.8691
1247.4	0.911356	1.3670	1.044	1.0443	12.5319	0.3227	3.8713
1247.6	0.911479	1.3672	1.044	1.0443	12.5319	0.3229	3.8736
1247.8	0.911603	1.3674	1.044	1.0443	12.5319	0.3231	3.8758
1248	0.911726	1.3676	1.044	1.0443	12.5319	0.3233	3.8780
1248.2	0.91185	1.3678	1.044	1.0443	12.5319	0.3234	3.8802
1248.4	0.911973	1.3680	1.044	1.0443	12.5319	0.3236	3.8825
1248.6	0.912096	1.3681	1.044	1.0443	12.5319	0.3238	3.8847

1248.8	0.912219	1.3683	1.044	1.0443	12.5319	0.3240	3.8869
1249	0.912342	1.3685	1.044	1.0443	12.5319	0.3242	3.8891
1249.2	0.912464	1.3687	1.044	1.0443	12.5319	0.3244	3.8913
1249.4	0.912587	1.3689	1.044	1.0443	12.5319	0.3246	3.8935
1249.6	0.912709	1.3691	1.044	1.0443	12.5319	0.3247	3.8957
1249.8	0.912832	1.3692	1.044	1.0443	12.5319	0.3249	3.8979
1250	0.912954	1.3694	1.044	1.0443	12.5319	0.3251	3.9001
1250.2	0.913076	1.3696	1.044	1.0443	12.5319	0.3253	3.9023
1250.4	0.913198	1.3698	1.044	1.0443	12.5319	0.3255	3.9045
1250.6	0.91332	1.3700	1.044	1.0443	12.5319	0.3257	3.9067
1250.8	0.913442	1.3702	1.044	1.0443	12.5319	0.3258	3.9089
1251	0.913563	1.3703	1.044	1.0443	12.5319	0.3260	3.9111
1251.2	0.913685	1.3705	1.044	1.0443	12.5319	0.3262	3.9133
1251.4	0.913806	1.3707	1.044	1.0443	12.5319	0.3264	3.9155
1251.6	0.913928	1.3709	1.044	1.0443	12.5319	0.3266	3.9177
1251.8	0.914049	1.3711	1.044	1.0443	12.5319	0.3267	3.9198
1252	0.91417	1.3713	1.044	1.0443	12.5319	0.3269	3.9220
1252.2	0.914291	1.3714	1.044	1.0443	12.5319	0.3271	3.9242
1252.4	0.914412	1.3716	1.044	1.0443	12.5319	0.3273	3.9264
1252.6	0.914533	1.3718	1.044	1.0443	12.5319	0.3275	3.9286
1252.8	0.914653	1.3720	1.044	1.0443	12.5319	0.3277	3.9307
1253	0.914774	1.3722	1.044	1.0443	12.5319	0.3278	3.9329
1253.2	0.914894	1.3723	1.044	1.0443	12.5319	0.3280	3.9351
1253.4	0.915014	1.3725	1.044	1.0443	12.5319	0.3282	3.9372
1253.6	0.915135	1.3727	1.044	1.0443	12.5319	0.3284	3.9394
1253.8	0.915255	1.3729	1.044	1.0443	12.5319	0.3286	3.9416
1254	0.915375	1.3731	1.044	1.0443	12.5319	0.3287	3.9437
1254.2	0.915494	1.3732	1.044	1.0443	12.5319	0.3289	3.9459
1254.4	0.915614	1.3734	1.044	1.0443	12.5319	0.3291	3.9480
1254.6	0.915734	1.3736	1.044	1.0443	12.5319	0.3293	3.9502
1254.8	0.915853	1.3738	1.044	1.0443	12.5319	0.3295	3.9523
1255	0.915973	1.3740	1.044	1.0443	12.5319	0.3296	3.9545
1255.2	0.916092	1.3741	1.044	1.0443	12.5319	0.3298	3.9566
1255.4	0.916211	1.3743	1.044	1.0443	12.5319	0.3300	3.9588
1255.6	0.91633	1.3745	1.044	1.0443	12.5319	0.3302	3.9609
1255.8	0.916449	1.3747	1.044	1.0443	12.5319	0.3303	3.9631
1256	0.916568	1.3749	1.044	1.0443	12.5319	0.3305	3.9652
1256.2	0.916687	1.3750	1.044	1.0443	12.5319	0.3307	3.9673
1256.4	0.916805	1.3752	1.044	1.0443	12.5319	0.3309	3.9695
1256.6	0.916924	1.3754	1.044	1.0443	12.5319	0.3311	3.9716
1256.8	0.917042	1.3756	1.044	1.0443	12.5319	0.3312	3.9738
1257	0.917161	1.3757	1.044	1.0443	12.5319	0.3314	3.9759
1257.2	0.917279	1.3759	1.044	1.0443	12.5319	0.3316	3.9780
1257.4	0.917397	1.3761	1.044	1.0443	12.5319	0.3318	3.9801
1257.6	0.917515	1.3763	1.044	1.0443	12.5319	0.3319	3.9823
1257.8	0.917633	1.3764	1.044	1.0443	12.5319	0.3321	3.9844
1258	0.917751	1.3766	1.044	1.0443	12.5319	0.3323	3.9865

1258.2	0.917869	1.3768	1.044	1.0443	12.5319	0.3325	3.9886
1258.4	0.917986	1.3770	1.044	1.0443	12.5319	0.3327	3.9907
1258.6	0.918104	1.3772	1.044	1.0443	12.5319	0.3328	3.9929
1258.8	0.918221	1.3773	1.044	1.0443	12.5319	0.3330	3.9950
1259	0.918338	1.3775	1.044	1.0443	12.5319	0.3332	3.9971
1259.2	0.918455	1.3777	1.044	1.0443	12.5319	0.3334	3.9992
1259.4	0.918573	1.3779	1.044	1.0443	12.5319	0.3335	4.0013
1259.6	0.91869	1.3780	1.044	1.0443	12.5319	0.3337	4.0034
1259.8	0.918806	1.3782	1.044	1.0443	12.5319	0.3339	4.0055
1260	0.918923	1.3784	1.044	1.0443	12.5319	0.3341	4.0076
1260.2	0.91904	1.3786	1.044	1.0443	12.5319	0.3342	4.0097
1260.4	0.919156	1.3787	1.044	1.0443	12.5319	0.3344	4.0118
1260.6	0.919273	1.3789	1.044	1.0443	12.5319	0.3346	4.0139
1260.8	0.919389	1.3791	1.044	1.0443	12.5319	0.3348	4.0160
1261	0.919506	1.3793	1.044	1.0443	12.5319	0.3349	4.0181
1261.2	0.919622	1.3794	1.044	1.0443	12.5319	0.3351	4.0202
1261.4	0.919738	1.3796	1.044	1.0443	12.5319	0.3353	4.0223
1261.6	0.919854	1.3798	1.044	1.0443	12.5319	0.3355	4.0244
1261.8	0.91997	1.3800	1.044	1.0443	12.5319	0.3356	4.0265
1262	0.920085	1.3801	1.044	1.0443	12.5319	0.3358	4.0286
1262.2	0.920201	1.3803	1.044	1.0443	12.5319	0.3360	4.0306
1262.4	0.920317	1.3805	1.044	1.0443	12.5319	0.3361	4.0327
1262.6	0.920432	1.3806	1.044	1.0443	12.5319	0.3363	4.0348
1262.8	0.920547	1.3808	1.044	1.0443	12.5319	0.3365	4.0369
1263	0.920663	1.3810	1.044	1.0443	12.5319	0.3367	4.0389
1263.2	0.920778	1.3812	1.044	1.0443	12.5319	0.3368	4.0410
1263.4	0.920893	1.3813	1.044	1.0443	12.5319	0.3370	4.0431
1263.6	0.921008	1.3815	1.044	1.0443	12.5319	0.3372	4.0452
1263.8	0.921123	1.3817	1.044	1.0443	12.5319	0.3374	4.0472
1264	0.921238	1.3819	1.044	1.0443	12.5319	0.3375	4.0493
1264.2	0.921352	1.3820	1.044	1.0443	12.5319	0.3377	4.0514
1264.4	0.921467	1.3822	1.044	1.0443	12.5319	0.3379	4.0534
1264.6	0.921581	1.3824	1.044	1.0443	12.5319	0.3380	4.0555
1264.8	0.921696	1.3825	1.044	1.0443	12.5319	0.3382	4.0576
1265	0.92181	1.3827	1.044	1.0443	12.5319	0.3384	4.0596
1265.2	0.921924	1.3829	1.044	1.0443	12.5319	0.3386	4.0617
1265.4	0.922039	1.3831	1.044	1.0443	12.5319	0.3387	4.0637
1265.6	0.922153	1.3832	1.044	1.0443	12.5319	0.3389	4.0658
1265.8	0.922266	1.3834	1.044	1.0443	12.5319	0.3391	4.0678
1266	0.92238	1.3836	1.044	1.0443	12.5319	0.3392	4.0699
1266.2	0.922494	1.3837	1.044	1.0443	12.5319	0.3394	4.0719
1266.4	0.922608	1.3839	1.044	1.0443	12.5319	0.3396	4.0740
1266.6	0.922721	1.3841	1.044	1.0443	12.5319	0.3398	4.0760
1266.8	0.922835	1.3843	1.044	1.0443	12.5319	0.3399	4.0781
1267	0.922948	1.3844	1.044	1.0443	12.5319	0.3401	4.0801
1267.2	0.923061	1.3846	1.044	1.0443	12.5319	0.3403	4.0821
1267.4	0.923175	1.3848	1.044	1.0443	12.5319	0.3404	4.0842

1267.6	0.923288	1.3849	1.044	1.0443	12.5319	0.3406	4.0862
1267.8	0.923401	1.3851	1.044	1.0443	12.5319	0.3408	4.0883
1268	0.923514	1.3853	1.044	1.0443	12.5319	0.3409	4.0903
1268.2	0.923626	1.3854	1.044	1.0443	12.5319	0.3411	4.0923
1268.4	0.923739	1.3856	1.044	1.0443	12.5319	0.3413	4.0943
1268.6	0.923852	1.3858	1.044	1.0443	12.5319	0.3414	4.0964
1268.8	0.923964	1.3859	1.044	1.0443	12.5319	0.3416	4.0984
1269	0.924077	1.3861	1.044	1.0443	12.5319	0.3418	4.1004
1269.2	0.924189	1.3863	1.044	1.0443	12.5319	0.3420	4.1024
1269.4	0.924301	1.3865	1.044	1.0443	12.5319	0.3421	4.1045
1269.6	0.924414	1.3866	1.044	1.0443	12.5319	0.3423	4.1065
1269.8	0.924526	1.3868	1.044	1.0443	12.5319	0.3425	4.1085
1270	0.924638	1.3870	1.044	1.0443	12.5319	0.3426	4.1105
1270.2	0.92475	1.3871	1.044	1.0443	12.5319	0.3428	4.1125
1270.4	0.924861	1.3873	1.044	1.0443	12.5319	0.3430	4.1146
1270.6	0.924973	1.3875	1.044	1.0443	12.5319	0.3431	4.1166
1270.8	0.925085	1.3876	1.044	1.0443	12.5319	0.3433	4.1186
1271	0.925196	1.3878	1.044	1.0443	12.5319	0.3435	4.1206
1271.2	0.925308	1.3880	1.044	1.0443	12.5319	0.3436	4.1226
1271.4	0.925419	1.3881	1.044	1.0443	12.5319	0.3438	4.1246
1271.6	0.925531	1.3883	1.044	1.0443	12.5319	0.3440	4.1266
1271.8	0.925642	1.3885	1.044	1.0443	12.5319	0.3441	4.1286
1272	0.925753	1.3886	1.044	1.0443	12.5319	0.3443	4.1306
1272.2	0.925864	1.3888	1.044	1.0443	12.5319	0.3445	4.1326
1272.4	0.925975	1.3890	1.044	1.0443	12.5319	0.3446	4.1346
1272.6	0.926086	1.3891	1.044	1.0443	12.5319	0.3448	4.1366
1272.8	0.926197	1.3893	1.044	1.0443	12.5319	0.3450	4.1386
1273	0.926307	1.3895	1.044	1.0443	12.5319	0.3451	4.1406
1273.2	0.926418	1.3896	1.044	1.0443	12.5319	0.3453	4.1426
1273.4	0.926528	1.3898	1.044	1.0443	12.5319	0.3455	4.1446
1273.6	0.926639	1.3900	1.044	1.0443	12.5319	0.3456	4.1466
1273.8	0.926749	1.3901	1.044	1.0443	12.5319	0.3458	4.1485
1274	0.926859	1.3903	1.044	1.0443	12.5319	0.3460	4.1505
1274.2	0.92697	1.3905	1.044	1.0443	12.5319	0.3461	4.1525
1274.4	0.92708	1.3906	1.044	1.0443	12.5319	0.3463	4.1545
1274.6	0.92719	1.3908	1.044	1.0443	12.5319	0.3465	4.1565
1274.8	0.9273	1.3909	1.044	1.0443	12.5319	0.3466	4.1585
1275	0.927409	1.3911	1.044	1.0443	12.5319	0.3468	4.1604
1275.2	0.927519	1.3913	1.044	1.0443	12.5319	0.3470	4.1624
1275.4	0.927629	1.3914	1.044	1.0443	12.5319	0.3471	4.1644
1275.6	0.927738	1.3916	1.044	1.0443	12.5319	0.3473	4.1664
1275.8	0.927848	1.3918	1.044	1.0443	12.5319	0.3474	4.1683
1276	0.927957	1.3919	1.044	1.0443	12.5319	0.3476	4.1703
1276.2	0.928067	1.3921	1.044	1.0443	12.5319	0.3478	4.1723
1276.4	0.928176	1.3923	1.044	1.0443	12.5319	0.3479	4.1742
1276.6	0.928285	1.3924	1.044	1.0443	12.5319	0.3481	4.1762
1276.8	0.928394	1.3926	1.044	1.0443	12.5319	0.3483	4.1782

1277	0.928503	1.3928	1.044	1.0443	12.5319	0.3484	4.1801
1277.2	0.928612	1.3929	1.044	1.0443	12.5319	0.3486	4.1821
1277.4	0.928721	1.3931	1.044	1.0443	12.5319	0.3488	4.1841
1277.6	0.92883	1.3932	1.044	1.0443	12.5319	0.3489	4.1860
1277.8	0.928939	1.3934	1.044	1.0443	12.5319	0.3491	4.1880
1278	0.929047	1.3936	1.044	1.0443	12.5319	0.3492	4.1899
1278.2	0.929156	1.3937	1.044	1.0443	12.5319	0.3494	4.1919
1278.4	0.929264	1.3939	1.044	1.0443	12.5319	0.3496	4.1938
1278.6	0.929372	1.3941	1.044	1.0443	12.5319	0.3497	4.1958
1278.8	0.929481	1.3942	1.044	1.0443	12.5319	0.3499	4.1977
1279	0.929589	1.3944	1.044	1.0443	12.5319	0.3501	4.1997
1279.2	0.929697	1.3945	1.044	1.0443	12.5319	0.3502	4.2016
1279.4	0.929805	1.3947	1.044	1.0443	12.5319	0.3504	4.2036
1279.6	0.929913	1.3949	1.044	1.0443	12.5319	0.3505	4.2055
1279.8	0.930021	1.3950	1.044	1.0443	12.5319	0.3507	4.2075
1280	0.930129	1.3952	1.044	1.0443	12.5319	0.3509	4.2094
1280.2	0.930236	1.3954	1.044	1.0443	12.5319	0.3510	4.2113
1280.4	0.930344	1.3955	1.044	1.0443	12.5319	0.3512	4.2133
1280.6	0.930452	1.3957	1.044	1.0443	12.5319	0.3513	4.2152
1280.8	0.930559	1.3958	1.044	1.0443	12.5319	0.3515	4.2172
1281	0.930667	1.3960	1.044	1.0443	12.5319	0.3517	4.2191
1281.2	0.930774	1.3962	1.044	1.0443	12.5319	0.3518	4.2210
1281.4	0.930881	1.3963	1.044	1.0443	12.5319	0.3520	4.2230
1281.6	0.930988	1.3965	1.044	1.0443	12.5319	0.3522	4.2249
1281.8	0.931095	1.3966	1.044	1.0443	12.5319	0.3523	4.2268
1282	0.931202	1.3968	1.044	1.0443	12.5319	0.3525	4.2287
1282.2	0.931309	1.3970	1.044	1.0443	12.5319	0.3526	4.2307
1282.4	0.931416	1.3971	1.044	1.0443	12.5319	0.3528	4.2326
1282.6	0.931523	1.3973	1.044	1.0443	12.5319	0.3530	4.2345
1282.8	0.93163	1.3974	1.044	1.0443	12.5319	0.3531	4.2364
1283	0.931736	1.3976	1.044	1.0443	12.5319	0.3533	4.2384
1283.2	0.931843	1.3978	1.044	1.0443	12.5319	0.3534	4.2403
1283.4	0.931949	1.3979	1.044	1.0443	12.5319	0.3536	4.2422
1283.6	0.932056	1.3981	1.044	1.0443	12.5319	0.3538	4.2441
1283.8	0.932162	1.3982	1.044	1.0443	12.5319	0.3539	4.2460
1284	0.932268	1.3984	1.044	1.0443	12.5319	0.3541	4.2479
1284.2	0.932375	1.3986	1.044	1.0443	12.5319	0.3542	4.2498
1284.4	0.932481	1.3987	1.044	1.0443	12.5319	0.3544	4.2518
1284.6	0.932587	1.3989	1.044	1.0443	12.5319	0.3546	4.2537
1284.8	0.932693	1.3990	1.044	1.0443	12.5319	0.3547	4.2556
1285	0.932799	1.3992	1.044	1.0443	12.5319	0.3549	4.2575
1285.2	0.932904	1.3994	1.044	1.0443	12.5319	0.3550	4.2594
1285.4	0.93301	1.3995	1.044	1.0443	12.5319	0.3552	4.2613
1285.6	0.933116	1.3997	1.044	1.0443	12.5319	0.3553	4.2632
1285.8	0.933221	1.3998	1.044	1.0443	12.5319	0.3555	4.2651
1286	0.933327	1.4000	1.044	1.0443	12.5319	0.3557	4.2670
1286.2	0.933432	1.4001	1.044	1.0443	12.5319	0.3558	4.2689

1286.4	0.933538	1.4003	1.044	1.0443	12.5319	0.3560	4.2708
1286.6	0.933643	1.4005	1.044	1.0443	12.5319	0.3561	4.2727
1286.8	0.933748	1.4006	1.044	1.0443	12.5319	0.3563	4.2746
1287	0.933853	1.4008	1.044	1.0443	12.5319	0.3565	4.2765
1287.2	0.933958	1.4009	1.044	1.0443	12.5319	0.3566	4.2784
1287.4	0.934063	1.4011	1.044	1.0443	12.5319	0.3568	4.2802
1287.6	0.934168	1.4013	1.044	1.0443	12.5319	0.3569	4.2821
1287.8	0.934273	1.4014	1.044	1.0443	12.5319	0.3571	4.2840
1288	0.934378	1.4016	1.044	1.0443	12.5319	0.3572	4.2859
1288.2	0.934483	1.4017	1.044	1.0443	12.5319	0.3574	4.2878
1288.4	0.934587	1.4019	1.044	1.0443	12.5319	0.3576	4.2897
1288.6	0.934692	1.4020	1.044	1.0443	12.5319	0.3577	4.2916
1288.8	0.934796	1.4022	1.044	1.0443	12.5319	0.3579	4.2934
1289	0.934901	1.4024	1.044	1.0443	12.5319	0.3580	4.2953
1289.2	0.935005	1.4025	1.044	1.0443	12.5319	0.3582	4.2972
1289.4	0.935109	1.4027	1.044	1.0443	12.5319	0.3583	4.2991
1289.6	0.935213	1.4028	1.044	1.0443	12.5319	0.3585	4.3010
1289.8	0.935318	1.4030	1.044	1.0443	12.5319	0.3586	4.3028
1290	0.935422	1.4031	1.044	1.0443	12.5319	0.3588	4.3047
1290.2	0.935526	1.4033	1.044	1.0443	12.5319	0.3590	4.3066
1290.4	0.935629	1.4034	1.044	1.0443	12.5319	0.3591	4.3085
1290.6	0.935733	1.4036	1.044	1.0443	12.5319	0.3593	4.3103
1290.8	0.935837	1.4038	1.044	1.0443	12.5319	0.3594	4.3122
1291	0.935941	1.4039	1.044	1.0443	12.5319	0.3596	4.3141
1291.2	0.936044	1.4041	1.044	1.0443	12.5319	0.3597	4.3159
1291.4	0.936148	1.4042	1.044	1.0443	12.5319	0.3599	4.3178
1291.6	0.936251	1.4044	1.044	1.0443	12.5319	0.3600	4.3197
1291.8	0.936355	1.4045	1.044	1.0443	12.5319	0.3602	4.3215
1292	0.936458	1.4047	1.044	1.0443	12.5319	0.3604	4.3234
1292.2	0.936562	1.4048	1.044	1.0443	12.5319	0.3605	4.3252
1292.4	0.936665	1.4050	1.044	1.0443	12.5319	0.3607	4.3271
1292.6	0.936768	1.4052	1.044	1.0443	12.5319	0.3608	4.3289
1292.8	0.936871	1.4053	1.044	1.0443	12.5319	0.3610	4.3308
1293	0.936974	1.4055	1.044	1.0443	12.5319	0.3611	4.3327
1293.2	0.937077	1.4056	1.044	1.0443	12.5319	0.3613	4.3345
1293.4	0.93718	1.4058	1.044	1.0443	12.5319	0.3614	4.3364
1293.6	0.937283	1.4059	1.044	1.0443	12.5319	0.3616	4.3382
1293.8	0.937385	1.4061	1.044	1.0443	12.5319	0.3617	4.3401
1294	0.937488	1.4062	1.044	1.0443	12.5319	0.3619	4.3419
1294.2	0.937591	1.4064	1.044	1.0443	12.5319	0.3621	4.3438
1294.4	0.937693	1.4065	1.044	1.0443	12.5319	0.3622	4.3456
1294.6	0.937796	1.4067	1.044	1.0443	12.5319	0.3624	4.3475
1294.8	0.937898	1.4068	1.044	1.0443	12.5319	0.3625	4.3493
1295	0.938	1.4070	1.044	1.0443	12.5319	0.3627	4.3511
1295.2	0.938103	1.4072	1.044	1.0443	12.5319	0.3628	4.3530
1295.4	0.938205	1.4073	1.044	1.0443	12.5319	0.3630	4.3548
1295.6	0.938307	1.4075	1.044	1.0443	12.5319	0.3631	4.3567

1295.8	0.938409	1.4076	1.044	1.0443	12.5319	0.3633	4.3585
1296	0.938511	1.4078	1.044	1.0443	12.5319	0.3634	4.3603
1296.2	0.938613	1.4079	1.044	1.0443	12.5319	0.3636	4.3622
1296.4	0.938715	1.4081	1.044	1.0443	12.5319	0.3637	4.3640
1296.6	0.938817	1.4082	1.044	1.0443	12.5319	0.3639	4.3658
1296.8	0.938918	1.4084	1.044	1.0443	12.5319	0.3640	4.3677
1297	0.93902	1.4085	1.044	1.0443	12.5319	0.3642	4.3695
1297.2	0.939122	1.4087	1.044	1.0443	12.5319	0.3644	4.3713
1297.4	0.939223	1.4088	1.044	1.0443	12.5319	0.3645	4.3732
1297.6	0.939325	1.4090	1.044	1.0443	12.5319	0.3647	4.3750
1297.8	0.939426	1.4091	1.044	1.0443	12.5319	0.3648	4.3768
1298	0.939527	1.4093	1.044	1.0443	12.5319	0.3650	4.3786
1298.2	0.939629	1.4094	1.044	1.0443	12.5319	0.3651	4.3805
1298.4	0.93973	1.4096	1.044	1.0443	12.5319	0.3653	4.3823
1298.6	0.939831	1.4097	1.044	1.0443	12.5319	0.3654	4.3841
1298.8	0.939932	1.4099	1.044	1.0443	12.5319	0.3656	4.3859
1299	0.940033	1.4100	1.044	1.0443	12.5319	0.3657	4.3877
1299.2	0.940134	1.4102	1.044	1.0443	12.5319	0.3659	4.3896
1299.4	0.940235	1.4104	1.044	1.0443	12.5319	0.3660	4.3914
1299.6	0.940336	1.4105	1.044	1.0443	12.5319	0.3662	4.3932
1299.8	0.940436	1.4107	1.044	1.0443	12.5319	0.3663	4.3950
1300	0.940537	1.4108	1.044	1.0443	12.5319	0.3665	4.3968
1300.2	0.940638	1.4110	1.044	1.0443	12.5319	0.3666	4.3986
1300.4	0.940738	1.4111	1.044	1.0443	12.5319	0.3668	4.4004
1300.6	0.940839	1.4113	1.044	1.0443	12.5319	0.3669	4.4022
1300.8	0.940939	1.4114	1.044	1.0443	12.5319	0.3671	4.4041
1301	0.941039	1.4116	1.044	1.0443	12.5319	0.3672	4.4059
1301.2	0.94114	1.4117	1.044	1.0443	12.5319	0.3674	4.4077
1301.4	0.94124	1.4119	1.044	1.0443	12.5319	0.3675	4.4095
1301.6	0.94134	1.4120	1.044	1.0443	12.5319	0.3677	4.4113
1301.8	0.94144	1.4122	1.044	1.0443	12.5319	0.3678	4.4131
1302	0.94154	1.4123	1.044	1.0443	12.5319	0.3680	4.4149
1302.2	0.94164	1.4125	1.044	1.0443	12.5319	0.3681	4.4167
1302.4	0.94174	1.4126	1.044	1.0443	12.5319	0.3683	4.4185
1302.6	0.94184	1.4128	1.044	1.0443	12.5319	0.3684	4.4203
1302.8	0.94194	1.4129	1.044	1.0443	12.5319	0.3686	4.4221
1303	0.94204	1.4131	1.044	1.0443	12.5319	0.3687	4.4239
1303.2	0.942139	1.4132	1.044	1.0443	12.5319	0.3689	4.4257
1303.4	0.942239	1.4134	1.044	1.0443	12.5319	0.3690	4.4275
1303.6	0.942339	1.4135	1.044	1.0443	12.5319	0.3692	4.4293
1303.8	0.942438	1.4137	1.044	1.0443	12.5319	0.3693	4.4310
1304	0.942537	1.4138	1.044	1.0443	12.5319	0.3695	4.4328
1304.2	0.942637	1.4140	1.044	1.0443	12.5319	0.3696	4.4346
1304.4	0.942736	1.4141	1.044	1.0443	12.5319	0.3698	4.4364
1304.6	0.942835	1.4143	1.044	1.0443	12.5319	0.3699	4.4382
1304.8	0.942935	1.4144	1.044	1.0443	12.5319	0.3701	4.4400
1305	0.943034	1.4146	1.044	1.0443	12.5319	0.3702	4.4418

1305.2	0.943133	1.4147	1.044	1.0443	12.5319	0.3704	4.4436
1305.4	0.943232	1.4148	1.044	1.0443	12.5319	0.3705	4.4453
1305.6	0.943331	1.4150	1.044	1.0443	12.5319	0.3707	4.4471
1305.8	0.94343	1.4151	1.044	1.0443	12.5319	0.3708	4.4489
1306	0.943528	1.4153	1.044	1.0443	12.5319	0.3710	4.4507
1306.2	0.943627	1.4154	1.044	1.0443	12.5319	0.3711	4.4525
1306.4	0.943726	1.4156	1.044	1.0443	12.5319	0.3713	4.4542
1306.6	0.943825	1.4157	1.044	1.0443	12.5319	0.3714	4.4560
1306.8	0.943923	1.4159	1.044	1.0443	12.5319	0.3716	4.4578
1307	0.944022	1.4160	1.044	1.0443	12.5319	0.3717	4.4596
1307.2	0.94412	1.4162	1.044	1.0443	12.5319	0.3719	4.4613
1307.4	0.944219	1.4163	1.044	1.0443	12.5319	0.3720	4.4631
1307.6	0.944317	1.4165	1.044	1.0443	12.5319	0.3721	4.4649
1307.8	0.944415	1.4166	1.044	1.0443	12.5319	0.3723	4.4666
1308	0.944513	1.4168	1.044	1.0443	12.5319	0.3724	4.4684
1308.2	0.944612	1.4169	1.044	1.0443	12.5319	0.3726	4.4702
1308.4	0.94471	1.4171	1.044	1.0443	12.5319	0.3727	4.4719
1308.6	0.944808	1.4172	1.044	1.0443	12.5319	0.3729	4.4737
1308.8	0.944906	1.4174	1.044	1.0443	12.5319	0.3730	4.4755
1309	0.945004	1.4175	1.044	1.0443	12.5319	0.3732	4.4772
1309.2	0.945101	1.4177	1.044	1.0443	12.5319	0.3733	4.4790
1309.4	0.945199	1.4178	1.044	1.0443	12.5319	0.3735	4.4808
1309.6	0.945297	1.4179	1.044	1.0443	12.5319	0.3736	4.4825
1309.8	0.945395	1.4181	1.044	1.0443	12.5319	0.3738	4.4843
1310	0.945492	1.4182	1.044	1.0443	12.5319	0.3739	4.4860
1310.2	0.94559	1.4184	1.044	1.0443	12.5319	0.3741	4.4878
1310.4	0.945687	1.4185	1.044	1.0443	12.5319	0.3742	4.4896
1310.6	0.945785	1.4187	1.044	1.0443	12.5319	0.3743	4.4913
1310.8	0.945882	1.4188	1.044	1.0443	12.5319	0.3745	4.4931
1311	0.94598	1.4190	1.044	1.0443	12.5319	0.3746	4.4948
1311.2	0.946077	1.4191	1.044	1.0443	12.5319	0.3748	4.4966
1311.4	0.946174	1.4193	1.044	1.0443	12.5319	0.3749	4.4983
1311.6	0.946271	1.4194	1.044	1.0443	12.5319	0.3751	4.5001
1311.8	0.946369	1.4196	1.044	1.0443	12.5319	0.3752	4.5018
1312	0.946466	1.4197	1.044	1.0443	12.5319	0.3754	4.5036
1312.2	0.946563	1.4198	1.044	1.0443	12.5319	0.3755	4.5053
1312.4	0.94666	1.4200	1.044	1.0443	12.5319	0.3757	4.5071
1312.6	0.946756	1.4201	1.044	1.0443	12.5319	0.3758	4.5088
1312.8	0.946853	1.4203	1.044	1.0443	12.5319	0.3760	4.5105
1313	0.94695	1.4204	1.044	1.0443	12.5319	0.3761	4.5123
1313.2	0.947047	1.4206	1.044	1.0443	12.5319	0.3762	4.5140
1313.4	0.947143	1.4207	1.044	1.0443	12.5319	0.3764	4.5158
1313.6	0.94724	1.4209	1.044	1.0443	12.5319	0.3765	4.5175
1313.8	0.947337	1.4210	1.044	1.0443	12.5319	0.3767	4.5192
1314	0.947433	1.4211	1.044	1.0443	12.5319	0.3768	4.5210
1314.2	0.94753	1.4213	1.044	1.0443	12.5319	0.3770	4.5227
1314.4	0.947626	1.4214	1.044	1.0443	12.5319	0.3771	4.5245

1314.6	0.947722	1.4216	1.044	1.0443	12.5319	0.3773	4.5262
1314.8	0.947819	1.4217	1.044	1.0443	12.5319	0.3774	4.5279
1315	0.947915	1.4219	1.044	1.0443	12.5319	0.3775	4.5297
1315.2	0.948011	1.4220	1.044	1.0443	12.5319	0.3777	4.5314
1315.4	0.948107	1.4222	1.044	1.0443	12.5319	0.3778	4.5331
1315.6	0.948203	1.4223	1.044	1.0443	12.5319	0.3780	4.5348
1315.8	0.948299	1.4224	1.044	1.0443	12.5319	0.3781	4.5366
1316	0.948395	1.4226	1.044	1.0443	12.5319	0.3783	4.5383
1316.2	0.948491	1.4227	1.044	1.0443	12.5319	0.3784	4.5400
1316.4	0.948587	1.4229	1.044	1.0443	12.5319	0.3786	4.5418
1316.6	0.948682	1.4230	1.044	1.0443	12.5319	0.3787	4.5435
1316.8	0.948778	1.4232	1.044	1.0443	12.5319	0.3788	4.5452
1317	0.948874	1.4233	1.044	1.0443	12.5319	0.3790	4.5469
1317.2	0.948969	1.4235	1.044	1.0443	12.5319	0.3791	4.5486
1317.4	0.949065	1.4236	1.044	1.0443	12.5319	0.3793	4.5504
1317.6	0.949161	1.4237	1.044	1.0443	12.5319	0.3794	4.5521
1317.8	0.949256	1.4239	1.044	1.0443	12.5319	0.3796	4.5538
1318	0.949351	1.4240	1.044	1.0443	12.5319	0.3797	4.5555
1318.2	0.949447	1.4242	1.044	1.0443	12.5319	0.3798	4.5572
1318.4	0.949542	1.4243	1.044	1.0443	12.5319	0.3800	4.5590
1318.6	0.949637	1.4245	1.044	1.0443	12.5319	0.3801	4.5607
1318.8	0.949732	1.4246	1.044	1.0443	12.5319	0.3803	4.5624
1319	0.949828	1.4247	1.044	1.0443	12.5319	0.3804	4.5641
1319.2	0.949923	1.4249	1.044	1.0443	12.5319	0.3806	4.5658
1319.4	0.950018	1.4250	1.044	1.0443	12.5319	0.3807	4.5675
1319.6	0.950113	1.4252	1.044	1.0443	12.5319	0.3808	4.5692
1319.8	0.950208	1.4253	1.044	1.0443	12.5319	0.3810	4.5709
1320	0.950302	1.4255	1.044	1.0443	12.5319	0.3811	4.5726
1320.2	0.950397	1.4256	1.044	1.0443	12.5319	0.3813	4.5744
1320.4	0.950492	1.4257	1.044	1.0443	12.5319	0.3814	4.5761
1320.6	0.950587	1.4259	1.044	1.0443	12.5319	0.3816	4.5778
1320.8	0.950681	1.4260	1.044	1.0443	12.5319	0.3817	4.5795
1321	0.950776	1.4262	1.044	1.0443	12.5319	0.3818	4.5812
1321.2	0.95087	1.4263	1.044	1.0443	12.5319	0.3820	4.5829
1321.4	0.950965	1.4264	1.044	1.0443	12.5319	0.3821	4.5846
1321.6	0.951059	1.4266	1.044	1.0443	12.5319	0.3823	4.5863
1321.8	0.951154	1.4267	1.044	1.0443	12.5319	0.3824	4.5880
1322	0.951248	1.4269	1.044	1.0443	12.5319	0.3825	4.5897
1322.2	0.951342	1.4270	1.044	1.0443	12.5319	0.3827	4.5914
1322.4	0.951437	1.4272	1.044	1.0443	12.5319	0.3828	4.5931
1322.6	0.951531	1.4273	1.044	1.0443	12.5319	0.3830	4.5948
1322.8	0.951625	1.4274	1.044	1.0443	12.5319	0.3831	4.5965
1323	0.951719	1.4276	1.044	1.0443	12.5319	0.3832	4.5982
1323.2	0.951813	1.4277	1.044	1.0443	12.5319	0.3834	4.5998
1323.4	0.951907	1.4279	1.044	1.0443	12.5319	0.3835	4.6015
1323.6	0.952001	1.4280	1.044	1.0443	12.5319	0.3837	4.6032
1323.8	0.952095	1.4281	1.044	1.0443	12.5319	0.3838	4.6049

1324	0.952189	1.4283	1.044	1.0443	12.5319	0.3840	4.6066
1324.2	0.952282	1.4284	1.044	1.0443	12.5319	0.3841	4.6083
1324.4	0.952376	1.4286	1.044	1.0443	12.5319	0.3842	4.6100
1324.6	0.95247	1.4287	1.044	1.0443	12.5319	0.3844	4.6117
1324.8	0.952563	1.4288	1.044	1.0443	12.5319	0.3845	4.6134
1325	0.952657	1.4290	1.044	1.0443	12.5319	0.3847	4.6150
1325.2	0.95275	1.4291	1.044	1.0443	12.5319	0.3848	4.6167
1325.4	0.952844	1.4293	1.044	1.0443	12.5319	0.3849	4.6184
1325.6	0.952937	1.4294	1.044	1.0443	12.5319	0.3851	4.6201
1325.8	0.953031	1.4295	1.044	1.0443	12.5319	0.3852	4.6218
1326	0.953124	1.4297	1.044	1.0443	12.5319	0.3854	4.6234
1326.2	0.953217	1.4298	1.044	1.0443	12.5319	0.3855	4.6251
1326.4	0.95331	1.4300	1.044	1.0443	12.5319	0.3856	4.6268
1326.6	0.953404	1.4301	1.044	1.0443	12.5319	0.3858	4.6285
1326.8	0.953497	1.4302	1.044	1.0443	12.5319	0.3859	4.6302
1327	0.95359	1.4304	1.044	1.0443	12.5319	0.3861	4.6318
1327.2	0.953683	1.4305	1.044	1.0443	12.5319	0.3862	4.6335
1327.4	0.953776	1.4307	1.044	1.0443	12.5319	0.3863	4.6352
1327.6	0.953869	1.4308	1.044	1.0443	12.5319	0.3865	4.6369
1327.8	0.953961	1.4309	1.044	1.0443	12.5319	0.3866	4.6385
1328	0.954054	1.4311	1.044	1.0443	12.5319	0.3868	4.6402
1328.2	0.954147	1.4312	1.044	1.0443	12.5319	0.3869	4.6419
1328.4	0.95424	1.4314	1.044	1.0443	12.5319	0.3870	4.6435
1328.6	0.954332	1.4315	1.044	1.0443	12.5319	0.3872	4.6452
1328.8	0.954425	1.4316	1.044	1.0443	12.5319	0.3873	4.6469
1329	0.954518	1.4318	1.044	1.0443	12.5319	0.3874	4.6485
1329.2	0.95461	1.4319	1.044	1.0443	12.5319	0.3876	4.6502
1329.4	0.954703	1.4321	1.044	1.0443	12.5319	0.3877	4.6519
1329.6	0.954795	1.4322	1.044	1.0443	12.5319	0.3879	4.6535
1329.8	0.954887	1.4323	1.044	1.0443	12.5319	0.3880	4.6552
1330	0.95498	1.4325	1.044	1.0443	12.5319	0.3881	4.6569
1330.2	0.955072	1.4326	1.044	1.0443	12.5319	0.3883	4.6585
1330.4	0.955164	1.4327	1.044	1.0443	12.5319	0.3884	4.6602
1330.6	0.955256	1.4329	1.044	1.0443	12.5319	0.3886	4.6618
1330.8	0.955348	1.4330	1.044	1.0443	12.5319	0.3887	4.6635
1331	0.95544	1.4332	1.044	1.0443	12.5319	0.3888	4.6652
1331.2	0.955532	1.4333	1.044	1.0443	12.5319	0.3890	4.6668
1331.4	0.955624	1.4334	1.044	1.0443	12.5319	0.3891	4.6685
1331.6	0.955716	1.4336	1.044	1.0443	12.5319	0.3892	4.6701
1331.8	0.955808	1.4337	1.044	1.0443	12.5319	0.3894	4.6718
1332	0.9559	1.4339	1.044	1.0443	12.5319	0.3895	4.6734
1332.2	0.955992	1.4340	1.044	1.0443	12.5319	0.3897	4.6751
1332.4	0.956084	1.4341	1.044	1.0443	12.5319	0.3898	4.6767
1332.6	0.956175	1.4343	1.044	1.0443	12.5319	0.3899	4.6784
1332.8	0.956267	1.4344	1.044	1.0443	12.5319	0.3901	4.6800
1333	0.956359	1.4345	1.044	1.0443	12.5319	0.3902	4.6817
1333.2	0.95645	1.4347	1.044	1.0443	12.5319	0.3903	4.6833

1333.4	0.956542	1.4348	1.044	1.0443	12.5319	0.3905	4.6850
1333.6	0.956633	1.4349	1.044	1.0443	12.5319	0.3906	4.6866
1333.8	0.956724	1.4351	1.044	1.0443	12.5319	0.3908	4.6883
1334	0.956816	1.4352	1.044	1.0443	12.5319	0.3909	4.6899
1334.2	0.956907	1.4354	1.044	1.0443	12.5319	0.3910	4.6916
1334.4	0.956998	1.4355	1.044	1.0443	12.5319	0.3912	4.6932
1334.6	0.95709	1.4356	1.044	1.0443	12.5319	0.3913	4.6948
1334.8	0.957181	1.4358	1.044	1.0443	12.5319	0.3914	4.6965
1335	0.957272	1.4359	1.044	1.0443	12.5319	0.3916	4.6981
1335.2	0.957363	1.4360	1.044	1.0443	12.5319	0.3917	4.6998
1335.4	0.957454	1.4362	1.044	1.0443	12.5319	0.3919	4.7014
1335.6	0.957545	1.4363	1.044	1.0443	12.5319	0.3920	4.7030
1335.8	0.957636	1.4365	1.044	1.0443	12.5319	0.3921	4.7047
1336	0.957727	1.4366	1.044	1.0443	12.5319	0.3923	4.7063
1336.2	0.957818	1.4367	1.044	1.0443	12.5319	0.3924	4.7080
1336.4	0.957908	1.4369	1.044	1.0443	12.5319	0.3925	4.7096
1336.6	0.957999	1.4370	1.044	1.0443	12.5319	0.3927	4.7112
1336.8	0.95809	1.4371	1.044	1.0443	12.5319	0.3928	4.7129
1337	0.958181	1.4373	1.044	1.0443	12.5319	0.3929	4.7145
1337.2	0.958271	1.4374	1.044	1.0443	12.5319	0.3931	4.7161
1337.4	0.958362	1.4375	1.044	1.0443	12.5319	0.3932	4.7178
1337.6	0.958452	1.4377	1.044	1.0443	12.5319	0.3933	4.7194
1337.8	0.958543	1.4378	1.044	1.0443	12.5319	0.3935	4.7210
1338	0.958633	1.4379	1.044	1.0443	12.5319	0.3936	4.7226
1338.2	0.958723	1.4381	1.044	1.0443	12.5319	0.3938	4.7243
1338.4	0.958814	1.4382	1.044	1.0443	12.5319	0.3939	4.7259
1338.6	0.958904	1.4384	1.044	1.0443	12.5319	0.3940	4.7275
1338.8	0.958994	1.4385	1.044	1.0443	12.5319	0.3942	4.7291
1339	0.959085	1.4386	1.044	1.0443	12.5319	0.3943	4.7308
1339.2	0.959175	1.4388	1.044	1.0443	12.5319	0.3944	4.7324
1339.4	0.959265	1.4389	1.044	1.0443	12.5319	0.3946	4.7340
1339.6	0.959355	1.4390	1.044	1.0443	12.5319	0.3947	4.7356
1339.8	0.959445	1.4392	1.044	1.0443	12.5319	0.3948	4.7373
1340	0.959535	1.4393	1.044	1.0443	12.5319	0.3950	4.7389
1340.2	0.959625	1.4394	1.044	1.0443	12.5319	0.3951	4.7405
1340.4	0.959715	1.4396	1.044	1.0443	12.5319	0.3952	4.7421
1340.6	0.959805	1.4397	1.044	1.0443	12.5319	0.3954	4.7437
1340.8	0.959894	1.4398	1.044	1.0443	12.5319	0.3955	4.7453
1341	0.959984	1.4400	1.044	1.0443	12.5319	0.3956	4.7470
1341.2	0.960074	1.4401	1.044	1.0443	12.5319	0.3958	4.7486
1341.4	0.960163	1.4402	1.044	1.0443	12.5319	0.3959	4.7502
1341.6	0.960253	1.4404	1.044	1.0443	12.5319	0.3961	4.7518
1341.8	0.960343	1.4405	1.044	1.0443	12.5319	0.3962	4.7534
1342	0.960432	1.4406	1.044	1.0443	12.5319	0.3963	4.7550
1342.2	0.960522	1.4408	1.044	1.0443	12.5319	0.3965	4.7566
1342.4	0.960611	1.4409	1.044	1.0443	12.5319	0.3966	4.7582
1342.6	0.9607	1.4411	1.044	1.0443	12.5319	0.3967	4.7599

1342.8	0.96079	1.4412	1.044	1.0443	12.5319	0.3969	4.7615
1343	0.960879	1.4413	1.044	1.0443	12.5319	0.3970	4.7631
1343.2	0.960968	1.4415	1.044	1.0443	12.5319	0.3971	4.7647
1343.4	0.961058	1.4416	1.044	1.0443	12.5319	0.3973	4.7663
1343.6	0.961147	1.4417	1.044	1.0443	12.5319	0.3974	4.7679
1343.8	0.961236	1.4419	1.044	1.0443	12.5319	0.3975	4.7695
1344	0.961325	1.4420	1.044	1.0443	12.5319	0.3977	4.7711
1344.2	0.961414	1.4421	1.044	1.0443	12.5319	0.3978	4.7727
1344.4	0.961503	1.4423	1.044	1.0443	12.5319	0.3979	4.7743
1344.6	0.961592	1.4424	1.044	1.0443	12.5319	0.3981	4.7759
1344.8	0.961681	1.4425	1.044	1.0443	12.5319	0.3982	4.7775
1345	0.96177	1.4427	1.044	1.0443	12.5319	0.3983	4.7791
1345.2	0.961859	1.4428	1.044	1.0443	12.5319	0.3985	4.7807
1345.4	0.961947	1.4429	1.044	1.0443	12.5319	0.3986	4.7823
1345.6	0.962036	1.4431	1.044	1.0443	12.5319	0.3987	4.7839
1345.8	0.962125	1.4432	1.044	1.0443	12.5319	0.3989	4.7855
1346	0.962213	1.4433	1.044	1.0443	12.5319	0.3990	4.7871
1346.2	0.962302	1.4435	1.044	1.0443	12.5319	0.3991	4.7887
1346.4	0.962391	1.4436	1.044	1.0443	12.5319	0.3993	4.7903
1346.6	0.962479	1.4437	1.044	1.0443	12.5319	0.3994	4.7919
1346.8	0.962568	1.4439	1.044	1.0443	12.5319	0.3995	4.7935
1347	0.962656	1.4440	1.044	1.0443	12.5319	0.3997	4.7951
1347.2	0.962744	1.4441	1.044	1.0443	12.5319	0.3998	4.7967
1347.4	0.962833	1.4442	1.044	1.0443	12.5319	0.3999	4.7983
1347.6	0.962921	1.4444	1.044	1.0443	12.5319	0.4001	4.7998
1347.8	0.963009	1.4445	1.044	1.0443	12.5319	0.4002	4.8014
1348	0.963098	1.4446	1.044	1.0443	12.5319	0.4003	4.8030
1348.2	0.963186	1.4448	1.044	1.0443	12.5319	0.4005	4.8046
1348.4	0.963274	1.4449	1.044	1.0443	12.5319	0.4006	4.8062
1348.6	0.963362	1.4450	1.044	1.0443	12.5319	0.4007	4.8078
1348.8	0.96345	1.4452	1.044	1.0443	12.5319	0.4008	4.8094
1349	0.963538	1.4453	1.044	1.0443	12.5319	0.4010	4.8110
1349.2	0.963626	1.4454	1.044	1.0443	12.5319	0.4011	4.8125
1349.4	0.963714	1.4456	1.044	1.0443	12.5319	0.4012	4.8141
1349.6	0.963802	1.4457	1.044	1.0443	12.5319	0.4014	4.8157
1349.8	0.96389	1.4458	1.044	1.0443	12.5319	0.4015	4.8173
1350	0.963978	1.4460	1.044	1.0443	12.5319	0.4016	4.8189
1350.2	0.964065	1.4461	1.044	1.0443	12.5319	0.4018	4.8204
1350.4	0.964153	1.4462	1.044	1.0443	12.5319	0.4019	4.8220
1350.6	0.964241	1.4464	1.044	1.0443	12.5319	0.4020	4.8236
1350.8	0.964328	1.4465	1.044	1.0443	12.5319	0.4022	4.8252
1351	0.964416	1.4466	1.044	1.0443	12.5319	0.4023	4.8268
1351.2	0.964504	1.4468	1.044	1.0443	12.5319	0.4024	4.8283
1351.4	0.964591	1.4469	1.044	1.0443	12.5319	0.4026	4.8299
1351.6	0.964679	1.4470	1.044	1.0443	12.5319	0.4027	4.8315
1351.8	0.964766	1.4471	1.044	1.0443	12.5319	0.4028	4.8331
1352	0.964853	1.4473	1.044	1.0443	12.5319	0.4030	4.8346

1352.2	0.964941	1.4474	1.044	1.0443	12.5319	0.4031	4.8362
1352.4	0.965028	1.4475	1.044	1.0443	12.5319	0.4032	4.8378
1352.6	0.965115	1.4477	1.044	1.0443	12.5319	0.4033	4.8393
1352.8	0.965203	1.4478	1.044	1.0443	12.5319	0.4035	4.8409
1353	0.96529	1.4479	1.044	1.0443	12.5319	0.4036	4.8425
1353.2	0.965377	1.4481	1.044	1.0443	12.5319	0.4037	4.8441
1353.4	0.965464	1.4482	1.044	1.0443	12.5319	0.4039	4.8456
1353.6	0.965551	1.4483	1.044	1.0443	12.5319	0.4040	4.8472
1353.8	0.965638	1.4485	1.044	1.0443	12.5319	0.4041	4.8488
1354	0.965725	1.4486	1.044	1.0443	12.5319	0.4043	4.8503
1354.2	0.965812	1.4487	1.044	1.0443	12.5319	0.4044	4.8519
1354.4	0.965899	1.4488	1.044	1.0443	12.5319	0.4045	4.8535
1354.6	0.965986	1.4490	1.044	1.0443	12.5319	0.4046	4.8550
1354.8	0.966073	1.4491	1.044	1.0443	12.5319	0.4048	4.8566
1355	0.966159	1.4492	1.044	1.0443	12.5319	0.4049	4.8581
1355.2	0.966246	1.4494	1.044	1.0443	12.5319	0.4050	4.8597
1355.4	0.966333	1.4495	1.044	1.0443	12.5319	0.4052	4.8613
1355.6	0.966419	1.4496	1.044	1.0443	12.5319	0.4053	4.8628
1355.8	0.966506	1.4498	1.044	1.0443	12.5319	0.4054	4.8644
1356	0.966593	1.4499	1.044	1.0443	12.5319	0.4056	4.8659
1356.2	0.966679	1.4500	1.044	1.0443	12.5319	0.4057	4.8675
1356.4	0.966766	1.4501	1.044	1.0443	12.5319	0.4058	4.8691
1356.6	0.966852	1.4503	1.044	1.0443	12.5319	0.4059	4.8706
1356.8	0.966939	1.4504	1.044	1.0443	12.5319	0.4061	4.8722
1357	0.967025	1.4505	1.044	1.0443	12.5319	0.4062	4.8737
1357.2	0.967111	1.4507	1.044	1.0443	12.5319	0.4063	4.8753
1357.4	0.967198	1.4508	1.044	1.0443	12.5319	0.4065	4.8768
1357.6	0.967284	1.4509	1.044	1.0443	12.5319	0.4066	4.8784
1357.8	0.96737	1.4511	1.044	1.0443	12.5319	0.4067	4.8799
1358	0.967456	1.4512	1.044	1.0443	12.5319	0.4069	4.8815
1358.2	0.967542	1.4513	1.044	1.0443	12.5319	0.4070	4.8830
1358.4	0.967629	1.4514	1.044	1.0443	12.5319	0.4071	4.8846
1358.6	0.967715	1.4516	1.044	1.0443	12.5319	0.4072	4.8861
1358.8	0.967801	1.4517	1.044	1.0443	12.5319	0.4074	4.8877
1359	0.967887	1.4518	1.044	1.0443	12.5319	0.4075	4.8892
1359.2	0.967973	1.4520	1.044	1.0443	12.5319	0.4076	4.8908
1359.4	0.968059	1.4521	1.044	1.0443	12.5319	0.4078	4.8923
1359.6	0.968144	1.4522	1.044	1.0443	12.5319	0.4079	4.8939
1359.8	0.96823	1.4523	1.044	1.0443	12.5319	0.4080	4.8954
1360	0.968316	1.4525	1.044	1.0443	12.5319	0.4081	4.8970
1360.2	0.968402	1.4526	1.044	1.0443	12.5319	0.4083	4.8985
1360.4	0.968488	1.4527	1.044	1.0443	12.5319	0.4084	4.9001
1360.6	0.968573	1.4529	1.044	1.0443	12.5319	0.4085	4.9016
1360.8	0.968659	1.4530	1.044	1.0443	12.5319	0.4087	4.9031
1361	0.968744	1.4531	1.044	1.0443	12.5319	0.4088	4.9047
1361.2	0.96883	1.4532	1.044	1.0443	12.5319	0.4089	4.9062
1361.4	0.968916	1.4534	1.044	1.0443	12.5319	0.4090	4.9078

1361.6	0.969001	1.4535	1.044	1.0443	12.5319	0.4092	4.9093
1361.8	0.969086	1.4536	1.044	1.0443	12.5319	0.4093	4.9108
1362	0.969172	1.4538	1.044	1.0443	12.5319	0.4094	4.9124
1362.2	0.969257	1.4539	1.044	1.0443	12.5319	0.4096	4.9139
1362.4	0.969343	1.4540	1.044	1.0443	12.5319	0.4097	4.9155
1362.6	0.969428	1.4541	1.044	1.0443	12.5319	0.4098	4.9170
1362.8	0.969513	1.4543	1.044	1.0443	12.5319	0.4099	4.9185
1363	0.969598	1.4544	1.044	1.0443	12.5319	0.4101	4.9201
1363.2	0.969684	1.4545	1.044	1.0443	12.5319	0.4102	4.9216
1363.4	0.969769	1.4547	1.044	1.0443	12.5319	0.4103	4.9231
1363.6	0.969854	1.4548	1.044	1.0443	12.5319	0.4105	4.9247
1363.8	0.969939	1.4549	1.044	1.0443	12.5319	0.4106	4.9262
1364	0.970024	1.4550	1.044	1.0443	12.5319	0.4107	4.9277
1364.2	0.970109	1.4552	1.044	1.0443	12.5319	0.4108	4.9293
1364.4	0.970194	1.4553	1.044	1.0443	12.5319	0.4110	4.9308
1364.6	0.970279	1.4554	1.044	1.0443	12.5319	0.4111	4.9323
1364.8	0.970364	1.4555	1.044	1.0443	12.5319	0.4112	4.9338
1365	0.970448	1.4557	1.044	1.0443	12.5319	0.4113	4.9354
1365.2	0.970533	1.4558	1.044	1.0443	12.5319	0.4115	4.9369
1365.4	0.970618	1.4559	1.044	1.0443	12.5319	0.4116	4.9384
1365.6	0.970703	1.4561	1.044	1.0443	12.5319	0.4117	4.9399
1365.8	0.970787	1.4562	1.044	1.0443	12.5319	0.4119	4.9415
1366	0.970872	1.4563	1.044	1.0443	12.5319	0.4120	4.9430
1366.2	0.970957	1.4564	1.044	1.0443	12.5319	0.4121	4.9445
1366.4	0.971041	1.4566	1.044	1.0443	12.5319	0.4122	4.9460
1366.6	0.971126	1.4567	1.044	1.0443	12.5319	0.4124	4.9476
1366.8	0.97121	1.4568	1.044	1.0443	12.5319	0.4125	4.9491
1367	0.971295	1.4569	1.044	1.0443	12.5319	0.4126	4.9506
1367.2	0.971379	1.4571	1.044	1.0443	12.5319	0.4127	4.9521
1367.4	0.971464	1.4572	1.044	1.0443	12.5319	0.4129	4.9536
1367.6	0.971548	1.4573	1.044	1.0443	12.5319	0.4130	4.9552
1367.8	0.971632	1.4574	1.044	1.0443	12.5319	0.4131	4.9567
1368	0.971717	1.4576	1.044	1.0443	12.5319	0.4132	4.9582
1368.2	0.971801	1.4577	1.044	1.0443	12.5319	0.4134	4.9597
1368.4	0.971885	1.4578	1.044	1.0443	12.5319	0.4135	4.9612
1368.6	0.971969	1.4580	1.044	1.0443	12.5319	0.4136	4.9627
1368.8	0.972053	1.4581	1.044	1.0443	12.5319	0.4138	4.9643
1369	0.972138	1.4582	1.044	1.0443	12.5319	0.4139	4.9658
1369.2	0.972222	1.4583	1.044	1.0443	12.5319	0.4140	4.9673
1369.4	0.972306	1.4585	1.044	1.0443	12.5319	0.4141	4.9688
1369.6	0.97239	1.4586	1.044	1.0443	12.5319	0.4143	4.9703
1369.8	0.972474	1.4587	1.044	1.0443	12.5319	0.4144	4.9718
1370	0.972558	1.4588	1.044	1.0443	12.5319	0.4145	4.9733
1370.2	0.972641	1.4590	1.044	1.0443	12.5319	0.4146	4.9748
1370.4	0.972725	1.4591	1.044	1.0443	12.5319	0.4148	4.9764
1370.6	0.972809	1.4592	1.044	1.0443	12.5319	0.4149	4.9779
1370.8	0.972893	1.4593	1.044	1.0443	12.5319	0.4150	4.9794

1371	0.972977	1.4595	1.044	1.0443	12.5319	0.4151	4.9809
1371.2	0.97306	1.4596	1.044	1.0443	12.5319	0.4153	4.9824
1371.4	0.973144	1.4597	1.044	1.0443	12.5319	0.4154	4.9839
1371.6	0.973228	1.4598	1.044	1.0443	12.5319	0.4155	4.9854
1371.8	0.973311	1.4600	1.044	1.0443	12.5319	0.4156	4.9869
1372	0.973395	1.4601	1.044	1.0443	12.5319	0.4158	4.9884
1372.2	0.973478	1.4602	1.044	1.0443	12.5319	0.4159	4.9899
1372.4	0.973562	1.4603	1.044	1.0443	12.5319	0.4160	4.9914
1372.6	0.973645	1.4605	1.044	1.0443	12.5319	0.4161	4.9929
1372.8	0.973729	1.4606	1.044	1.0443	12.5319	0.4163	4.9944
1373	0.973812	1.4607	1.044	1.0443	12.5319	0.4164	4.9959
1373.2	0.973895	1.4608	1.044	1.0443	12.5319	0.4165	4.9974
1373.4	0.973979	1.4610	1.044	1.0443	12.5319	0.4166	4.9989
1373.6	0.974062	1.4611	1.044	1.0443	12.5319	0.4168	5.0004
1373.8	0.974145	1.4612	1.044	1.0443	12.5319	0.4169	5.0019
1374	0.974228	1.4613	1.044	1.0443	12.5319	0.4170	5.0034
1374.2	0.974312	1.4615	1.044	1.0443	12.5319	0.4171	5.0049
1374.4	0.974395	1.4616	1.044	1.0443	12.5319	0.4173	5.0064
1374.6	0.974478	1.4617	1.044	1.0443	12.5319	0.4174	5.0079
1374.8	0.974561	1.4618	1.044	1.0443	12.5319	0.4175	5.0094
1375	0.974644	1.4620	1.044	1.0443	12.5319	0.4176	5.0109
1375.2	0.974727	1.4621	1.044	1.0443	12.5319	0.4178	5.0124
1375.4	0.97481	1.4622	1.044	1.0443	12.5319	0.4179	5.0139
1375.6	0.974893	1.4623	1.044	1.0443	12.5319	0.4180	5.0154
1375.8	0.974976	1.4625	1.044	1.0443	12.5319	0.4181	5.0169
1376	0.975059	1.4626	1.044	1.0443	12.5319	0.4183	5.0184
1376.2	0.975141	1.4627	1.044	1.0443	12.5319	0.4184	5.0199
1376.4	0.975224	1.4628	1.044	1.0443	12.5319	0.4185	5.0213
1376.6	0.975307	1.4630	1.044	1.0443	12.5319	0.4186	5.0228
1376.8	0.97539	1.4631	1.044	1.0443	12.5319	0.4188	5.0243
1377	0.975472	1.4632	1.044	1.0443	12.5319	0.4189	5.0258
1377.2	0.975555	1.4633	1.044	1.0443	12.5319	0.4190	5.0273
1377.4	0.975638	1.4635	1.044	1.0443	12.5319	0.4191	5.0288
1377.6	0.97572	1.4636	1.044	1.0443	12.5319	0.4193	5.0303
1377.8	0.975803	1.4637	1.044	1.0443	12.5319	0.4194	5.0318
1378	0.975885	1.4638	1.044	1.0443	12.5319	0.4195	5.0332
1378.2	0.975968	1.4640	1.044	1.0443	12.5319	0.4196	5.0347
1378.4	0.97605	1.4641	1.044	1.0443	12.5319	0.4197	5.0362
1378.6	0.976133	1.4642	1.044	1.0443	12.5319	0.4199	5.0377
1378.8	0.976215	1.4643	1.044	1.0443	12.5319	0.4200	5.0392
1379	0.976297	1.4644	1.044	1.0443	12.5319	0.4201	5.0407
1379.2	0.97638	1.4646	1.044	1.0443	12.5319	0.4202	5.0421
1379.4	0.976462	1.4647	1.044	1.0443	12.5319	0.4204	5.0436
1379.6	0.976544	1.4648	1.044	1.0443	12.5319	0.4205	5.0451
1379.8	0.976626	1.4649	1.044	1.0443	12.5319	0.4206	5.0466
1380	0.976709	1.4651	1.044	1.0443	12.5319	0.4207	5.0481
1380.2	0.976791	1.4652	1.044	1.0443	12.5319	0.4209	5.0495

1380.4	0.976873	1.4653	1.044	1.0443	12.5319	0.4210	5.0510
1380.6	0.976955	1.4654	1.044	1.0443	12.5319	0.4211	5.0525
1380.8	0.977037	1.4656	1.044	1.0443	12.5319	0.4212	5.0540
1381	0.977119	1.4657	1.044	1.0443	12.5319	0.4213	5.0555
1381.2	0.977201	1.4658	1.044	1.0443	12.5319	0.4215	5.0569
1381.4	0.977283	1.4659	1.044	1.0443	12.5319	0.4216	5.0584
1381.6	0.977365	1.4660	1.044	1.0443	12.5319	0.4217	5.0599
1381.8	0.977447	1.4662	1.044	1.0443	12.5319	0.4218	5.0614
1382	0.977528	1.4663	1.044	1.0443	12.5319	0.4220	5.0628
1382.2	0.97761	1.4664	1.044	1.0443	12.5319	0.4221	5.0643
1382.4	0.977692	1.4665	1.044	1.0443	12.5319	0.4222	5.0658
1382.6	0.977774	1.4667	1.044	1.0443	12.5319	0.4223	5.0672
1382.8	0.977855	1.4668	1.044	1.0443	12.5319	0.4225	5.0687
1383	0.977937	1.4669	1.044	1.0443	12.5319	0.4226	5.0702
1383.2	0.978019	1.4670	1.044	1.0443	12.5319	0.4227	5.0717
1383.4	0.9781	1.4672	1.044	1.0443	12.5319	0.4228	5.0731
1383.6	0.978182	1.4673	1.044	1.0443	12.5319	0.4229	5.0746
1383.8	0.978263	1.4674	1.044	1.0443	12.5319	0.4231	5.0761
1384	0.978345	1.4675	1.044	1.0443	12.5319	0.4232	5.0775
1384.2	0.978426	1.4676	1.044	1.0443	12.5319	0.4233	5.0790
1384.4	0.978508	1.4678	1.044	1.0443	12.5319	0.4234	5.0805
1384.6	0.978589	1.4679	1.044	1.0443	12.5319	0.4236	5.0819
1384.8	0.978671	1.4680	1.044	1.0443	12.5319	0.4237	5.0834
1385	0.978752	1.4681	1.044	1.0443	12.5319	0.4238	5.0849
1385.2	0.978833	1.4682	1.044	1.0443	12.5319	0.4239	5.0863
1385.4	0.978914	1.4684	1.044	1.0443	12.5319	0.4240	5.0878
1385.6	0.978996	1.4685	1.044	1.0443	12.5319	0.4242	5.0892
1385.8	0.979077	1.4686	1.044	1.0443	12.5319	0.4243	5.0907
1386	0.979158	1.4687	1.044	1.0443	12.5319	0.4244	5.0922
1386.2	0.979239	1.4689	1.044	1.0443	12.5319	0.4245	5.0936
1386.4	0.97932	1.4690	1.044	1.0443	12.5319	0.4247	5.0951
1386.6	0.979401	1.4691	1.044	1.0443	12.5319	0.4248	5.0966
1386.8	0.979482	1.4692	1.044	1.0443	12.5319	0.4249	5.0980
1387	0.979563	1.4693	1.044	1.0443	12.5319	0.4250	5.0995
1387.2	0.979644	1.4695	1.044	1.0443	12.5319	0.4251	5.1009
1387.4	0.979725	1.4696	1.044	1.0443	12.5319	0.4253	5.1024
1387.6	0.979806	1.4697	1.044	1.0443	12.5319	0.4254	5.1038
1387.8	0.979887	1.4698	1.044	1.0443	12.5319	0.4255	5.1053
1388	0.979968	1.4700	1.044	1.0443	12.5319	0.4256	5.1068
1388.2	0.980049	1.4701	1.044	1.0443	12.5319	0.4257	5.1082
1388.4	0.98013	1.4702	1.044	1.0443	12.5319	0.4259	5.1097
1388.6	0.98021	1.4703	1.044	1.0443	12.5319	0.4260	5.1111
1388.8	0.980291	1.4704	1.044	1.0443	12.5319	0.4261	5.1126
1389	0.980372	1.4706	1.044	1.0443	12.5319	0.4262	5.1140
1389.2	0.980452	1.4707	1.044	1.0443	12.5319	0.4263	5.1155
1389.4	0.980533	1.4708	1.044	1.0443	12.5319	0.4265	5.1169
1389.6	0.980614	1.4709	1.044	1.0443	12.5319	0.4266	5.1184

1389.8	0.980694	1.4710	1.044	1.0443	12.5319	0.4267	5.1198
1390	0.980775	1.4712	1.044	1.0443	12.5319	0.4268	5.1213
1390.2	0.980855	1.4713	1.044	1.0443	12.5319	0.4270	5.1227
1390.4	0.980936	1.4714	1.044	1.0443	12.5319	0.4271	5.1242
1390.6	0.981016	1.4715	1.044	1.0443	12.5319	0.4272	5.1256
1390.8	0.981097	1.4716	1.044	1.0443	12.5319	0.4273	5.1271
1391	0.981177	1.4718	1.044	1.0443	12.5319	0.4274	5.1285
1391.2	0.981257	1.4719	1.044	1.0443	12.5319	0.4276	5.1300
1391.4	0.981338	1.4720	1.044	1.0443	12.5319	0.4277	5.1314
1391.6	0.981418	1.4721	1.044	1.0443	12.5319	0.4278	5.1329
1391.8	0.981498	1.4722	1.044	1.0443	12.5319	0.4279	5.1343
1392	0.981578	1.4724	1.044	1.0443	12.5319	0.4280	5.1357
1392.2	0.981658	1.4725	1.044	1.0443	12.5319	0.4282	5.1372
1392.4	0.981739	1.4726	1.044	1.0443	12.5319	0.4283	5.1386
1392.6	0.981819	1.4727	1.044	1.0443	12.5319	0.4284	5.1401
1392.8	0.981899	1.4728	1.044	1.0443	12.5319	0.4285	5.1415
1393	0.981979	1.4730	1.044	1.0443	12.5319	0.4286	5.1430
1393.2	0.982059	1.4731	1.044	1.0443	12.5319	0.4288	5.1444
1393.4	0.982139	1.4732	1.044	1.0443	12.5319	0.4289	5.1458
1393.6	0.982219	1.4733	1.044	1.0443	12.5319	0.4290	5.1473
1393.8	0.982299	1.4734	1.044	1.0443	12.5319	0.4291	5.1487
1394	0.982379	1.4736	1.044	1.0443	12.5319	0.4292	5.1502
1394.2	0.982459	1.4737	1.044	1.0443	12.5319	0.4294	5.1516
1394.4	0.982538	1.4738	1.044	1.0443	12.5319	0.4295	5.1530
1394.6	0.982618	1.4739	1.044	1.0443	12.5319	0.4296	5.1545
1394.8	0.982698	1.4740	1.044	1.0443	12.5319	0.4297	5.1559
1395	0.982778	1.4742	1.044	1.0443	12.5319	0.4298	5.1573
1395.2	0.982857	1.4743	1.044	1.0443	12.5319	0.4300	5.1588
1395.4	0.982937	1.4744	1.044	1.0443	12.5319	0.4301	5.1602
1395.6	0.983017	1.4745	1.044	1.0443	12.5319	0.4302	5.1616
1395.8	0.983096	1.4746	1.044	1.0443	12.5319	0.4303	5.1631
1396	0.983176	1.4748	1.044	1.0443	12.5319	0.4304	5.1645
1396.2	0.983256	1.4749	1.044	1.0443	12.5319	0.4306	5.1659
1396.4	0.983335	1.4750	1.044	1.0443	12.5319	0.4307	5.1674
1396.6	0.983415	1.4751	1.044	1.0443	12.5319	0.4308	5.1688
1396.8	0.983494	1.4752	1.044	1.0443	12.5319	0.4309	5.1702
1397	0.983574	1.4754	1.044	1.0443	12.5319	0.4310	5.1717
1397.2	0.983653	1.4755	1.044	1.0443	12.5319	0.4312	5.1731
1397.4	0.983732	1.4756	1.044	1.0443	12.5319	0.4313	5.1745
1397.6	0.983812	1.4757	1.044	1.0443	12.5319	0.4314	5.1760
1397.8	0.983891	1.4758	1.044	1.0443	12.5319	0.4315	5.1774
1398	0.98397	1.4760	1.044	1.0443	12.5319	0.4316	5.1788
1398.2	0.98405	1.4761	1.044	1.0443	12.5319	0.4317	5.1802
1398.4	0.984129	1.4762	1.044	1.0443	12.5319	0.4319	5.1817
1398.6	0.984208	1.4763	1.044	1.0443	12.5319	0.4320	5.1831
1398.8	0.984287	1.4764	1.044	1.0443	12.5319	0.4321	5.1845
1399	0.984366	1.4765	1.044	1.0443	12.5319	0.4322	5.1859

1399.2	0.984445	1.4767	1.044	1.0443	12.5319	0.4323	5.1874
1399.4	0.984524	1.4768	1.044	1.0443	12.5319	0.4325	5.1888
1399.6	0.984603	1.4769	1.044	1.0443	12.5319	0.4326	5.1902
1399.8	0.984682	1.4770	1.044	1.0443	12.5319	0.4327	5.1916
1400	0.984761	1.4771	1.044	1.0443	12.5319	0.4328	5.1931
1400.2	0.98484	1.4773	1.044	1.0443	12.5319	0.4329	5.1945
1400.4	0.984919	1.4774	1.044	1.0443	12.5319	0.4331	5.1959
1400.6	0.984998	1.4775	1.044	1.0443	12.5319	0.4332	5.1973
1400.8	0.985077	1.4776	1.044	1.0443	12.5319	0.4333	5.1987
1401	0.985156	1.4777	1.044	1.0443	12.5319	0.4334	5.2002
1401.2	0.985235	1.4779	1.044	1.0443	12.5319	0.4335	5.2016
1401.4	0.985314	1.4780	1.044	1.0443	12.5319	0.4336	5.2030
1401.6	0.985392	1.4781	1.044	1.0443	12.5319	0.4338	5.2044
1401.8	0.985471	1.4782	1.044	1.0443	12.5319	0.4339	5.2058
1402	0.98555	1.4783	1.044	1.0443	12.5319	0.4340	5.2072
1402.2	0.985628	1.4784	1.044	1.0443	12.5319	0.4341	5.2087
1402.4	0.985707	1.4786	1.044	1.0443	12.5319	0.4342	5.2101
1402.6	0.985786	1.4787	1.044	1.0443	12.5319	0.4343	5.2115
1402.8	0.985864	1.4788	1.044	1.0443	12.5319	0.4345	5.2129
1403	0.985943	1.4789	1.044	1.0443	12.5319	0.4346	5.2143
1403.2	0.986021	1.4790	1.044	1.0443	12.5319	0.4347	5.2157
1403.4	0.9861	1.4791	1.044	1.0443	12.5319	0.4348	5.2171
1403.6	0.986178	1.4793	1.044	1.0443	12.5319	0.4349	5.2186
1403.8	0.986257	1.4794	1.044	1.0443	12.5319	0.4351	5.2200
1404	0.986335	1.4795	1.044	1.0443	12.5319	0.4352	5.2214
1404.2	0.986413	1.4796	1.044	1.0443	12.5319	0.4353	5.2228
1404.4	0.986492	1.4797	1.044	1.0443	12.5319	0.4354	5.2242
1404.6	0.98657	1.4799	1.044	1.0443	12.5319	0.4355	5.2256
1404.8	0.986648	1.4800	1.044	1.0443	12.5319	0.4356	5.2270
1405	0.986726	1.4801	1.044	1.0443	12.5319	0.4358	5.2284
1405.2	0.986805	1.4802	1.044	1.0443	12.5319	0.4359	5.2298
1405.4	0.986883	1.4803	1.044	1.0443	12.5319	0.4360	5.2312
1405.6	0.986961	1.4804	1.044	1.0443	12.5319	0.4361	5.2327
1405.8	0.987039	1.4806	1.044	1.0443	12.5319	0.4362	5.2341
1406	0.987117	1.4807	1.044	1.0443	12.5319	0.4363	5.2355
1406.2	0.987195	1.4808	1.044	1.0443	12.5319	0.4365	5.2369
1406.4	0.987273	1.4809	1.044	1.0443	12.5319	0.4366	5.2383
1406.6	0.987351	1.4810	1.044	1.0443	12.5319	0.4367	5.2397
1406.8	0.987429	1.4811	1.044	1.0443	12.5319	0.4368	5.2411
1407	0.987507	1.4813	1.044	1.0443	12.5319	0.4369	5.2425
1407.2	0.987585	1.4814	1.044	1.0443	12.5319	0.4370	5.2439
1407.4	0.987663	1.4815	1.044	1.0443	12.5319	0.4372	5.2453
1407.6	0.987741	1.4816	1.044	1.0443	12.5319	0.4373	5.2467
1407.8	0.987819	1.4817	1.044	1.0443	12.5319	0.4374	5.2481
1408	0.987897	1.4818	1.044	1.0443	12.5319	0.4375	5.2495
1408.2	0.987974	1.4820	1.044	1.0443	12.5319	0.4376	5.2509
1408.4	0.988052	1.4821	1.044	1.0443	12.5319	0.4377	5.2523

1408.6	0.98813	1.4822	1.044	1.0443	12.5319	0.4379	5.2537
1408.8	0.988208	1.4823	1.044	1.0443	12.5319	0.4380	5.2551
1409	0.988285	1.4824	1.044	1.0443	12.5319	0.4381	5.2565
1409.2	0.988363	1.4825	1.044	1.0443	12.5319	0.4382	5.2579
1409.4	0.988441	1.4827	1.044	1.0443	12.5319	0.4383	5.2593
1409.6	0.988518	1.4828	1.044	1.0443	12.5319	0.4384	5.2607
1409.8	0.988596	1.4829	1.044	1.0443	12.5319	0.4386	5.2621
1410	0.988673	1.4830	1.044	1.0443	12.5319	0.4387	5.2635
1410.2	0.988751	1.4831	1.044	1.0443	12.5319	0.4388	5.2649
1410.4	0.988828	1.4832	1.044	1.0443	12.5319	0.4389	5.2663
1410.6	0.988906	1.4834	1.044	1.0443	12.5319	0.4390	5.2677
1410.8	0.988983	1.4835	1.044	1.0443	12.5319	0.4391	5.2691
1411	0.989061	1.4836	1.044	1.0443	12.5319	0.4393	5.2704
1411.2	0.989138	1.4837	1.044	1.0443	12.5319	0.4394	5.2718
1411.4	0.989215	1.4838	1.044	1.0443	12.5319	0.4395	5.2732
1411.6	0.989293	1.4839	1.044	1.0443	12.5319	0.4396	5.2746
1411.8	0.98937	1.4841	1.044	1.0443	12.5319	0.4397	5.2760
1412	0.989447	1.4842	1.044	1.0443	12.5319	0.4398	5.2774
1412.2	0.989524	1.4843	1.044	1.0443	12.5319	0.4400	5.2788
1412.4	0.989601	1.4844	1.044	1.0443	12.5319	0.4401	5.2802
1412.6	0.989679	1.4845	1.044	1.0443	12.5319	0.4402	5.2816
1412.8	0.989756	1.4846	1.044	1.0443	12.5319	0.4403	5.2830
1413	0.989833	1.4847	1.044	1.0443	12.5319	0.4404	5.2844
1413.2	0.98991	1.4849	1.044	1.0443	12.5319	0.4405	5.2857
1413.4	0.989987	1.4850	1.044	1.0443	12.5319	0.4407	5.2871
1413.6	0.990064	1.4851	1.044	1.0443	12.5319	0.4408	5.2885
1413.8	0.990141	1.4852	1.044	1.0443	12.5319	0.4409	5.2899
1414	0.990218	1.4853	1.044	1.0443	12.5319	0.4410	5.2913
1414.2	0.990295	1.4854	1.044	1.0443	12.5319	0.4411	5.2927
1414.4	0.990372	1.4856	1.044	1.0443	12.5319	0.4412	5.2941
1414.6	0.990449	1.4857	1.044	1.0443	12.5319	0.4413	5.2954
1414.8	0.990526	1.4858	1.044	1.0443	12.5319	0.4415	5.2968
1415	0.990602	1.4859	1.044	1.0443	12.5319	0.4416	5.2982
1415.2	0.990679	1.4860	1.044	1.0443	12.5319	0.4417	5.2996
1415.4	0.990756	1.4861	1.044	1.0443	12.5319	0.4418	5.3010
1415.6	0.990833	1.4862	1.044	1.0443	12.5319	0.4419	5.3024
1415.8	0.99091	1.4864	1.044	1.0443	12.5319	0.4420	5.3037
1416	0.990986	1.4865	1.044	1.0443	12.5319	0.4422	5.3051
1416.2	0.991063	1.4866	1.044	1.0443	12.5319	0.4423	5.3065
1416.4	0.99114	1.4867	1.044	1.0443	12.5319	0.4424	5.3079
1416.6	0.991216	1.4868	1.044	1.0443	12.5319	0.4425	5.3093
1416.8	0.991293	1.4869	1.044	1.0443	12.5319	0.4426	5.3106
1417	0.991369	1.4871	1.044	1.0443	12.5319	0.4427	5.3120
1417.2	0.991446	1.4872	1.044	1.0443	12.5319	0.4428	5.3134
1417.4	0.991522	1.4873	1.044	1.0443	12.5319	0.4430	5.3148
1417.6	0.991599	1.4874	1.044	1.0443	12.5319	0.4431	5.3161
1417.8	0.991675	1.4875	1.044	1.0443	12.5319	0.4432	5.3175

1418	0.991752	1.4876	1.044	1.0443	12.5319	0.4433	5.3189
1418.2	0.991828	1.4877	1.044	1.0443	12.5319	0.4434	5.3203
1418.4	0.991904	1.4879	1.044	1.0443	12.5319	0.4435	5.3216
1418.6	0.991981	1.4880	1.044	1.0443	12.5319	0.4436	5.3230
1418.8	0.992057	1.4881	1.044	1.0443	12.5319	0.4438	5.3244
1419	0.992133	1.4882	1.044	1.0443	12.5319	0.4439	5.3258
1419.2	0.99221	1.4883	1.044	1.0443	12.5319	0.4440	5.3271
1419.4	0.992286	1.4884	1.044	1.0443	12.5319	0.4441	5.3285
1419.6	0.992362	1.4885	1.044	1.0443	12.5319	0.4442	5.3299
1419.8	0.992438	1.4887	1.044	1.0443	12.5319	0.4443	5.3313
1420	0.992514	1.4888	1.044	1.0443	12.5319	0.4444	5.3326
1420.2	0.992591	1.4889	1.044	1.0443	12.5319	0.4446	5.3340
1420.4	0.992667	1.4890	1.044	1.0443	12.5319	0.4447	5.3354
1420.6	0.992743	1.4891	1.044	1.0443	12.5319	0.4448	5.3367
1420.8	0.992819	1.4892	1.044	1.0443	12.5319	0.4449	5.3381
1421	0.992895	1.4893	1.044	1.0443	12.5319	0.4450	5.3395
1421.2	0.992971	1.4895	1.044	1.0443	12.5319	0.4451	5.3408
1421.4	0.993047	1.4896	1.044	1.0443	12.5319	0.4452	5.3422
1421.6	0.993123	1.4897	1.044	1.0443	12.5319	0.4454	5.3436
1421.8	0.993199	1.4898	1.044	1.0443	12.5319	0.4455	5.3449
1422	0.993275	1.4899	1.044	1.0443	12.5319	0.4456	5.3463
1422.2	0.99335	1.4900	1.044	1.0443	12.5319	0.4457	5.3477
1422.4	0.993426	1.4901	1.044	1.0443	12.5319	0.4458	5.3490
1422.6	0.993502	1.4903	1.044	1.0443	12.5319	0.4459	5.3504
1422.8	0.993578	1.4904	1.044	1.0443	12.5319	0.4460	5.3518
1423	0.993654	1.4905	1.044	1.0443	12.5319	0.4462	5.3531
1423.2	0.993729	1.4906	1.044	1.0443	12.5319	0.4463	5.3545
1423.4	0.993805	1.4907	1.044	1.0443	12.5319	0.4464	5.3559
1423.6	0.993881	1.4908	1.044	1.0443	12.5319	0.4465	5.3572
1423.8	0.993956	1.4909	1.044	1.0443	12.5319	0.4466	5.3586
1424	0.994032	1.4910	1.044	1.0443	12.5319	0.4467	5.3600
1424.2	0.994108	1.4912	1.044	1.0443	12.5319	0.4468	5.3613
1424.4	0.994183	1.4913	1.044	1.0443	12.5319	0.4469	5.3627
1424.6	0.994259	1.4914	1.044	1.0443	12.5319	0.4471	5.3640
1424.8	0.994334	1.4915	1.044	1.0443	12.5319	0.4472	5.3654
1425	0.99441	1.4916	1.044	1.0443	12.5319	0.4473	5.3668
1425.2	0.994485	1.4917	1.044	1.0443	12.5319	0.4474	5.3681
1425.4	0.994561	1.4918	1.044	1.0443	12.5319	0.4475	5.3695
1425.6	0.994636	1.4920	1.044	1.0443	12.5319	0.4476	5.3708
1425.8	0.994712	1.4921	1.044	1.0443	12.5319	0.4477	5.3722
1426	0.994787	1.4922	1.044	1.0443	12.5319	0.4479	5.3735
1426.2	0.994862	1.4923	1.044	1.0443	12.5319	0.4480	5.3749
1426.4	0.994938	1.4924	1.044	1.0443	12.5319	0.4481	5.3763
1426.6	0.995013	1.4925	1.044	1.0443	12.5319	0.4482	5.3776
1426.8	0.995088	1.4926	1.044	1.0443	12.5319	0.4483	5.3790
1427	0.995163	1.4927	1.044	1.0443	12.5319	0.4484	5.3803
1427.2	0.995239	1.4929	1.044	1.0443	12.5319	0.4485	5.3817

1427.4	0.995314	1.4930	1.044	1.0443	12.5319	0.4486	5.3830
1427.6	0.995389	1.4931	1.044	1.0443	12.5319	0.4488	5.3844
1427.8	0.995464	1.4932	1.044	1.0443	12.5319	0.4489	5.3857
1428	0.995539	1.4933	1.044	1.0443	12.5319	0.4490	5.3871
1428.2	0.995614	1.4934	1.044	1.0443	12.5319	0.4491	5.3884
1428.4	0.995689	1.4935	1.044	1.0443	12.5319	0.4492	5.3898
1428.6	0.995764	1.4936	1.044	1.0443	12.5319	0.4493	5.3911
1428.8	0.995839	1.4938	1.044	1.0443	12.5319	0.4494	5.3925
1429	0.995914	1.4939	1.044	1.0443	12.5319	0.4495	5.3938
1429.2	0.995989	1.4940	1.044	1.0443	12.5319	0.4497	5.3952
1429.4	0.996064	1.4941	1.044	1.0443	12.5319	0.4498	5.3965
1429.6	0.996139	1.4942	1.044	1.0443	12.5319	0.4499	5.3979
1429.8	0.996214	1.4943	1.044	1.0443	12.5319	0.4500	5.3992
1430	0.996289	1.4944	1.044	1.0443	12.5319	0.4501	5.4006
1430.2	0.996364	1.4945	1.044	1.0443	12.5319	0.4502	5.4019
1430.4	0.996439	1.4947	1.044	1.0443	12.5319	0.4503	5.4033
1430.6	0.996513	1.4948	1.044	1.0443	12.5319	0.4504	5.4046
1430.8	0.996588	1.4949	1.044	1.0443	12.5319	0.4506	5.4060
1431	0.996663	1.4950	1.044	1.0443	12.5319	0.4507	5.4073
1431.2	0.996737	1.4951	1.044	1.0443	12.5319	0.4508	5.4087
1431.4	0.996812	1.4952	1.044	1.0443	12.5319	0.4509	5.4100
1431.6	0.996887	1.4953	1.044	1.0443	12.5319	0.4510	5.4113
1431.8	0.996961	1.4954	1.044	1.0443	12.5319	0.4511	5.4127
1432	0.997036	1.4956	1.044	1.0443	12.5319	0.4512	5.4140
1432.2	0.997111	1.4957	1.044	1.0443	12.5319	0.4513	5.4154
1432.4	0.997185	1.4958	1.044	1.0443	12.5319	0.4514	5.4167
1432.6	0.99726	1.4959	1.044	1.0443	12.5319	0.4516	5.4181
1432.8	0.997334	1.4960	1.044	1.0443	12.5319	0.4517	5.4194
1433	0.997409	1.4961	1.044	1.0443	12.5319	0.4518	5.4207
1433.2	0.997483	1.4962	1.044	1.0443	12.5319	0.4519	5.4221
1433.4	0.997558	1.4963	1.044	1.0443	12.5319	0.4520	5.4234
1433.6	0.997632	1.4964	1.044	1.0443	12.5319	0.4521	5.4248
1433.8	0.997706	1.4966	1.044	1.0443	12.5319	0.4522	5.4261
1434	0.997781	1.4967	1.044	1.0443	12.5319	0.4523	5.4274
1434.2	0.997855	1.4968	1.044	1.0443	12.5319	0.4525	5.4288
1434.4	0.997929	1.4969	1.044	1.0443	12.5319	0.4526	5.4301
1434.6	0.998004	1.4970	1.044	1.0443	12.5319	0.4527	5.4315
1434.8	0.998078	1.4971	1.044	1.0443	12.5319	0.4528	5.4328
1435	0.998152	1.4972	1.044	1.0443	12.5319	0.4529	5.4341
1435.2	0.998226	1.4973	1.044	1.0443	12.5319	0.4530	5.4355
1435.4	0.998301	1.4975	1.044	1.0443	12.5319	0.4531	5.4368
1435.6	0.998375	1.4976	1.044	1.0443	12.5319	0.4532	5.4381
1435.8	0.998449	1.4977	1.044	1.0443	12.5319	0.4533	5.4395
1436	0.998523	1.4978	1.044	1.0443	12.5319	0.4535	5.4408
1436.2	0.998597	1.4979	1.044	1.0443	12.5319	0.4536	5.4421
1436.4	0.998671	1.4980	1.044	1.0443	12.5319	0.4537	5.4435
1436.6	0.998745	1.4981	1.044	1.0443	12.5319	0.4538	5.4448

1436.8	0.998819	1.4982	1.044	1.0443	12.5319	0.4539	5.4461
1437	0.998893	1.4983	1.044	1.0443	12.5319	0.4540	5.4475
1437.2	0.998967	1.4985	1.044	1.0443	12.5319	0.4541	5.4488
1437.4	0.999041	1.4986	1.044	1.0443	12.5319	0.4542	5.4501
1437.6	0.999115	1.4987	1.044	1.0443	12.5319	0.4543	5.4515
1437.8	0.999189	1.4988	1.044	1.0443	12.5319	0.4545	5.4528
1438	0.999263	1.4989	1.044	1.0443	12.5319	0.4546	5.4541
1438.2	0.999337	1.4990	1.044	1.0443	12.5319	0.4547	5.4554
1438.4	0.99941	1.4991	1.044	1.0443	12.5319	0.4548	5.4568
1438.6	0.999484	1.4992	1.044	1.0443	12.5319	0.4549	5.4581
1438.8	0.999558	1.4993	1.044	1.0443	12.5319	0.4550	5.4594
1439	0.999632	1.4994	1.044	1.0443	12.5319	0.4551	5.4608
1439.2	0.999705	1.4996	1.044	1.0443	12.5319	0.4552	5.4621
1439.4	0.999779	1.4997	1.044	1.0443	12.5319	0.4553	5.4634
1439.6	0.999853	1.4998	1.044	1.0443	12.5319	0.4555	5.4647
1439.8	0.999926	1.4999	1.044	1.0443	12.5319	0.4556	5.4661
1440	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4674
1440.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1440.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1440.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1440.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1441	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1441.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1441.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1441.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1441.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1442	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1442.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1442.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1442.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1442.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1443	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1443.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1443.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1443.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1444	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1444.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1444.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1445	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1445.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1445.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1445.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1445.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1446	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681

1446.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1446.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1446.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1446.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1448	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1449.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1450	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1450.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1451.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1460.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1461	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1461.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1462.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1463	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1463.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1463.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1463.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1464	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1464.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1464.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1464.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1464.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681

1465	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1465.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
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1465.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1465.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1466	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1466.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1466.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1466.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1466.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1467	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1467.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1467.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1467.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1467.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1468	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1468.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1468.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1468.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1468.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1469	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1469.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1469.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1469.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1469.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1470	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1470.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1470.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1470.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1470.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1471	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1471.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1471.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1471.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1471.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1472	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1472.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1472.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1472.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1472.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1473	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1473.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1473.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1473.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1473.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1474	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1474.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681

1474.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1474.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1474.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1475	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1475.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1475.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1475.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1475.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1476	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1476.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1476.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1476.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1476.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1477	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1477.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1477.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1477.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1477.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1478	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1478.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1478.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1478.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1478.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1479	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1479.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1479.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1479.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1479.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1480	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1480.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1480.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1480.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1480.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1481	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1481.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1481.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1481.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1481.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1482	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1482.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1482.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1482.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1482.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1483	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1483.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1483.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1483.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681

1483.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1484	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1484.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1484.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1484.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1484.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1485	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1485.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1485.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1485.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1485.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1486	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1486.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1486.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1486.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1486.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1487	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1487.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1487.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1487.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1487.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1488	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1488.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1488.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1488.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1488.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1489	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1489.2	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1489.4	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1489.6	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1489.8	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
1490	1	1.5000	1.044	1.0443	12.5319	0.4557	5.4681
					49832		7524

Biofiltration Summary

Bouquet - Tract 82126

Proposed Condition

Area 400A

Time (min)	Q (cfs)	1.5*Q (cfs)	Biofiltration (5 in/hr)	Biofiltered Rate (cfs)	Biofiltered Volume (cf)	Stored Flow (cfs)	Stored Vol (cf)	Area
0	0	0.0000	0.156	0	0	0.0000	0	1345
0.2	7.36E-05	0.0001	0.156	0.0001	0.0007	0.0000	0.0000	
0.4	0.000147	0.0002	0.156	0.0002	0.0020	0.0000	0.0000	
0.6	0.000221	0.0003	0.156	0.0003	0.0033	0.0000	0.0000	
0.8	0.000294	0.0004	0.156	0.0004	0.0046	0.0000	0.0000	
1	0.000368	0.0006	0.156	0.0006	0.0060	0.0000	0.0000	
1.2	0.000442	0.0007	0.156	0.0007	0.0073	0.0000	0.0000	
1.4	0.000515	0.0008	0.156	0.0008	0.0086	0.0000	0.0000	
1.6	0.000589	0.0009	0.156	0.0009	0.0099	0.0000	0.0000	
1.8	0.000663	0.0010	0.156	0.0010	0.0113	0.0000	0.0000	
2	0.000736	0.0011	0.156	0.0011	0.0126	0.0000	0.0000	
2.2	0.00081	0.0012	0.156	0.0012	0.0139	0.0000	0.0000	
2.4	0.000884	0.0013	0.156	0.0013	0.0152	0.0000	0.0000	
2.6	0.000957	0.0014	0.156	0.0014	0.0166	0.0000	0.0000	
2.8	0.001031	0.0015	0.156	0.0015	0.0179	0.0000	0.0000	
3	0.001105	0.0017	0.156	0.0017	0.0192	0.0000	0.0000	
3.2	0.001179	0.0018	0.156	0.0018	0.0206	0.0000	0.0000	
3.4	0.001252	0.0019	0.156	0.0019	0.0219	0.0000	0.0000	
3.6	0.001326	0.0020	0.156	0.0020	0.0232	0.0000	0.0000	
3.8	0.0014	0.0021	0.156	0.0021	0.0245	0.0000	0.0000	
4	0.001473	0.0022	0.156	0.0022	0.0259	0.0000	0.0000	
4.2	0.001547	0.0023	0.156	0.0023	0.0272	0.0000	0.0000	
4.4	0.001621	0.0024	0.156	0.0024	0.0285	0.0000	0.0000	
4.6	0.001695	0.0025	0.156	0.0025	0.0298	0.0000	0.0000	
4.8	0.001768	0.0027	0.156	0.0027	0.0312	0.0000	0.0000	
5	0.001842	0.0028	0.156	0.0028	0.0325	0.0000	0.0000	
5.2	0.001916	0.0029	0.156	0.0029	0.0338	0.0000	0.0000	
5.4	0.00199	0.0030	0.156	0.0030	0.0352	0.0000	0.0000	
5.6	0.002063	0.0031	0.156	0.0031	0.0365	0.0000	0.0000	
5.8	0.002137	0.0032	0.156	0.0032	0.0378	0.0000	0.0000	
6	0.002211	0.0033	0.156	0.0033	0.0391	0.0000	0.0000	
6.2	0.002285	0.0034	0.156	0.0034	0.0405	0.0000	0.0000	
6.4	0.002359	0.0035	0.156	0.0035	0.0418	0.0000	0.0000	
6.6	0.002432	0.0036	0.156	0.0036	0.0431	0.0000	0.0000	
6.8	0.002506	0.0038	0.156	0.0038	0.0444	0.0000	0.0000	
7	0.00258	0.0039	0.156	0.0039	0.0458	0.0000	0.0000	
7.2	0.002654	0.0040	0.156	0.0040	0.0471	0.0000	0.0000	
7.4	0.002728	0.0041	0.156	0.0041	0.0484	0.0000	0.0000	
7.6	0.002802	0.0042	0.156	0.0042	0.0498	0.0000	0.0000	
7.8	0.002875	0.0043	0.156	0.0043	0.0511	0.0000	0.0000	

8	0.002949	0.0044	0.156	0.0044	0.0524	0.0000	0.0000
8.2	0.003023	0.0045	0.156	0.0045	0.0538	0.0000	0.0000
8.4	0.003097	0.0046	0.156	0.0046	0.0551	0.0000	0.0000
8.6	0.003171	0.0048	0.156	0.0048	0.0564	0.0000	0.0000
8.8	0.003245	0.0049	0.156	0.0049	0.0577	0.0000	0.0000
9	0.003319	0.0050	0.156	0.0050	0.0591	0.0000	0.0000
9.2	0.003392	0.0051	0.156	0.0051	0.0604	0.0000	0.0000
9.4	0.003466	0.0052	0.156	0.0052	0.0617	0.0000	0.0000
9.6	0.00354	0.0053	0.156	0.0053	0.0631	0.0000	0.0000
9.8	0.003614	0.0054	0.156	0.0054	0.0644	0.0000	0.0000
10	0.003688	0.0055	0.156	0.0055	0.0657	0.0000	0.0000
10.2	0.003762	0.0056	0.156	0.0056	0.0671	0.0000	0.0000
10.4	0.003836	0.0058	0.156	0.0058	0.0684	0.0000	0.0000
10.6	0.00391	0.0059	0.156	0.0059	0.0697	0.0000	0.0000
10.8	0.003984	0.0060	0.156	0.0060	0.0710	0.0000	0.0000
11	0.004058	0.0061	0.156	0.0061	0.0724	0.0000	0.0000
11.2	0.004132	0.0062	0.156	0.0062	0.0737	0.0000	0.0000
11.4	0.004206	0.0063	0.156	0.0063	0.0750	0.0000	0.0000
11.6	0.00428	0.0064	0.156	0.0064	0.0764	0.0000	0.0000
11.8	0.004354	0.0065	0.156	0.0065	0.0777	0.0000	0.0000
12	0.004428	0.0066	0.156	0.0066	0.0790	0.0000	0.0000
12.2	0.004502	0.0068	0.156	0.0068	0.0804	0.0000	0.0000
12.4	0.004575	0.0069	0.156	0.0069	0.0817	0.0000	0.0000
12.6	0.004649	0.0070	0.156	0.0070	0.0830	0.0000	0.0000
12.8	0.004723	0.0071	0.156	0.0071	0.0844	0.0000	0.0000
13	0.004797	0.0072	0.156	0.0072	0.0857	0.0000	0.0000
13.2	0.004871	0.0073	0.156	0.0073	0.0870	0.0000	0.0000
13.4	0.004946	0.0074	0.156	0.0074	0.0884	0.0000	0.0000
13.6	0.00502	0.0075	0.156	0.0075	0.0897	0.0000	0.0000
13.8	0.005094	0.0076	0.156	0.0076	0.0910	0.0000	0.0000
14	0.005168	0.0078	0.156	0.0078	0.0924	0.0000	0.0000
14.2	0.005242	0.0079	0.156	0.0079	0.0937	0.0000	0.0000
14.4	0.005316	0.0080	0.156	0.0080	0.0950	0.0000	0.0000
14.6	0.00539	0.0081	0.156	0.0081	0.0963	0.0000	0.0000
14.8	0.005464	0.0082	0.156	0.0082	0.0977	0.0000	0.0000
15	0.005538	0.0083	0.156	0.0083	0.0990	0.0000	0.0000
15.2	0.005612	0.0084	0.156	0.0084	0.1003	0.0000	0.0000
15.4	0.005686	0.0085	0.156	0.0085	0.1017	0.0000	0.0000
15.6	0.00576	0.0086	0.156	0.0086	0.1030	0.0000	0.0000
15.8	0.005834	0.0088	0.156	0.0088	0.1043	0.0000	0.0000
16	0.005908	0.0089	0.156	0.0089	0.1057	0.0000	0.0000
16.2	0.005982	0.0090	0.156	0.0090	0.1070	0.0000	0.0000
16.4	0.006056	0.0091	0.156	0.0091	0.1083	0.0000	0.0000
16.6	0.006131	0.0092	0.156	0.0092	0.1097	0.0000	0.0000
16.8	0.006205	0.0093	0.156	0.0093	0.1110	0.0000	0.0000
17	0.006279	0.0094	0.156	0.0094	0.1124	0.0000	0.0000
17.2	0.006353	0.0095	0.156	0.0095	0.1137	0.0000	0.0000

17.4	0.006427	0.0096	0.156	0.0096	0.1150	0.0000	0.0000
17.6	0.006501	0.0098	0.156	0.0098	0.1164	0.0000	0.0000
17.8	0.006575	0.0099	0.156	0.0099	0.1177	0.0000	0.0000
18	0.00665	0.0100	0.156	0.0100	0.1190	0.0000	0.0000
18.2	0.006724	0.0101	0.156	0.0101	0.1204	0.0000	0.0000
18.4	0.006798	0.0102	0.156	0.0102	0.1217	0.0000	0.0000
18.6	0.006872	0.0103	0.156	0.0103	0.1230	0.0000	0.0000
18.8	0.006946	0.0104	0.156	0.0104	0.1244	0.0000	0.0000
19	0.00702	0.0105	0.156	0.0105	0.1257	0.0000	0.0000
19.2	0.007095	0.0106	0.156	0.0106	0.1270	0.0000	0.0000
19.4	0.007169	0.0108	0.156	0.0108	0.1284	0.0000	0.0000
19.6	0.007243	0.0109	0.156	0.0109	0.1297	0.0000	0.0000
19.8	0.007317	0.0110	0.156	0.0110	0.1310	0.0000	0.0000
20	0.007391	0.0111	0.156	0.0111	0.1324	0.0000	0.0000
20.2	0.007466	0.0112	0.156	0.0112	0.1337	0.0000	0.0000
20.4	0.00754	0.0113	0.156	0.0113	0.1350	0.0000	0.0000
20.6	0.007614	0.0114	0.156	0.0114	0.1364	0.0000	0.0000
20.8	0.007688	0.0115	0.156	0.0115	0.1377	0.0000	0.0000
21	0.007763	0.0116	0.156	0.0116	0.1391	0.0000	0.0000
21.2	0.007837	0.0118	0.156	0.0118	0.1404	0.0000	0.0000
21.4	0.007911	0.0119	0.156	0.0119	0.1417	0.0000	0.0000
21.6	0.007985	0.0120	0.156	0.0120	0.1431	0.0000	0.0000
21.8	0.00806	0.0121	0.156	0.0121	0.1444	0.0000	0.0000
22	0.008134	0.0122	0.156	0.0122	0.1457	0.0000	0.0000
22.2	0.008208	0.0123	0.156	0.0123	0.1471	0.0000	0.0000
22.4	0.008282	0.0124	0.156	0.0124	0.1484	0.0000	0.0000
22.6	0.008357	0.0125	0.156	0.0125	0.1498	0.0000	0.0000
22.8	0.008431	0.0126	0.156	0.0126	0.1511	0.0000	0.0000
23	0.008505	0.0128	0.156	0.0128	0.1524	0.0000	0.0000
23.2	0.00858	0.0129	0.156	0.0129	0.1538	0.0000	0.0000
23.4	0.008654	0.0130	0.156	0.0130	0.1551	0.0000	0.0000
23.6	0.008728	0.0131	0.156	0.0131	0.1564	0.0000	0.0000
23.8	0.008803	0.0132	0.156	0.0132	0.1578	0.0000	0.0000
24	0.008877	0.0133	0.156	0.0133	0.1591	0.0000	0.0000
24.2	0.008951	0.0134	0.156	0.0134	0.1605	0.0000	0.0000
24.4	0.009026	0.0135	0.156	0.0135	0.1618	0.0000	0.0000
24.6	0.0091	0.0137	0.156	0.0137	0.1631	0.0000	0.0000
24.8	0.009174	0.0138	0.156	0.0138	0.1645	0.0000	0.0000
25	0.009249	0.0139	0.156	0.0139	0.1658	0.0000	0.0000
25.2	0.009323	0.0140	0.156	0.0140	0.1671	0.0000	0.0000
25.4	0.009398	0.0141	0.156	0.0141	0.1685	0.0000	0.0000
25.6	0.009472	0.0142	0.156	0.0142	0.1698	0.0000	0.0000
25.8	0.009546	0.0143	0.156	0.0143	0.1712	0.0000	0.0000
26	0.009621	0.0144	0.156	0.0144	0.1725	0.0000	0.0000
26.2	0.009695	0.0145	0.156	0.0145	0.1738	0.0000	0.0000
26.4	0.00977	0.0147	0.156	0.0147	0.1752	0.0000	0.0000
26.6	0.009844	0.0148	0.156	0.0148	0.1765	0.0000	0.0000

26.8	0.009918	0.0149	0.156	0.0149	0.1779	0.0000	0.0000
27	0.009993	0.0150	0.156	0.0150	0.1792	0.0000	0.0000
27.2	0.010067	0.0151	0.156	0.0151	0.1805	0.0000	0.0000
27.4	0.010142	0.0152	0.156	0.0152	0.1819	0.0000	0.0000
27.6	0.010216	0.0153	0.156	0.0153	0.1832	0.0000	0.0000
27.8	0.010291	0.0154	0.156	0.0154	0.1846	0.0000	0.0000
28	0.010365	0.0155	0.156	0.0155	0.1859	0.0000	0.0000
28.2	0.01044	0.0157	0.156	0.0157	0.1872	0.0000	0.0000
28.4	0.010514	0.0158	0.156	0.0158	0.1886	0.0000	0.0000
28.6	0.010589	0.0159	0.156	0.0159	0.1899	0.0000	0.0000
28.8	0.010663	0.0160	0.156	0.0160	0.1913	0.0000	0.0000
29	0.010738	0.0161	0.156	0.0161	0.1926	0.0000	0.0000
29.2	0.010812	0.0162	0.156	0.0162	0.1939	0.0000	0.0000
29.4	0.010887	0.0163	0.156	0.0163	0.1953	0.0000	0.0000
29.6	0.010961	0.0164	0.156	0.0164	0.1966	0.0000	0.0000
29.8	0.011036	0.0166	0.156	0.0166	0.1980	0.0000	0.0000
30	0.01111	0.0167	0.156	0.0167	0.1993	0.0000	0.0000
30.2	0.011185	0.0168	0.156	0.0168	0.2007	0.0000	0.0000
30.4	0.011259	0.0169	0.156	0.0169	0.2020	0.0000	0.0000
30.6	0.011334	0.0170	0.156	0.0170	0.2033	0.0000	0.0000
30.8	0.011408	0.0171	0.156	0.0171	0.2047	0.0000	0.0000
31	0.011483	0.0172	0.156	0.0172	0.2060	0.0000	0.0000
31.2	0.011557	0.0173	0.156	0.0173	0.2074	0.0000	0.0000
31.4	0.011632	0.0174	0.156	0.0174	0.2087	0.0000	0.0000
31.6	0.011707	0.0176	0.156	0.0176	0.2100	0.0000	0.0000
31.8	0.011781	0.0177	0.156	0.0177	0.2114	0.0000	0.0000
32	0.011856	0.0178	0.156	0.0178	0.2127	0.0000	0.0000
32.2	0.01193	0.0179	0.156	0.0179	0.2141	0.0000	0.0000
32.4	0.012005	0.0180	0.156	0.0180	0.2154	0.0000	0.0000
32.6	0.01208	0.0181	0.156	0.0181	0.2168	0.0000	0.0000
32.8	0.012154	0.0182	0.156	0.0182	0.2181	0.0000	0.0000
33	0.012229	0.0183	0.156	0.0183	0.2194	0.0000	0.0000
33.2	0.012303	0.0185	0.156	0.0185	0.2208	0.0000	0.0000
33.4	0.012378	0.0186	0.156	0.0186	0.2221	0.0000	0.0000
33.6	0.012453	0.0187	0.156	0.0187	0.2235	0.0000	0.0000
33.8	0.012527	0.0188	0.156	0.0188	0.2248	0.0000	0.0000
34	0.012602	0.0189	0.156	0.0189	0.2262	0.0000	0.0000
34.2	0.012677	0.0190	0.156	0.0190	0.2275	0.0000	0.0000
34.4	0.012751	0.0191	0.156	0.0191	0.2289	0.0000	0.0000
34.6	0.012826	0.0192	0.156	0.0192	0.2302	0.0000	0.0000
34.8	0.012901	0.0194	0.156	0.0194	0.2315	0.0000	0.0000
35	0.012975	0.0195	0.156	0.0195	0.2329	0.0000	0.0000
35.2	0.01305	0.0196	0.156	0.0196	0.2342	0.0000	0.0000
35.4	0.013125	0.0197	0.156	0.0197	0.2356	0.0000	0.0000
35.6	0.013199	0.0198	0.156	0.0198	0.2369	0.0000	0.0000
35.8	0.013274	0.0199	0.156	0.0199	0.2383	0.0000	0.0000
36	0.013349	0.0200	0.156	0.0200	0.2396	0.0000	0.0000

36.2	0.013424	0.0201	0.156	0.0201	0.2410	0.0000	0.0000
36.4	0.013498	0.0202	0.156	0.0202	0.2423	0.0000	0.0000
36.6	0.013573	0.0204	0.156	0.0204	0.2436	0.0000	0.0000
36.8	0.013648	0.0205	0.156	0.0205	0.2450	0.0000	0.0000
37	0.013722	0.0206	0.156	0.0206	0.2463	0.0000	0.0000
37.2	0.013797	0.0207	0.156	0.0207	0.2477	0.0000	0.0000
37.4	0.013872	0.0208	0.156	0.0208	0.2490	0.0000	0.0000
37.6	0.013947	0.0209	0.156	0.0209	0.2504	0.0000	0.0000
37.8	0.014022	0.0210	0.156	0.0210	0.2517	0.0000	0.0000
38	0.014096	0.0211	0.156	0.0211	0.2531	0.0000	0.0000
38.2	0.014171	0.0213	0.156	0.0213	0.2544	0.0000	0.0000
38.4	0.014246	0.0214	0.156	0.0214	0.2558	0.0000	0.0000
38.6	0.014321	0.0215	0.156	0.0215	0.2571	0.0000	0.0000
38.8	0.014395	0.0216	0.156	0.0216	0.2584	0.0000	0.0000
39	0.01447	0.0217	0.156	0.0217	0.2598	0.0000	0.0000
39.2	0.014545	0.0218	0.156	0.0218	0.2611	0.0000	0.0000
39.4	0.01462	0.0219	0.156	0.0219	0.2625	0.0000	0.0000
39.6	0.014695	0.0220	0.156	0.0220	0.2638	0.0000	0.0000
39.8	0.01477	0.0222	0.156	0.0222	0.2652	0.0000	0.0000
40	0.014844	0.0223	0.156	0.0223	0.2665	0.0000	0.0000
40.2	0.014919	0.0224	0.156	0.0224	0.2679	0.0000	0.0000
40.4	0.014994	0.0225	0.156	0.0225	0.2692	0.0000	0.0000
40.6	0.015069	0.0226	0.156	0.0226	0.2706	0.0000	0.0000
40.8	0.015144	0.0227	0.156	0.0227	0.2719	0.0000	0.0000
41	0.015219	0.0228	0.156	0.0228	0.2733	0.0000	0.0000
41.2	0.015294	0.0229	0.156	0.0229	0.2746	0.0000	0.0000
41.4	0.015369	0.0231	0.156	0.0231	0.2760	0.0000	0.0000
41.6	0.015443	0.0232	0.156	0.0232	0.2773	0.0000	0.0000
41.8	0.015518	0.0233	0.156	0.0233	0.2787	0.0000	0.0000
42	0.015593	0.0234	0.156	0.0234	0.2800	0.0000	0.0000
42.2	0.015668	0.0235	0.156	0.0235	0.2814	0.0000	0.0000
42.4	0.015743	0.0236	0.156	0.0236	0.2827	0.0000	0.0000
42.6	0.015818	0.0237	0.156	0.0237	0.2840	0.0000	0.0000
42.8	0.015893	0.0238	0.156	0.0238	0.2854	0.0000	0.0000
43	0.015968	0.0240	0.156	0.0240	0.2867	0.0000	0.0000
43.2	0.016043	0.0241	0.156	0.0241	0.2881	0.0000	0.0000
43.4	0.016118	0.0242	0.156	0.0242	0.2894	0.0000	0.0000
43.6	0.016193	0.0243	0.156	0.0243	0.2908	0.0000	0.0000
43.8	0.016268	0.0244	0.156	0.0244	0.2921	0.0000	0.0000
44	0.016343	0.0245	0.156	0.0245	0.2935	0.0000	0.0000
44.2	0.016418	0.0246	0.156	0.0246	0.2948	0.0000	0.0000
44.4	0.016493	0.0247	0.156	0.0247	0.2962	0.0000	0.0000
44.6	0.016568	0.0249	0.156	0.0249	0.2975	0.0000	0.0000
44.8	0.016643	0.0250	0.156	0.0250	0.2989	0.0000	0.0000
45	0.016718	0.0251	0.156	0.0251	0.3002	0.0000	0.0000
45.2	0.016793	0.0252	0.156	0.0252	0.3016	0.0000	0.0000
45.4	0.016868	0.0253	0.156	0.0253	0.3029	0.0000	0.0000

45.6	0.016943	0.0254	0.156	0.0254	0.3043	0.0000	0.0000
45.8	0.017018	0.0255	0.156	0.0255	0.3056	0.0000	0.0000
46	0.017093	0.0256	0.156	0.0256	0.3070	0.0000	0.0000
46.2	0.017168	0.0258	0.156	0.0258	0.3083	0.0000	0.0000
46.4	0.017243	0.0259	0.156	0.0259	0.3097	0.0000	0.0000
46.6	0.017318	0.0260	0.156	0.0260	0.3110	0.0000	0.0000
46.8	0.017393	0.0261	0.156	0.0261	0.3124	0.0000	0.0000
47	0.017468	0.0262	0.156	0.0262	0.3137	0.0000	0.0000
47.2	0.017543	0.0263	0.156	0.0263	0.3151	0.0000	0.0000
47.4	0.017618	0.0264	0.156	0.0264	0.3164	0.0000	0.0000
47.6	0.017693	0.0265	0.156	0.0265	0.3178	0.0000	0.0000
47.8	0.017768	0.0267	0.156	0.0267	0.3192	0.0000	0.0000
48	0.017843	0.0268	0.156	0.0268	0.3205	0.0000	0.0000
48.2	0.017918	0.0269	0.156	0.0269	0.3219	0.0000	0.0000
48.4	0.017993	0.0270	0.156	0.0270	0.3232	0.0000	0.0000
48.6	0.018069	0.0271	0.156	0.0271	0.3246	0.0000	0.0000
48.8	0.018144	0.0272	0.156	0.0272	0.3259	0.0000	0.0000
49	0.018219	0.0273	0.156	0.0273	0.3273	0.0000	0.0000
49.2	0.018294	0.0274	0.156	0.0274	0.3286	0.0000	0.0000
49.4	0.018369	0.0276	0.156	0.0276	0.3300	0.0000	0.0000
49.6	0.018444	0.0277	0.156	0.0277	0.3313	0.0000	0.0000
49.8	0.018519	0.0278	0.156	0.0278	0.3327	0.0000	0.0000
50	0.018595	0.0279	0.156	0.0279	0.3340	0.0000	0.0000
50.2	0.01867	0.0280	0.156	0.0280	0.3354	0.0000	0.0000
50.4	0.018745	0.0281	0.156	0.0281	0.3367	0.0000	0.0000
50.6	0.01882	0.0282	0.156	0.0282	0.3381	0.0000	0.0000
50.8	0.018895	0.0283	0.156	0.0283	0.3394	0.0000	0.0000
51	0.01897	0.0285	0.156	0.0285	0.3408	0.0000	0.0000
51.2	0.019046	0.0286	0.156	0.0286	0.3421	0.0000	0.0000
51.4	0.019121	0.0287	0.156	0.0287	0.3435	0.0000	0.0000
51.6	0.019196	0.0288	0.156	0.0288	0.3449	0.0000	0.0000
51.8	0.019271	0.0289	0.156	0.0289	0.3462	0.0000	0.0000
52	0.019347	0.0290	0.156	0.0290	0.3476	0.0000	0.0000
52.2	0.019422	0.0291	0.156	0.0291	0.3489	0.0000	0.0000
52.4	0.019497	0.0292	0.156	0.0292	0.3503	0.0000	0.0000
52.6	0.019572	0.0294	0.156	0.0294	0.3516	0.0000	0.0000
52.8	0.019647	0.0295	0.156	0.0295	0.3530	0.0000	0.0000
53	0.019723	0.0296	0.156	0.0296	0.3543	0.0000	0.0000
53.2	0.019798	0.0297	0.156	0.0297	0.3557	0.0000	0.0000
53.4	0.019873	0.0298	0.156	0.0298	0.3570	0.0000	0.0000
53.6	0.019949	0.0299	0.156	0.0299	0.3584	0.0000	0.0000
53.8	0.020024	0.0300	0.156	0.0300	0.3598	0.0000	0.0000
54	0.020099	0.0301	0.156	0.0301	0.3611	0.0000	0.0000
54.2	0.020174	0.0303	0.156	0.0303	0.3625	0.0000	0.0000
54.4	0.02025	0.0304	0.156	0.0304	0.3638	0.0000	0.0000
54.6	0.020325	0.0305	0.156	0.0305	0.3652	0.0000	0.0000
54.8	0.0204	0.0306	0.156	0.0306	0.3665	0.0000	0.0000

55	0.020476	0.0307	0.156	0.0307	0.3679	0.0000	0.0000
55.2	0.020551	0.0308	0.156	0.0308	0.3692	0.0000	0.0000
55.4	0.020626	0.0309	0.156	0.0309	0.3706	0.0000	0.0000
55.6	0.020702	0.0311	0.156	0.0311	0.3720	0.0000	0.0000
55.8	0.020777	0.0312	0.156	0.0312	0.3733	0.0000	0.0000
56	0.020852	0.0313	0.156	0.0313	0.3747	0.0000	0.0000
56.2	0.020928	0.0314	0.156	0.0314	0.3760	0.0000	0.0000
56.4	0.021003	0.0315	0.156	0.0315	0.3774	0.0000	0.0000
56.6	0.021078	0.0316	0.156	0.0316	0.3787	0.0000	0.0000
56.8	0.021154	0.0317	0.156	0.0317	0.3801	0.0000	0.0000
57	0.021229	0.0318	0.156	0.0318	0.3814	0.0000	0.0000
57.2	0.021305	0.0320	0.156	0.0320	0.3828	0.0000	0.0000
57.4	0.02138	0.0321	0.156	0.0321	0.3842	0.0000	0.0000
57.6	0.021455	0.0322	0.156	0.0322	0.3855	0.0000	0.0000
57.8	0.021531	0.0323	0.156	0.0323	0.3869	0.0000	0.0000
58	0.021606	0.0324	0.156	0.0324	0.3882	0.0000	0.0000
58.2	0.021682	0.0325	0.156	0.0325	0.3896	0.0000	0.0000
58.4	0.021757	0.0326	0.156	0.0326	0.3909	0.0000	0.0000
58.6	0.021833	0.0327	0.156	0.0327	0.3923	0.0000	0.0000
58.8	0.021908	0.0329	0.156	0.0329	0.3937	0.0000	0.0000
59	0.021983	0.0330	0.156	0.0330	0.3950	0.0000	0.0000
59.2	0.022059	0.0331	0.156	0.0331	0.3964	0.0000	0.0000
59.4	0.022134	0.0332	0.156	0.0332	0.3977	0.0000	0.0000
59.6	0.02221	0.0333	0.156	0.0333	0.3991	0.0000	0.0000
59.8	0.022285	0.0334	0.156	0.0334	0.4005	0.0000	0.0000
60	0.022361	0.0335	0.156	0.0335	0.4018	0.0000	0.0000
60.2	0.022436	0.0337	0.156	0.0337	0.4032	0.0000	0.0000
60.4	0.022512	0.0338	0.156	0.0338	0.4045	0.0000	0.0000
60.6	0.022587	0.0339	0.156	0.0339	0.4059	0.0000	0.0000
60.8	0.022663	0.0340	0.156	0.0340	0.4072	0.0000	0.0000
61	0.022738	0.0341	0.156	0.0341	0.4086	0.0000	0.0000
61.2	0.022814	0.0342	0.156	0.0342	0.4100	0.0000	0.0000
61.4	0.022889	0.0343	0.156	0.0343	0.4113	0.0000	0.0000
61.6	0.022965	0.0344	0.156	0.0344	0.4127	0.0000	0.0000
61.8	0.02304	0.0346	0.156	0.0346	0.4140	0.0000	0.0000
62	0.023116	0.0347	0.156	0.0347	0.4154	0.0000	0.0000
62.2	0.023191	0.0348	0.156	0.0348	0.4168	0.0000	0.0000
62.4	0.023267	0.0349	0.156	0.0349	0.4181	0.0000	0.0000
62.6	0.023343	0.0350	0.156	0.0350	0.4195	0.0000	0.0000
62.8	0.023418	0.0351	0.156	0.0351	0.4208	0.0000	0.0000
63	0.023494	0.0352	0.156	0.0352	0.4222	0.0000	0.0000
63.2	0.023569	0.0354	0.156	0.0354	0.4236	0.0000	0.0000
63.4	0.023645	0.0355	0.156	0.0355	0.4249	0.0000	0.0000
63.6	0.023721	0.0356	0.156	0.0356	0.4263	0.0000	0.0000
63.8	0.023796	0.0357	0.156	0.0357	0.4277	0.0000	0.0000
64	0.023872	0.0358	0.156	0.0358	0.4290	0.0000	0.0000
64.2	0.023947	0.0359	0.156	0.0359	0.4304	0.0000	0.0000

64.4	0.024023	0.0360	0.156	0.0360	0.4317	0.0000	0.0000
64.6	0.024099	0.0361	0.156	0.0361	0.4331	0.0000	0.0000
64.8	0.024174	0.0363	0.156	0.0363	0.4345	0.0000	0.0000
65	0.02425	0.0364	0.156	0.0364	0.4358	0.0000	0.0000
65.2	0.024326	0.0365	0.156	0.0365	0.4372	0.0000	0.0000
65.4	0.024401	0.0366	0.156	0.0366	0.4385	0.0000	0.0000
65.6	0.024477	0.0367	0.156	0.0367	0.4399	0.0000	0.0000
65.8	0.024553	0.0368	0.156	0.0368	0.4413	0.0000	0.0000
66	0.024628	0.0369	0.156	0.0369	0.4426	0.0000	0.0000
66.2	0.024704	0.0371	0.156	0.0371	0.4440	0.0000	0.0000
66.4	0.02478	0.0372	0.156	0.0372	0.4454	0.0000	0.0000
66.6	0.024855	0.0373	0.156	0.0373	0.4467	0.0000	0.0000
66.8	0.024931	0.0374	0.156	0.0374	0.4481	0.0000	0.0000
67	0.025007	0.0375	0.156	0.0375	0.4494	0.0000	0.0000
67.2	0.025082	0.0376	0.156	0.0376	0.4508	0.0000	0.0000
67.4	0.025158	0.0377	0.156	0.0377	0.4522	0.0000	0.0000
67.6	0.025234	0.0379	0.156	0.0379	0.4535	0.0000	0.0000
67.8	0.02531	0.0380	0.156	0.0380	0.4549	0.0000	0.0000
68	0.025385	0.0381	0.156	0.0381	0.4563	0.0000	0.0000
68.2	0.025461	0.0382	0.156	0.0382	0.4576	0.0000	0.0000
68.4	0.025537	0.0383	0.156	0.0383	0.4590	0.0000	0.0000
68.6	0.025613	0.0384	0.156	0.0384	0.4603	0.0000	0.0000
68.8	0.025688	0.0385	0.156	0.0385	0.4617	0.0000	0.0000
69	0.025764	0.0386	0.156	0.0386	0.4631	0.0000	0.0000
69.2	0.02584	0.0388	0.156	0.0388	0.4644	0.0000	0.0000
69.4	0.025916	0.0389	0.156	0.0389	0.4658	0.0000	0.0000
69.6	0.025992	0.0390	0.156	0.0390	0.4672	0.0000	0.0000
69.8	0.026067	0.0391	0.156	0.0391	0.4685	0.0000	0.0000
70	0.026143	0.0392	0.156	0.0392	0.4699	0.0000	0.0000
70.2	0.026219	0.0393	0.156	0.0393	0.4713	0.0000	0.0000
70.4	0.026295	0.0394	0.156	0.0394	0.4726	0.0000	0.0000
70.6	0.026371	0.0396	0.156	0.0396	0.4740	0.0000	0.0000
70.8	0.026446	0.0397	0.156	0.0397	0.4754	0.0000	0.0000
71	0.026522	0.0398	0.156	0.0398	0.4767	0.0000	0.0000
71.2	0.026598	0.0399	0.156	0.0399	0.4781	0.0000	0.0000
71.4	0.026674	0.0400	0.156	0.0400	0.4794	0.0000	0.0000
71.6	0.02675	0.0401	0.156	0.0401	0.4808	0.0000	0.0000
71.8	0.026826	0.0402	0.156	0.0402	0.4822	0.0000	0.0000
72	0.026902	0.0404	0.156	0.0404	0.4835	0.0000	0.0000
72.2	0.026978	0.0405	0.156	0.0405	0.4849	0.0000	0.0000
72.4	0.027053	0.0406	0.156	0.0406	0.4863	0.0000	0.0000
72.6	0.027129	0.0407	0.156	0.0407	0.4876	0.0000	0.0000
72.8	0.027205	0.0408	0.156	0.0408	0.4890	0.0000	0.0000
73	0.027281	0.0409	0.156	0.0409	0.4904	0.0000	0.0000
73.2	0.027357	0.0410	0.156	0.0410	0.4917	0.0000	0.0000
73.4	0.027433	0.0411	0.156	0.0411	0.4931	0.0000	0.0000
73.6	0.027509	0.0413	0.156	0.0413	0.4945	0.0000	0.0000

73.8	0.027585	0.0414	0.156	0.0414	0.4958	0.0000	0.0000
74	0.027661	0.0415	0.156	0.0415	0.4972	0.0000	0.0000
74.2	0.027737	0.0416	0.156	0.0416	0.4986	0.0000	0.0000
74.4	0.027813	0.0417	0.156	0.0417	0.4999	0.0000	0.0000
74.6	0.027889	0.0418	0.156	0.0418	0.5013	0.0000	0.0000
74.8	0.027965	0.0419	0.156	0.0419	0.5027	0.0000	0.0000
75	0.028041	0.0421	0.156	0.0421	0.5040	0.0000	0.0000
75.2	0.028117	0.0422	0.156	0.0422	0.5054	0.0000	0.0000
75.4	0.028193	0.0423	0.156	0.0423	0.5068	0.0000	0.0000
75.6	0.028268	0.0424	0.156	0.0424	0.5081	0.0000	0.0000
75.8	0.028344	0.0425	0.156	0.0425	0.5095	0.0000	0.0000
76	0.028421	0.0426	0.156	0.0426	0.5109	0.0000	0.0000
76.2	0.028497	0.0427	0.156	0.0427	0.5123	0.0000	0.0000
76.4	0.028573	0.0429	0.156	0.0429	0.5136	0.0000	0.0000
76.6	0.028649	0.0430	0.156	0.0430	0.5150	0.0000	0.0000
76.8	0.028725	0.0431	0.156	0.0431	0.5164	0.0000	0.0000
77	0.028801	0.0432	0.156	0.0432	0.5177	0.0000	0.0000
77.2	0.028877	0.0433	0.156	0.0433	0.5191	0.0000	0.0000
77.4	0.028953	0.0434	0.156	0.0434	0.5205	0.0000	0.0000
77.6	0.029029	0.0435	0.156	0.0435	0.5218	0.0000	0.0000
77.8	0.029105	0.0437	0.156	0.0437	0.5232	0.0000	0.0000
78	0.029181	0.0438	0.156	0.0438	0.5246	0.0000	0.0000
78.2	0.029257	0.0439	0.156	0.0439	0.5259	0.0000	0.0000
78.4	0.029333	0.0440	0.156	0.0440	0.5273	0.0000	0.0000
78.6	0.029409	0.0441	0.156	0.0441	0.5287	0.0000	0.0000
78.8	0.029485	0.0442	0.156	0.0442	0.5301	0.0000	0.0000
79	0.029561	0.0443	0.156	0.0443	0.5314	0.0000	0.0000
79.2	0.029638	0.0445	0.156	0.0445	0.5328	0.0000	0.0000
79.4	0.029714	0.0446	0.156	0.0446	0.5342	0.0000	0.0000
79.6	0.02979	0.0447	0.156	0.0447	0.5355	0.0000	0.0000
79.8	0.029866	0.0448	0.156	0.0448	0.5369	0.0000	0.0000
80	0.029942	0.0449	0.156	0.0449	0.5383	0.0000	0.0000
80.2	0.030018	0.0450	0.156	0.0450	0.5396	0.0000	0.0000
80.4	0.030094	0.0451	0.156	0.0451	0.5410	0.0000	0.0000
80.6	0.030171	0.0453	0.156	0.0453	0.5424	0.0000	0.0000
80.8	0.030247	0.0454	0.156	0.0454	0.5438	0.0000	0.0000
81	0.030323	0.0455	0.156	0.0455	0.5451	0.0000	0.0000
81.2	0.030399	0.0456	0.156	0.0456	0.5465	0.0000	0.0000
81.4	0.030475	0.0457	0.156	0.0457	0.5479	0.0000	0.0000
81.6	0.030551	0.0458	0.156	0.0458	0.5492	0.0000	0.0000
81.8	0.030628	0.0459	0.156	0.0459	0.5506	0.0000	0.0000
82	0.030704	0.0461	0.156	0.0461	0.5520	0.0000	0.0000
82.2	0.03078	0.0462	0.156	0.0462	0.5534	0.0000	0.0000
82.4	0.030856	0.0463	0.156	0.0463	0.5547	0.0000	0.0000
82.6	0.030932	0.0464	0.156	0.0464	0.5561	0.0000	0.0000
82.8	0.031009	0.0465	0.156	0.0465	0.5575	0.0000	0.0000
83	0.031085	0.0466	0.156	0.0466	0.5588	0.0000	0.0000

83.2	0.031161	0.0467	0.156	0.0467	0.5602	0.0000	0.0000
83.4	0.031237	0.0469	0.156	0.0469	0.5616	0.0000	0.0000
83.6	0.031314	0.0470	0.156	0.0470	0.5630	0.0000	0.0000
83.8	0.03139	0.0471	0.156	0.0471	0.5643	0.0000	0.0000
84	0.031466	0.0472	0.156	0.0472	0.5657	0.0000	0.0000
84.2	0.031543	0.0473	0.156	0.0473	0.5671	0.0000	0.0000
84.4	0.031619	0.0474	0.156	0.0474	0.5685	0.0000	0.0000
84.6	0.031695	0.0475	0.156	0.0475	0.5698	0.0000	0.0000
84.8	0.031771	0.0477	0.156	0.0477	0.5712	0.0000	0.0000
85	0.031848	0.0478	0.156	0.0478	0.5726	0.0000	0.0000
85.2	0.031924	0.0479	0.156	0.0479	0.5739	0.0000	0.0000
85.4	0.032	0.0480	0.156	0.0480	0.5753	0.0000	0.0000
85.6	0.032077	0.0481	0.156	0.0481	0.5767	0.0000	0.0000
85.8	0.032153	0.0482	0.156	0.0482	0.5781	0.0000	0.0000
86	0.032229	0.0483	0.156	0.0483	0.5794	0.0000	0.0000
86.2	0.032306	0.0485	0.156	0.0485	0.5808	0.0000	0.0000
86.4	0.032382	0.0486	0.156	0.0486	0.5822	0.0000	0.0000
86.6	0.032458	0.0487	0.156	0.0487	0.5836	0.0000	0.0000
86.8	0.032535	0.0488	0.156	0.0488	0.5849	0.0000	0.0000
87	0.032611	0.0489	0.156	0.0489	0.5863	0.0000	0.0000
87.2	0.032688	0.0490	0.156	0.0490	0.5877	0.0000	0.0000
87.4	0.032764	0.0491	0.156	0.0491	0.5891	0.0000	0.0000
87.6	0.03284	0.0493	0.156	0.0493	0.5904	0.0000	0.0000
87.8	0.032917	0.0494	0.156	0.0494	0.5918	0.0000	0.0000
88	0.032993	0.0495	0.156	0.0495	0.5932	0.0000	0.0000
88.2	0.03307	0.0496	0.156	0.0496	0.5946	0.0000	0.0000
88.4	0.033146	0.0497	0.156	0.0497	0.5959	0.0000	0.0000
88.6	0.033222	0.0498	0.156	0.0498	0.5973	0.0000	0.0000
88.8	0.033299	0.0499	0.156	0.0499	0.5987	0.0000	0.0000
89	0.033375	0.0501	0.156	0.0501	0.6001	0.0000	0.0000
89.2	0.033452	0.0502	0.156	0.0502	0.6014	0.0000	0.0000
89.4	0.033528	0.0503	0.156	0.0503	0.6028	0.0000	0.0000
89.6	0.033605	0.0504	0.156	0.0504	0.6042	0.0000	0.0000
89.8	0.033681	0.0505	0.156	0.0505	0.6056	0.0000	0.0000
90	0.033758	0.0506	0.156	0.0506	0.6069	0.0000	0.0000
90.2	0.033834	0.0508	0.156	0.0508	0.6083	0.0000	0.0000
90.4	0.033911	0.0509	0.156	0.0509	0.6097	0.0000	0.0000
90.6	0.033987	0.0510	0.156	0.0510	0.6111	0.0000	0.0000
90.8	0.034064	0.0511	0.156	0.0511	0.6125	0.0000	0.0000
91	0.03414	0.0512	0.156	0.0512	0.6138	0.0000	0.0000
91.2	0.034217	0.0513	0.156	0.0513	0.6152	0.0000	0.0000
91.4	0.034293	0.0514	0.156	0.0514	0.6166	0.0000	0.0000
91.6	0.03437	0.0516	0.156	0.0516	0.6180	0.0000	0.0000
91.8	0.034446	0.0517	0.156	0.0517	0.6193	0.0000	0.0000
92	0.034523	0.0518	0.156	0.0518	0.6207	0.0000	0.0000
92.2	0.034599	0.0519	0.156	0.0519	0.6221	0.0000	0.0000
92.4	0.034676	0.0520	0.156	0.0520	0.6235	0.0000	0.0000

92.6	0.034752	0.0521	0.156	0.0521	0.6249	0.0000	0.0000
92.8	0.034829	0.0522	0.156	0.0522	0.6262	0.0000	0.0000
93	0.034906	0.0524	0.156	0.0524	0.6276	0.0000	0.0000
93.2	0.034982	0.0525	0.156	0.0525	0.6290	0.0000	0.0000
93.4	0.035059	0.0526	0.156	0.0526	0.6304	0.0000	0.0000
93.6	0.035135	0.0527	0.156	0.0527	0.6317	0.0000	0.0000
93.8	0.035212	0.0528	0.156	0.0528	0.6331	0.0000	0.0000
94	0.035289	0.0529	0.156	0.0529	0.6345	0.0000	0.0000
94.2	0.035365	0.0530	0.156	0.0530	0.6359	0.0000	0.0000
94.4	0.035442	0.0532	0.156	0.0532	0.6373	0.0000	0.0000
94.6	0.035518	0.0533	0.156	0.0533	0.6386	0.0000	0.0000
94.8	0.035595	0.0534	0.156	0.0534	0.6400	0.0000	0.0000
95	0.035672	0.0535	0.156	0.0535	0.6414	0.0000	0.0000
95.2	0.035748	0.0536	0.156	0.0536	0.6428	0.0000	0.0000
95.4	0.035825	0.0537	0.156	0.0537	0.6442	0.0000	0.0000
95.6	0.035902	0.0539	0.156	0.0539	0.6455	0.0000	0.0000
95.8	0.035978	0.0540	0.156	0.0540	0.6469	0.0000	0.0000
96	0.036055	0.0541	0.156	0.0541	0.6483	0.0000	0.0000
96.2	0.036132	0.0542	0.156	0.0542	0.6497	0.0000	0.0000
96.4	0.036208	0.0543	0.156	0.0543	0.6511	0.0000	0.0000
96.6	0.036285	0.0544	0.156	0.0544	0.6524	0.0000	0.0000
96.8	0.036362	0.0545	0.156	0.0545	0.6538	0.0000	0.0000
97	0.036439	0.0547	0.156	0.0547	0.6552	0.0000	0.0000
97.2	0.036515	0.0548	0.156	0.0548	0.6566	0.0000	0.0000
97.4	0.036592	0.0549	0.156	0.0549	0.6580	0.0000	0.0000
97.6	0.036669	0.0550	0.156	0.0550	0.6593	0.0000	0.0000
97.8	0.036746	0.0551	0.156	0.0551	0.6607	0.0000	0.0000
98	0.036822	0.0552	0.156	0.0552	0.6621	0.0000	0.0000
98.2	0.036899	0.0553	0.156	0.0553	0.6635	0.0000	0.0000
98.4	0.036976	0.0555	0.156	0.0555	0.6649	0.0000	0.0000
98.6	0.037053	0.0556	0.156	0.0556	0.6663	0.0000	0.0000
98.8	0.037129	0.0557	0.156	0.0557	0.6676	0.0000	0.0000
99	0.037206	0.0558	0.156	0.0558	0.6690	0.0000	0.0000
99.2	0.037283	0.0559	0.156	0.0559	0.6704	0.0000	0.0000
99.4	0.03736	0.0560	0.156	0.0560	0.6718	0.0000	0.0000
99.6	0.037436	0.0562	0.156	0.0562	0.6732	0.0000	0.0000
99.8	0.037513	0.0563	0.156	0.0563	0.6745	0.0000	0.0000
100	0.03759	0.0564	0.156	0.0564	0.6759	0.0000	0.0000
100.2	0.037667	0.0565	0.156	0.0565	0.6773	0.0000	0.0000
100.4	0.037744	0.0566	0.156	0.0566	0.6787	0.0000	0.0000
100.6	0.037821	0.0567	0.156	0.0567	0.6801	0.0000	0.0000
100.8	0.037897	0.0568	0.156	0.0568	0.6815	0.0000	0.0000
101	0.037974	0.0570	0.156	0.0570	0.6828	0.0000	0.0000
101.2	0.038051	0.0571	0.156	0.0571	0.6842	0.0000	0.0000
101.4	0.038128	0.0572	0.156	0.0572	0.6856	0.0000	0.0000
101.6	0.038205	0.0573	0.156	0.0573	0.6870	0.0000	0.0000
101.8	0.038282	0.0574	0.156	0.0574	0.6884	0.0000	0.0000

102	0.038359	0.0575	0.156	0.0575	0.6898	0.0000	0.0000
102.2	0.038436	0.0577	0.156	0.0577	0.6911	0.0000	0.0000
102.4	0.038512	0.0578	0.156	0.0578	0.6925	0.0000	0.0000
102.6	0.038589	0.0579	0.156	0.0579	0.6939	0.0000	0.0000
102.8	0.038666	0.0580	0.156	0.0580	0.6953	0.0000	0.0000
103	0.038743	0.0581	0.156	0.0581	0.6967	0.0000	0.0000
103.2	0.03882	0.0582	0.156	0.0582	0.6981	0.0000	0.0000
103.4	0.038897	0.0583	0.156	0.0583	0.6995	0.0000	0.0000
103.6	0.038974	0.0585	0.156	0.0585	0.7008	0.0000	0.0000
103.8	0.039051	0.0586	0.156	0.0586	0.7022	0.0000	0.0000
104	0.039128	0.0587	0.156	0.0587	0.7036	0.0000	0.0000
104.2	0.039205	0.0588	0.156	0.0588	0.7050	0.0000	0.0000
104.4	0.039282	0.0589	0.156	0.0589	0.7064	0.0000	0.0000
104.6	0.039359	0.0590	0.156	0.0590	0.7078	0.0000	0.0000
104.8	0.039436	0.0592	0.156	0.0592	0.7092	0.0000	0.0000
105	0.039513	0.0593	0.156	0.0593	0.7105	0.0000	0.0000
105.2	0.03959	0.0594	0.156	0.0594	0.7119	0.0000	0.0000
105.4	0.039667	0.0595	0.156	0.0595	0.7133	0.0000	0.0000
105.6	0.039744	0.0596	0.156	0.0596	0.7147	0.0000	0.0000
105.8	0.039821	0.0597	0.156	0.0597	0.7161	0.0000	0.0000
106	0.039898	0.0598	0.156	0.0598	0.7175	0.0000	0.0000
106.2	0.039975	0.0600	0.156	0.0600	0.7189	0.0000	0.0000
106.4	0.040052	0.0601	0.156	0.0601	0.7202	0.0000	0.0000
106.6	0.040129	0.0602	0.156	0.0602	0.7216	0.0000	0.0000
106.8	0.040206	0.0603	0.156	0.0603	0.7230	0.0000	0.0000
107	0.040283	0.0604	0.156	0.0604	0.7244	0.0000	0.0000
107.2	0.04036	0.0605	0.156	0.0605	0.7258	0.0000	0.0000
107.4	0.040437	0.0607	0.156	0.0607	0.7272	0.0000	0.0000
107.6	0.040514	0.0608	0.156	0.0608	0.7286	0.0000	0.0000
107.8	0.040591	0.0609	0.156	0.0609	0.7300	0.0000	0.0000
108	0.040668	0.0610	0.156	0.0610	0.7313	0.0000	0.0000
108.2	0.040746	0.0611	0.156	0.0611	0.7327	0.0000	0.0000
108.4	0.040823	0.0612	0.156	0.0612	0.7341	0.0000	0.0000
108.6	0.0409	0.0613	0.156	0.0613	0.7355	0.0000	0.0000
108.8	0.040977	0.0615	0.156	0.0615	0.7369	0.0000	0.0000
109	0.041054	0.0616	0.156	0.0616	0.7383	0.0000	0.0000
109.2	0.041131	0.0617	0.156	0.0617	0.7397	0.0000	0.0000
109.4	0.041208	0.0618	0.156	0.0618	0.7411	0.0000	0.0000
109.6	0.041285	0.0619	0.156	0.0619	0.7424	0.0000	0.0000
109.8	0.041363	0.0620	0.156	0.0620	0.7438	0.0000	0.0000
110	0.04144	0.0622	0.156	0.0622	0.7452	0.0000	0.0000
110.2	0.041517	0.0623	0.156	0.0623	0.7466	0.0000	0.0000
110.4	0.041594	0.0624	0.156	0.0624	0.7480	0.0000	0.0000
110.6	0.041671	0.0625	0.156	0.0625	0.7494	0.0000	0.0000
110.8	0.041749	0.0626	0.156	0.0626	0.7508	0.0000	0.0000
111	0.041826	0.0627	0.156	0.0627	0.7522	0.0000	0.0000
111.2	0.041903	0.0629	0.156	0.0629	0.7536	0.0000	0.0000

111.4	0.04198	0.0630	0.156	0.0630	0.7549	0.0000	0.0000
111.6	0.042057	0.0631	0.156	0.0631	0.7563	0.0000	0.0000
111.8	0.042135	0.0632	0.156	0.0632	0.7577	0.0000	0.0000
112	0.042212	0.0633	0.156	0.0633	0.7591	0.0000	0.0000
112.2	0.042289	0.0634	0.156	0.0634	0.7605	0.0000	0.0000
112.4	0.042366	0.0635	0.156	0.0635	0.7619	0.0000	0.0000
112.6	0.042444	0.0637	0.156	0.0637	0.7633	0.0000	0.0000
112.8	0.042521	0.0638	0.156	0.0638	0.7647	0.0000	0.0000
113	0.042598	0.0639	0.156	0.0639	0.7661	0.0000	0.0000
113.2	0.042675	0.0640	0.156	0.0640	0.7675	0.0000	0.0000
113.4	0.042753	0.0641	0.156	0.0641	0.7689	0.0000	0.0000
113.6	0.04283	0.0642	0.156	0.0642	0.7702	0.0000	0.0000
113.8	0.042907	0.0644	0.156	0.0644	0.7716	0.0000	0.0000
114	0.042985	0.0645	0.156	0.0645	0.7730	0.0000	0.0000
114.2	0.043062	0.0646	0.156	0.0646	0.7744	0.0000	0.0000
114.4	0.043139	0.0647	0.156	0.0647	0.7758	0.0000	0.0000
114.6	0.043216	0.0648	0.156	0.0648	0.7772	0.0000	0.0000
114.8	0.043294	0.0649	0.156	0.0649	0.7786	0.0000	0.0000
115	0.043371	0.0651	0.156	0.0651	0.7800	0.0000	0.0000
115.2	0.043448	0.0652	0.156	0.0652	0.7814	0.0000	0.0000
115.4	0.043526	0.0653	0.156	0.0653	0.7828	0.0000	0.0000
115.6	0.043603	0.0654	0.156	0.0654	0.7842	0.0000	0.0000
115.8	0.043681	0.0655	0.156	0.0655	0.7856	0.0000	0.0000
116	0.043758	0.0656	0.156	0.0656	0.7869	0.0000	0.0000
116.2	0.043835	0.0658	0.156	0.0658	0.7883	0.0000	0.0000
116.4	0.043913	0.0659	0.156	0.0659	0.7897	0.0000	0.0000
116.6	0.04399	0.0660	0.156	0.0660	0.7911	0.0000	0.0000
116.8	0.044067	0.0661	0.156	0.0661	0.7925	0.0000	0.0000
117	0.044145	0.0662	0.156	0.0662	0.7939	0.0000	0.0000
117.2	0.044222	0.0663	0.156	0.0663	0.7953	0.0000	0.0000
117.4	0.0443	0.0664	0.156	0.0664	0.7967	0.0000	0.0000
117.6	0.044377	0.0666	0.156	0.0666	0.7981	0.0000	0.0000
117.8	0.044455	0.0667	0.156	0.0667	0.7995	0.0000	0.0000
118	0.044532	0.0668	0.156	0.0668	0.8009	0.0000	0.0000
118.2	0.044609	0.0669	0.156	0.0669	0.8023	0.0000	0.0000
118.4	0.044687	0.0670	0.156	0.0670	0.8037	0.0000	0.0000
118.6	0.044764	0.0671	0.156	0.0671	0.8051	0.0000	0.0000
118.8	0.044842	0.0673	0.156	0.0673	0.8065	0.0000	0.0000
119	0.044919	0.0674	0.156	0.0674	0.8079	0.0000	0.0000
119.2	0.044997	0.0675	0.156	0.0675	0.8092	0.0000	0.0000
119.4	0.045074	0.0676	0.156	0.0676	0.8106	0.0000	0.0000
119.6	0.045152	0.0677	0.156	0.0677	0.8120	0.0000	0.0000
119.8	0.045229	0.0678	0.156	0.0678	0.8134	0.0000	0.0000
120	0.045307	0.0680	0.156	0.0680	0.8148	0.0000	0.0000
120.2	0.045384	0.0681	0.156	0.0681	0.8162	0.0000	0.0000
120.4	0.045462	0.0682	0.156	0.0682	0.8176	0.0000	0.0000
120.6	0.045539	0.0683	0.156	0.0683	0.8190	0.0000	0.0000

120.8	0.045617	0.0684	0.156	0.0684	0.8204	0.0000	0.0000
121	0.045695	0.0685	0.156	0.0685	0.8218	0.0000	0.0000
121.2	0.045772	0.0687	0.156	0.0687	0.8232	0.0000	0.0000
121.4	0.04585	0.0688	0.156	0.0688	0.8246	0.0000	0.0000
121.6	0.045927	0.0689	0.156	0.0689	0.8260	0.0000	0.0000
121.8	0.046005	0.0690	0.156	0.0690	0.8274	0.0000	0.0000
122	0.046082	0.0691	0.156	0.0691	0.8288	0.0000	0.0000
122.2	0.04616	0.0692	0.156	0.0692	0.8302	0.0000	0.0000
122.4	0.046238	0.0694	0.156	0.0694	0.8316	0.0000	0.0000
122.6	0.046315	0.0695	0.156	0.0695	0.8330	0.0000	0.0000
122.8	0.046393	0.0696	0.156	0.0696	0.8344	0.0000	0.0000
123	0.04647	0.0697	0.156	0.0697	0.8358	0.0000	0.0000
123.2	0.046548	0.0698	0.156	0.0698	0.8372	0.0000	0.0000
123.4	0.046626	0.0699	0.156	0.0699	0.8386	0.0000	0.0000
123.6	0.046703	0.0701	0.156	0.0701	0.8400	0.0000	0.0000
123.8	0.046781	0.0702	0.156	0.0702	0.8414	0.0000	0.0000
124	0.046859	0.0703	0.156	0.0703	0.8428	0.0000	0.0000
124.2	0.046936	0.0704	0.156	0.0704	0.8442	0.0000	0.0000
124.4	0.047014	0.0705	0.156	0.0705	0.8456	0.0000	0.0000
124.6	0.047092	0.0706	0.156	0.0706	0.8469	0.0000	0.0000
124.8	0.047169	0.0708	0.156	0.0708	0.8483	0.0000	0.0000
125	0.047247	0.0709	0.156	0.0709	0.8497	0.0000	0.0000
125.2	0.047325	0.0710	0.156	0.0710	0.8511	0.0000	0.0000
125.4	0.047402	0.0711	0.156	0.0711	0.8525	0.0000	0.0000
125.6	0.04748	0.0712	0.156	0.0712	0.8539	0.0000	0.0000
125.8	0.047558	0.0713	0.156	0.0713	0.8553	0.0000	0.0000
126	0.047636	0.0715	0.156	0.0715	0.8567	0.0000	0.0000
126.2	0.047713	0.0716	0.156	0.0716	0.8581	0.0000	0.0000
126.4	0.047791	0.0717	0.156	0.0717	0.8595	0.0000	0.0000
126.6	0.047869	0.0718	0.156	0.0718	0.8609	0.0000	0.0000
126.8	0.047947	0.0719	0.156	0.0719	0.8623	0.0000	0.0000
127	0.048024	0.0720	0.156	0.0720	0.8637	0.0000	0.0000
127.2	0.048102	0.0722	0.156	0.0722	0.8651	0.0000	0.0000
127.4	0.04818	0.0723	0.156	0.0723	0.8665	0.0000	0.0000
127.6	0.048258	0.0724	0.156	0.0724	0.8679	0.0000	0.0000
127.8	0.048335	0.0725	0.156	0.0725	0.8693	0.0000	0.0000
128	0.048413	0.0726	0.156	0.0726	0.8707	0.0000	0.0000
128.2	0.048491	0.0727	0.156	0.0727	0.8721	0.0000	0.0000
128.4	0.048569	0.0729	0.156	0.0729	0.8735	0.0000	0.0000
128.6	0.048647	0.0730	0.156	0.0730	0.8749	0.0000	0.0000
128.8	0.048724	0.0731	0.156	0.0731	0.8763	0.0000	0.0000
129	0.048802	0.0732	0.156	0.0732	0.8777	0.0000	0.0000
129.2	0.04888	0.0733	0.156	0.0733	0.8791	0.0000	0.0000
129.4	0.048958	0.0734	0.156	0.0734	0.8805	0.0000	0.0000
129.6	0.049036	0.0736	0.156	0.0736	0.8819	0.0000	0.0000
129.8	0.049114	0.0737	0.156	0.0737	0.8833	0.0000	0.0000
130	0.049192	0.0738	0.156	0.0738	0.8847	0.0000	0.0000

130.2	0.049269	0.0739	0.156	0.0739	0.8861	0.0000	0.0000
130.4	0.049347	0.0740	0.156	0.0740	0.8876	0.0000	0.0000
130.6	0.049425	0.0741	0.156	0.0741	0.8890	0.0000	0.0000
130.8	0.049503	0.0743	0.156	0.0743	0.8904	0.0000	0.0000
131	0.049581	0.0744	0.156	0.0744	0.8918	0.0000	0.0000
131.2	0.049659	0.0745	0.156	0.0745	0.8932	0.0000	0.0000
131.4	0.049737	0.0746	0.156	0.0746	0.8946	0.0000	0.0000
131.6	0.049815	0.0747	0.156	0.0747	0.8960	0.0000	0.0000
131.8	0.049893	0.0748	0.156	0.0748	0.8974	0.0000	0.0000
132	0.049971	0.0750	0.156	0.0750	0.8988	0.0000	0.0000
132.2	0.050049	0.0751	0.156	0.0751	0.9002	0.0000	0.0000
132.4	0.050127	0.0752	0.156	0.0752	0.9016	0.0000	0.0000
132.6	0.050205	0.0753	0.156	0.0753	0.9030	0.0000	0.0000
132.8	0.050282	0.0754	0.156	0.0754	0.9044	0.0000	0.0000
133	0.05036	0.0755	0.156	0.0755	0.9058	0.0000	0.0000
133.2	0.050438	0.0757	0.156	0.0757	0.9072	0.0000	0.0000
133.4	0.050516	0.0758	0.156	0.0758	0.9086	0.0000	0.0000
133.6	0.050594	0.0759	0.156	0.0759	0.9100	0.0000	0.0000
133.8	0.050672	0.0760	0.156	0.0760	0.9114	0.0000	0.0000
134	0.05075	0.0761	0.156	0.0761	0.9128	0.0000	0.0000
134.2	0.050828	0.0762	0.156	0.0762	0.9142	0.0000	0.0000
134.4	0.050906	0.0764	0.156	0.0764	0.9156	0.0000	0.0000
134.6	0.050985	0.0765	0.156	0.0765	0.9170	0.0000	0.0000
134.8	0.051063	0.0766	0.156	0.0766	0.9184	0.0000	0.0000
135	0.051141	0.0767	0.156	0.0767	0.9198	0.0000	0.0000
135.2	0.051219	0.0768	0.156	0.0768	0.9212	0.0000	0.0000
135.4	0.051297	0.0769	0.156	0.0769	0.9226	0.0000	0.0000
135.6	0.051375	0.0771	0.156	0.0771	0.9240	0.0000	0.0000
135.8	0.051453	0.0772	0.156	0.0772	0.9254	0.0000	0.0000
136	0.051531	0.0773	0.156	0.0773	0.9269	0.0000	0.0000
136.2	0.051609	0.0774	0.156	0.0774	0.9283	0.0000	0.0000
136.4	0.051687	0.0775	0.156	0.0775	0.9297	0.0000	0.0000
136.6	0.051765	0.0776	0.156	0.0776	0.9311	0.0000	0.0000
136.8	0.051843	0.0778	0.156	0.0778	0.9325	0.0000	0.0000
137	0.051921	0.0779	0.156	0.0779	0.9339	0.0000	0.0000
137.2	0.052	0.0780	0.156	0.0780	0.9353	0.0000	0.0000
137.4	0.052078	0.0781	0.156	0.0781	0.9367	0.0000	0.0000
137.6	0.052156	0.0782	0.156	0.0782	0.9381	0.0000	0.0000
137.8	0.052234	0.0784	0.156	0.0784	0.9395	0.0000	0.0000
138	0.052312	0.0785	0.156	0.0785	0.9409	0.0000	0.0000
138.2	0.05239	0.0786	0.156	0.0786	0.9423	0.0000	0.0000
138.4	0.052469	0.0787	0.156	0.0787	0.9437	0.0000	0.0000
138.6	0.052547	0.0788	0.156	0.0788	0.9451	0.0000	0.0000
138.8	0.052625	0.0789	0.156	0.0789	0.9465	0.0000	0.0000
139	0.052703	0.0791	0.156	0.0791	0.9480	0.0000	0.0000
139.2	0.052781	0.0792	0.156	0.0792	0.9494	0.0000	0.0000
139.4	0.05286	0.0793	0.156	0.0793	0.9508	0.0000	0.0000

139.6	0.052938	0.0794	0.156	0.0794	0.9522	0.0000	0.0000
139.8	0.053016	0.0795	0.156	0.0795	0.9536	0.0000	0.0000
140	0.053094	0.0796	0.156	0.0796	0.9550	0.0000	0.0000
140.2	0.053172	0.0798	0.156	0.0798	0.9564	0.0000	0.0000
140.4	0.053251	0.0799	0.156	0.0799	0.9578	0.0000	0.0000
140.6	0.053329	0.0800	0.156	0.0800	0.9592	0.0000	0.0000
140.8	0.053407	0.0801	0.156	0.0801	0.9606	0.0000	0.0000
141	0.053485	0.0802	0.156	0.0802	0.9620	0.0000	0.0000
141.2	0.053564	0.0803	0.156	0.0803	0.9634	0.0000	0.0000
141.4	0.053642	0.0805	0.156	0.0805	0.9649	0.0000	0.0000
141.6	0.05372	0.0806	0.156	0.0806	0.9663	0.0000	0.0000
141.8	0.053799	0.0807	0.156	0.0807	0.9677	0.0000	0.0000
142	0.053877	0.0808	0.156	0.0808	0.9691	0.0000	0.0000
142.2	0.053955	0.0809	0.156	0.0809	0.9705	0.0000	0.0000
142.4	0.054034	0.0811	0.156	0.0811	0.9719	0.0000	0.0000
142.6	0.054112	0.0812	0.156	0.0812	0.9733	0.0000	0.0000
142.8	0.05419	0.0813	0.156	0.0813	0.9747	0.0000	0.0000
143	0.054268	0.0814	0.156	0.0814	0.9761	0.0000	0.0000
143.2	0.054347	0.0815	0.156	0.0815	0.9775	0.0000	0.0000
143.4	0.054425	0.0816	0.156	0.0816	0.9789	0.0000	0.0000
143.6	0.054504	0.0818	0.156	0.0818	0.9804	0.0000	0.0000
143.8	0.054582	0.0819	0.156	0.0819	0.9818	0.0000	0.0000
144	0.05466	0.0820	0.156	0.0820	0.9832	0.0000	0.0000
144.2	0.054739	0.0821	0.156	0.0821	0.9846	0.0000	0.0000
144.4	0.054817	0.0822	0.156	0.0822	0.9860	0.0000	0.0000
144.6	0.054895	0.0823	0.156	0.0823	0.9874	0.0000	0.0000
144.8	0.054974	0.0825	0.156	0.0825	0.9888	0.0000	0.0000
145	0.055052	0.0826	0.156	0.0826	0.9902	0.0000	0.0000
145.2	0.055131	0.0827	0.156	0.0827	0.9916	0.0000	0.0000
145.4	0.055209	0.0828	0.156	0.0828	0.9931	0.0000	0.0000
145.6	0.055288	0.0829	0.156	0.0829	0.9945	0.0000	0.0000
145.8	0.055366	0.0830	0.156	0.0830	0.9959	0.0000	0.0000
146	0.055444	0.0832	0.156	0.0832	0.9973	0.0000	0.0000
146.2	0.055523	0.0833	0.156	0.0833	0.9987	0.0000	0.0000
146.4	0.055601	0.0834	0.156	0.0834	1.0001	0.0000	0.0000
146.6	0.05568	0.0835	0.156	0.0835	1.0015	0.0000	0.0000
146.8	0.055758	0.0836	0.156	0.0836	1.0029	0.0000	0.0000
147	0.055837	0.0838	0.156	0.0838	1.0044	0.0000	0.0000
147.2	0.055915	0.0839	0.156	0.0839	1.0058	0.0000	0.0000
147.4	0.055994	0.0840	0.156	0.0840	1.0072	0.0000	0.0000
147.6	0.056072	0.0841	0.156	0.0841	1.0086	0.0000	0.0000
147.8	0.056151	0.0842	0.156	0.0842	1.0100	0.0000	0.0000
148	0.056229	0.0843	0.156	0.0843	1.0114	0.0000	0.0000
148.2	0.056308	0.0845	0.156	0.0845	1.0128	0.0000	0.0000
148.4	0.056386	0.0846	0.156	0.0846	1.0142	0.0000	0.0000
148.6	0.056465	0.0847	0.156	0.0847	1.0157	0.0000	0.0000
148.8	0.056544	0.0848	0.156	0.0848	1.0171	0.0000	0.0000

149	0.056622	0.0849	0.156	0.0849	1.0185	0.0000	0.0000
149.2	0.056701	0.0851	0.156	0.0851	1.0199	0.0000	0.0000
149.4	0.056779	0.0852	0.156	0.0852	1.0213	0.0000	0.0000
149.6	0.056858	0.0853	0.156	0.0853	1.0227	0.0000	0.0000
149.8	0.056936	0.0854	0.156	0.0854	1.0241	0.0000	0.0000
150	0.057015	0.0855	0.156	0.0855	1.0256	0.0000	0.0000
150.2	0.057094	0.0856	0.156	0.0856	1.0270	0.0000	0.0000
150.4	0.057172	0.0858	0.156	0.0858	1.0284	0.0000	0.0000
150.6	0.057251	0.0859	0.156	0.0859	1.0298	0.0000	0.0000
150.8	0.057329	0.0860	0.156	0.0860	1.0312	0.0000	0.0000
151	0.057408	0.0861	0.156	0.0861	1.0326	0.0000	0.0000
151.2	0.057487	0.0862	0.156	0.0862	1.0341	0.0000	0.0000
151.4	0.057565	0.0863	0.156	0.0863	1.0355	0.0000	0.0000
151.6	0.057644	0.0865	0.156	0.0865	1.0369	0.0000	0.0000
151.8	0.057723	0.0866	0.156	0.0866	1.0383	0.0000	0.0000
152	0.057801	0.0867	0.156	0.0867	1.0397	0.0000	0.0000
152.2	0.05788	0.0868	0.156	0.0868	1.0411	0.0000	0.0000
152.4	0.057959	0.0869	0.156	0.0869	1.0425	0.0000	0.0000
152.6	0.058037	0.0871	0.156	0.0871	1.0440	0.0000	0.0000
152.8	0.058116	0.0872	0.156	0.0872	1.0454	0.0000	0.0000
153	0.058195	0.0873	0.156	0.0873	1.0468	0.0000	0.0000
153.2	0.058273	0.0874	0.156	0.0874	1.0482	0.0000	0.0000
153.4	0.058352	0.0875	0.156	0.0875	1.0496	0.0000	0.0000
153.6	0.058431	0.0876	0.156	0.0876	1.0510	0.0000	0.0000
153.8	0.05851	0.0878	0.156	0.0878	1.0525	0.0000	0.0000
154	0.058588	0.0879	0.156	0.0879	1.0539	0.0000	0.0000
154.2	0.058667	0.0880	0.156	0.0880	1.0553	0.0000	0.0000
154.4	0.058746	0.0881	0.156	0.0881	1.0567	0.0000	0.0000
154.6	0.058825	0.0882	0.156	0.0882	1.0581	0.0000	0.0000
154.8	0.058903	0.0884	0.156	0.0884	1.0596	0.0000	0.0000
155	0.058982	0.0885	0.156	0.0885	1.0610	0.0000	0.0000
155.2	0.059061	0.0886	0.156	0.0886	1.0624	0.0000	0.0000
155.4	0.05914	0.0887	0.156	0.0887	1.0638	0.0000	0.0000
155.6	0.059219	0.0888	0.156	0.0888	1.0652	0.0000	0.0000
155.8	0.059297	0.0889	0.156	0.0889	1.0666	0.0000	0.0000
156	0.059376	0.0891	0.156	0.0891	1.0681	0.0000	0.0000
156.2	0.059455	0.0892	0.156	0.0892	1.0695	0.0000	0.0000
156.4	0.059534	0.0893	0.156	0.0893	1.0709	0.0000	0.0000
156.6	0.059613	0.0894	0.156	0.0894	1.0723	0.0000	0.0000
156.8	0.059692	0.0895	0.156	0.0895	1.0737	0.0000	0.0000
157	0.05977	0.0897	0.156	0.0897	1.0752	0.0000	0.0000
157.2	0.059849	0.0898	0.156	0.0898	1.0766	0.0000	0.0000
157.4	0.059928	0.0899	0.156	0.0899	1.0780	0.0000	0.0000
157.6	0.060007	0.0900	0.156	0.0900	1.0794	0.0000	0.0000
157.8	0.060086	0.0901	0.156	0.0901	1.0808	0.0000	0.0000
158	0.060165	0.0902	0.156	0.0902	1.0823	0.0000	0.0000
158.2	0.060244	0.0904	0.156	0.0904	1.0837	0.0000	0.0000

158.4	0.060323	0.0905	0.156	0.0905	1.0851	0.0000	0.0000
158.6	0.060402	0.0906	0.156	0.0906	1.0865	0.0000	0.0000
158.8	0.060481	0.0907	0.156	0.0907	1.0879	0.0000	0.0000
159	0.060559	0.0908	0.156	0.0908	1.0894	0.0000	0.0000
159.2	0.060638	0.0910	0.156	0.0910	1.0908	0.0000	0.0000
159.4	0.060717	0.0911	0.156	0.0911	1.0922	0.0000	0.0000
159.6	0.060796	0.0912	0.156	0.0912	1.0936	0.0000	0.0000
159.8	0.060875	0.0913	0.156	0.0913	1.0950	0.0000	0.0000
160	0.060954	0.0914	0.156	0.0914	1.0965	0.0000	0.0000
160.2	0.061033	0.0915	0.156	0.0915	1.0979	0.0000	0.0000
160.4	0.061112	0.0917	0.156	0.0917	1.0993	0.0000	0.0000
160.6	0.061191	0.0918	0.156	0.0918	1.1007	0.0000	0.0000
160.8	0.06127	0.0919	0.156	0.0919	1.1022	0.0000	0.0000
161	0.061349	0.0920	0.156	0.0920	1.1036	0.0000	0.0000
161.2	0.061428	0.0921	0.156	0.0921	1.1050	0.0000	0.0000
161.4	0.061507	0.0923	0.156	0.0923	1.1064	0.0000	0.0000
161.6	0.061586	0.0924	0.156	0.0924	1.1078	0.0000	0.0000
161.8	0.061665	0.0925	0.156	0.0925	1.1093	0.0000	0.0000
162	0.061744	0.0926	0.156	0.0926	1.1107	0.0000	0.0000
162.2	0.061823	0.0927	0.156	0.0927	1.1121	0.0000	0.0000
162.4	0.061902	0.0929	0.156	0.0929	1.1135	0.0000	0.0000
162.6	0.061981	0.0930	0.156	0.0930	1.1150	0.0000	0.0000
162.8	0.062061	0.0931	0.156	0.0931	1.1164	0.0000	0.0000
163	0.06214	0.0932	0.156	0.0932	1.1178	0.0000	0.0000
163.2	0.062219	0.0933	0.156	0.0933	1.1192	0.0000	0.0000
163.4	0.062298	0.0934	0.156	0.0934	1.1206	0.0000	0.0000
163.6	0.062377	0.0936	0.156	0.0936	1.1221	0.0000	0.0000
163.8	0.062456	0.0937	0.156	0.0937	1.1235	0.0000	0.0000
164	0.062535	0.0938	0.156	0.0938	1.1249	0.0000	0.0000
164.2	0.062614	0.0939	0.156	0.0939	1.1263	0.0000	0.0000
164.4	0.062693	0.0940	0.156	0.0940	1.1278	0.0000	0.0000
164.6	0.062772	0.0942	0.156	0.0942	1.1292	0.0000	0.0000
164.8	0.062852	0.0943	0.156	0.0943	1.1306	0.0000	0.0000
165	0.062931	0.0944	0.156	0.0944	1.1320	0.0000	0.0000
165.2	0.06301	0.0945	0.156	0.0945	1.1335	0.0000	0.0000
165.4	0.063089	0.0946	0.156	0.0946	1.1349	0.0000	0.0000
165.6	0.063168	0.0948	0.156	0.0948	1.1363	0.0000	0.0000
165.8	0.063247	0.0949	0.156	0.0949	1.1377	0.0000	0.0000
166	0.063327	0.0950	0.156	0.0950	1.1392	0.0000	0.0000
166.2	0.063406	0.0951	0.156	0.0951	1.1406	0.0000	0.0000
166.4	0.063485	0.0952	0.156	0.0952	1.1420	0.0000	0.0000
166.6	0.063564	0.0953	0.156	0.0953	1.1434	0.0000	0.0000
166.8	0.063644	0.0955	0.156	0.0955	1.1449	0.0000	0.0000
167	0.063723	0.0956	0.156	0.0956	1.1463	0.0000	0.0000
167.2	0.063802	0.0957	0.156	0.0957	1.1477	0.0000	0.0000
167.4	0.063881	0.0958	0.156	0.0958	1.1491	0.0000	0.0000
167.6	0.06396	0.0959	0.156	0.0959	1.1506	0.0000	0.0000

167.8	0.06404	0.0961	0.156	0.0961	1.1520	0.0000	0.0000
168	0.064119	0.0962	0.156	0.0962	1.1534	0.0000	0.0000
168.2	0.064198	0.0963	0.156	0.0963	1.1549	0.0000	0.0000
168.4	0.064278	0.0964	0.156	0.0964	1.1563	0.0000	0.0000
168.6	0.064357	0.0965	0.156	0.0965	1.1577	0.0000	0.0000
168.8	0.064436	0.0967	0.156	0.0967	1.1591	0.0000	0.0000
169	0.064515	0.0968	0.156	0.0968	1.1606	0.0000	0.0000
169.2	0.064595	0.0969	0.156	0.0969	1.1620	0.0000	0.0000
169.4	0.064674	0.0970	0.156	0.0970	1.1634	0.0000	0.0000
169.6	0.064753	0.0971	0.156	0.0971	1.1648	0.0000	0.0000
169.8	0.064833	0.0972	0.156	0.0972	1.1663	0.0000	0.0000
170	0.064912	0.0974	0.156	0.0974	1.1677	0.0000	0.0000
170.2	0.064991	0.0975	0.156	0.0975	1.1691	0.0000	0.0000
170.4	0.065071	0.0976	0.156	0.0976	1.1706	0.0000	0.0000
170.6	0.06515	0.0977	0.156	0.0977	1.1720	0.0000	0.0000
170.8	0.06523	0.0978	0.156	0.0978	1.1734	0.0000	0.0000
171	0.065309	0.0980	0.156	0.0980	1.1748	0.0000	0.0000
171.2	0.065388	0.0981	0.156	0.0981	1.1763	0.0000	0.0000
171.4	0.065468	0.0982	0.156	0.0982	1.1777	0.0000	0.0000
171.6	0.065547	0.0983	0.156	0.0983	1.1791	0.0000	0.0000
171.8	0.065627	0.0984	0.156	0.0984	1.1806	0.0000	0.0000
172	0.065706	0.0986	0.156	0.0986	1.1820	0.0000	0.0000
172.2	0.065785	0.0987	0.156	0.0987	1.1834	0.0000	0.0000
172.4	0.065865	0.0988	0.156	0.0988	1.1849	0.0000	0.0000
172.6	0.065944	0.0989	0.156	0.0989	1.1863	0.0000	0.0000
172.8	0.066024	0.0990	0.156	0.0990	1.1877	0.0000	0.0000
173	0.066103	0.0992	0.156	0.0992	1.1891	0.0000	0.0000
173.2	0.066183	0.0993	0.156	0.0993	1.1906	0.0000	0.0000
173.4	0.066262	0.0994	0.156	0.0994	1.1920	0.0000	0.0000
173.6	0.066342	0.0995	0.156	0.0995	1.1934	0.0000	0.0000
173.8	0.066421	0.0996	0.156	0.0996	1.1949	0.0000	0.0000
174	0.066501	0.0998	0.156	0.0998	1.1963	0.0000	0.0000
174.2	0.06658	0.0999	0.156	0.0999	1.1977	0.0000	0.0000
174.4	0.06666	0.1000	0.156	0.1000	1.1992	0.0000	0.0000
174.6	0.066739	0.1001	0.156	0.1001	1.2006	0.0000	0.0000
174.8	0.066819	0.1002	0.156	0.1002	1.2020	0.0000	0.0000
175	0.066898	0.1003	0.156	0.1003	1.2035	0.0000	0.0000
175.2	0.066978	0.1005	0.156	0.1005	1.2049	0.0000	0.0000
175.4	0.067057	0.1006	0.156	0.1006	1.2063	0.0000	0.0000
175.6	0.067137	0.1007	0.156	0.1007	1.2077	0.0000	0.0000
175.8	0.067216	0.1008	0.156	0.1008	1.2092	0.0000	0.0000
176	0.067296	0.1009	0.156	0.1009	1.2106	0.0000	0.0000
176.2	0.067376	0.1011	0.156	0.1011	1.2120	0.0000	0.0000
176.4	0.067455	0.1012	0.156	0.1012	1.2135	0.0000	0.0000
176.6	0.067535	0.1013	0.156	0.1013	1.2149	0.0000	0.0000
176.8	0.067614	0.1014	0.156	0.1014	1.2163	0.0000	0.0000
177	0.067694	0.1015	0.156	0.1015	1.2178	0.0000	0.0000

177.2	0.067774	0.1017	0.156	0.1017	1.2192	0.0000	0.0000
177.4	0.067853	0.1018	0.156	0.1018	1.2206	0.0000	0.0000
177.6	0.067933	0.1019	0.156	0.1019	1.2221	0.0000	0.0000
177.8	0.068012	0.1020	0.156	0.1020	1.2235	0.0000	0.0000
178	0.068092	0.1021	0.156	0.1021	1.2249	0.0000	0.0000
178.2	0.068172	0.1023	0.156	0.1023	1.2264	0.0000	0.0000
178.4	0.068251	0.1024	0.156	0.1024	1.2278	0.0000	0.0000
178.6	0.068331	0.1025	0.156	0.1025	1.2292	0.0000	0.0000
178.8	0.068411	0.1026	0.156	0.1026	1.2307	0.0000	0.0000
179	0.06849	0.1027	0.156	0.1027	1.2321	0.0000	0.0000
179.2	0.06857	0.1029	0.156	0.1029	1.2335	0.0000	0.0000
179.4	0.06865	0.1030	0.156	0.1030	1.2350	0.0000	0.0000
179.6	0.06873	0.1031	0.156	0.1031	1.2364	0.0000	0.0000
179.8	0.068809	0.1032	0.156	0.1032	1.2379	0.0000	0.0000
180	0.068889	0.1033	0.156	0.1033	1.2393	0.0000	0.0000
180.2	0.068969	0.1035	0.156	0.1035	1.2407	0.0000	0.0000
180.4	0.069049	0.1036	0.156	0.1036	1.2422	0.0000	0.0000
180.6	0.069128	0.1037	0.156	0.1037	1.2436	0.0000	0.0000
180.8	0.069208	0.1038	0.156	0.1038	1.2450	0.0000	0.0000
181	0.069288	0.1039	0.156	0.1039	1.2465	0.0000	0.0000
181.2	0.069368	0.1041	0.156	0.1041	1.2479	0.0000	0.0000
181.4	0.069447	0.1042	0.156	0.1042	1.2493	0.0000	0.0000
181.6	0.069527	0.1043	0.156	0.1043	1.2508	0.0000	0.0000
181.8	0.069607	0.1044	0.156	0.1044	1.2522	0.0000	0.0000
182	0.069687	0.1045	0.156	0.1045	1.2536	0.0000	0.0000
182.2	0.069767	0.1046	0.156	0.1046	1.2551	0.0000	0.0000
182.4	0.069846	0.1048	0.156	0.1048	1.2565	0.0000	0.0000
182.6	0.069926	0.1049	0.156	0.1049	1.2580	0.0000	0.0000
182.8	0.070006	0.1050	0.156	0.1050	1.2594	0.0000	0.0000
183	0.070086	0.1051	0.156	0.1051	1.2608	0.0000	0.0000
183.2	0.070166	0.1052	0.156	0.1052	1.2623	0.0000	0.0000
183.4	0.070246	0.1054	0.156	0.1054	1.2637	0.0000	0.0000
183.6	0.070325	0.1055	0.156	0.1055	1.2651	0.0000	0.0000
183.8	0.070405	0.1056	0.156	0.1056	1.2666	0.0000	0.0000
184	0.070485	0.1057	0.156	0.1057	1.2680	0.0000	0.0000
184.2	0.070565	0.1058	0.156	0.1058	1.2695	0.0000	0.0000
184.4	0.070645	0.1060	0.156	0.1060	1.2709	0.0000	0.0000
184.6	0.070725	0.1061	0.156	0.1061	1.2723	0.0000	0.0000
184.8	0.070805	0.1062	0.156	0.1062	1.2738	0.0000	0.0000
185	0.070885	0.1063	0.156	0.1063	1.2752	0.0000	0.0000
185.2	0.070965	0.1064	0.156	0.1064	1.2766	0.0000	0.0000
185.4	0.071045	0.1066	0.156	0.1066	1.2781	0.0000	0.0000
185.6	0.071125	0.1067	0.156	0.1067	1.2795	0.0000	0.0000
185.8	0.071204	0.1068	0.156	0.1068	1.2810	0.0000	0.0000
186	0.071284	0.1069	0.156	0.1069	1.2824	0.0000	0.0000
186.2	0.071364	0.1070	0.156	0.1070	1.2838	0.0000	0.0000
186.4	0.071444	0.1072	0.156	0.1072	1.2853	0.0000	0.0000

186.6	0.071524	0.1073	0.156	0.1073	1.2867	0.0000	0.0000
186.8	0.071604	0.1074	0.156	0.1074	1.2882	0.0000	0.0000
187	0.071684	0.1075	0.156	0.1075	1.2896	0.0000	0.0000
187.2	0.071764	0.1076	0.156	0.1076	1.2910	0.0000	0.0000
187.4	0.071844	0.1078	0.156	0.1078	1.2925	0.0000	0.0000
187.6	0.071924	0.1079	0.156	0.1079	1.2939	0.0000	0.0000
187.8	0.072004	0.1080	0.156	0.1080	1.2954	0.0000	0.0000
188	0.072084	0.1081	0.156	0.1081	1.2968	0.0000	0.0000
188.2	0.072164	0.1082	0.156	0.1082	1.2982	0.0000	0.0000
188.4	0.072245	0.1084	0.156	0.1084	1.2997	0.0000	0.0000
188.6	0.072325	0.1085	0.156	0.1085	1.3011	0.0000	0.0000
188.8	0.072405	0.1086	0.156	0.1086	1.3026	0.0000	0.0000
189	0.072485	0.1087	0.156	0.1087	1.3040	0.0000	0.0000
189.2	0.072565	0.1088	0.156	0.1088	1.3054	0.0000	0.0000
189.4	0.072645	0.1090	0.156	0.1090	1.3069	0.0000	0.0000
189.6	0.072725	0.1091	0.156	0.1091	1.3083	0.0000	0.0000
189.8	0.072805	0.1092	0.156	0.1092	1.3098	0.0000	0.0000
190	0.072885	0.1093	0.156	0.1093	1.3112	0.0000	0.0000
190.2	0.072965	0.1094	0.156	0.1094	1.3127	0.0000	0.0000
190.4	0.073045	0.1096	0.156	0.1096	1.3141	0.0000	0.0000
190.6	0.073126	0.1097	0.156	0.1097	1.3155	0.0000	0.0000
190.8	0.073206	0.1098	0.156	0.1098	1.3170	0.0000	0.0000
191	0.073286	0.1099	0.156	0.1099	1.3184	0.0000	0.0000
191.2	0.073366	0.1100	0.156	0.1100	1.3199	0.0000	0.0000
191.4	0.073446	0.1102	0.156	0.1102	1.3213	0.0000	0.0000
191.6	0.073526	0.1103	0.156	0.1103	1.3228	0.0000	0.0000
191.8	0.073607	0.1104	0.156	0.1104	1.3242	0.0000	0.0000
192	0.073687	0.1105	0.156	0.1105	1.3256	0.0000	0.0000
192.2	0.073767	0.1107	0.156	0.1107	1.3271	0.0000	0.0000
192.4	0.073847	0.1108	0.156	0.1108	1.3285	0.0000	0.0000
192.6	0.073927	0.1109	0.156	0.1109	1.3300	0.0000	0.0000
192.8	0.074008	0.1110	0.156	0.1110	1.3314	0.0000	0.0000
193	0.074088	0.1111	0.156	0.1111	1.3329	0.0000	0.0000
193.2	0.074168	0.1113	0.156	0.1113	1.3343	0.0000	0.0000
193.4	0.074248	0.1114	0.156	0.1114	1.3357	0.0000	0.0000
193.6	0.074329	0.1115	0.156	0.1115	1.3372	0.0000	0.0000
193.8	0.074409	0.1116	0.156	0.1116	1.3386	0.0000	0.0000
194	0.074489	0.1117	0.156	0.1117	1.3401	0.0000	0.0000
194.2	0.074569	0.1119	0.156	0.1119	1.3415	0.0000	0.0000
194.4	0.07465	0.1120	0.156	0.1120	1.3430	0.0000	0.0000
194.6	0.07473	0.1121	0.156	0.1121	1.3444	0.0000	0.0000
194.8	0.07481	0.1122	0.156	0.1122	1.3459	0.0000	0.0000
195	0.074891	0.1123	0.156	0.1123	1.3473	0.0000	0.0000
195.2	0.074971	0.1125	0.156	0.1125	1.3488	0.0000	0.0000
195.4	0.075051	0.1126	0.156	0.1126	1.3502	0.0000	0.0000
195.6	0.075132	0.1127	0.156	0.1127	1.3516	0.0000	0.0000
195.8	0.075212	0.1128	0.156	0.1128	1.3531	0.0000	0.0000

196	0.075292	0.1129	0.156	0.1129	1.3545	0.0000	0.0000
196.2	0.075373	0.1131	0.156	0.1131	1.3560	0.0000	0.0000
196.4	0.075453	0.1132	0.156	0.1132	1.3574	0.0000	0.0000
196.6	0.075533	0.1133	0.156	0.1133	1.3589	0.0000	0.0000
196.8	0.075614	0.1134	0.156	0.1134	1.3603	0.0000	0.0000
197	0.075694	0.1135	0.156	0.1135	1.3618	0.0000	0.0000
197.2	0.075775	0.1137	0.156	0.1137	1.3632	0.0000	0.0000
197.4	0.075855	0.1138	0.156	0.1138	1.3647	0.0000	0.0000
197.6	0.075935	0.1139	0.156	0.1139	1.3661	0.0000	0.0000
197.8	0.076016	0.1140	0.156	0.1140	1.3676	0.0000	0.0000
198	0.076096	0.1141	0.156	0.1141	1.3690	0.0000	0.0000
198.2	0.076177	0.1143	0.156	0.1143	1.3705	0.0000	0.0000
198.4	0.076257	0.1144	0.156	0.1144	1.3719	0.0000	0.0000
198.6	0.076338	0.1145	0.156	0.1145	1.3734	0.0000	0.0000
198.8	0.076418	0.1146	0.156	0.1146	1.3748	0.0000	0.0000
199	0.076499	0.1147	0.156	0.1147	1.3762	0.0000	0.0000
199.2	0.076579	0.1149	0.156	0.1149	1.3777	0.0000	0.0000
199.4	0.07666	0.1150	0.156	0.1150	1.3791	0.0000	0.0000
199.6	0.07674	0.1151	0.156	0.1151	1.3806	0.0000	0.0000
199.8	0.07682	0.1152	0.156	0.1152	1.3820	0.0000	0.0000
200	0.076901	0.1154	0.156	0.1154	1.3835	0.0000	0.0000
200.2	0.076982	0.1155	0.156	0.1155	1.3849	0.0000	0.0000
200.4	0.077062	0.1156	0.156	0.1156	1.3864	0.0000	0.0000
200.6	0.077143	0.1157	0.156	0.1157	1.3878	0.0000	0.0000
200.8	0.077223	0.1158	0.156	0.1158	1.3893	0.0000	0.0000
201	0.077304	0.1160	0.156	0.1160	1.3907	0.0000	0.0000
201.2	0.077384	0.1161	0.156	0.1161	1.3922	0.0000	0.0000
201.4	0.077465	0.1162	0.156	0.1162	1.3936	0.0000	0.0000
201.6	0.077545	0.1163	0.156	0.1163	1.3951	0.0000	0.0000
201.8	0.077626	0.1164	0.156	0.1164	1.3965	0.0000	0.0000
202	0.077707	0.1166	0.156	0.1166	1.3980	0.0000	0.0000
202.2	0.077787	0.1167	0.156	0.1167	1.3994	0.0000	0.0000
202.4	0.077868	0.1168	0.156	0.1168	1.4009	0.0000	0.0000
202.6	0.077948	0.1169	0.156	0.1169	1.4023	0.0000	0.0000
202.8	0.078029	0.1170	0.156	0.1170	1.4038	0.0000	0.0000
203	0.07811	0.1172	0.156	0.1172	1.4052	0.0000	0.0000
203.2	0.07819	0.1173	0.156	0.1173	1.4067	0.0000	0.0000
203.4	0.078271	0.1174	0.156	0.1174	1.4082	0.0000	0.0000
203.6	0.078352	0.1175	0.156	0.1175	1.4096	0.0000	0.0000
203.8	0.078432	0.1176	0.156	0.1176	1.4111	0.0000	0.0000
204	0.078513	0.1178	0.156	0.1178	1.4125	0.0000	0.0000
204.2	0.078594	0.1179	0.156	0.1179	1.4140	0.0000	0.0000
204.4	0.078674	0.1180	0.156	0.1180	1.4154	0.0000	0.0000
204.6	0.078755	0.1181	0.156	0.1181	1.4169	0.0000	0.0000
204.8	0.078836	0.1183	0.156	0.1183	1.4183	0.0000	0.0000
205	0.078916	0.1184	0.156	0.1184	1.4198	0.0000	0.0000
205.2	0.078997	0.1185	0.156	0.1185	1.4212	0.0000	0.0000

205.4	0.079078	0.1186	0.156	0.1186	1.4227	0.0000	0.0000
205.6	0.079159	0.1187	0.156	0.1187	1.4241	0.0000	0.0000
205.8	0.079239	0.1189	0.156	0.1189	1.4256	0.0000	0.0000
206	0.07932	0.1190	0.156	0.1190	1.4270	0.0000	0.0000
206.2	0.079401	0.1191	0.156	0.1191	1.4285	0.0000	0.0000
206.4	0.079482	0.1192	0.156	0.1192	1.4299	0.0000	0.0000
206.6	0.079562	0.1193	0.156	0.1193	1.4314	0.0000	0.0000
206.8	0.079643	0.1195	0.156	0.1195	1.4328	0.0000	0.0000
207	0.079724	0.1196	0.156	0.1196	1.4343	0.0000	0.0000
207.2	0.079805	0.1197	0.156	0.1197	1.4358	0.0000	0.0000
207.4	0.079885	0.1198	0.156	0.1198	1.4372	0.0000	0.0000
207.6	0.079966	0.1199	0.156	0.1199	1.4387	0.0000	0.0000
207.8	0.080047	0.1201	0.156	0.1201	1.4401	0.0000	0.0000
208	0.080128	0.1202	0.156	0.1202	1.4416	0.0000	0.0000
208.2	0.080209	0.1203	0.156	0.1203	1.4430	0.0000	0.0000
208.4	0.08029	0.1204	0.156	0.1204	1.4445	0.0000	0.0000
208.6	0.08037	0.1206	0.156	0.1206	1.4459	0.0000	0.0000
208.8	0.080451	0.1207	0.156	0.1207	1.4474	0.0000	0.0000
209	0.080532	0.1208	0.156	0.1208	1.4489	0.0000	0.0000
209.2	0.080613	0.1209	0.156	0.1209	1.4503	0.0000	0.0000
209.4	0.080694	0.1210	0.156	0.1210	1.4518	0.0000	0.0000
209.6	0.080775	0.1212	0.156	0.1212	1.4532	0.0000	0.0000
209.8	0.080856	0.1213	0.156	0.1213	1.4547	0.0000	0.0000
210	0.080937	0.1214	0.156	0.1214	1.4561	0.0000	0.0000
210.2	0.081018	0.1215	0.156	0.1215	1.4576	0.0000	0.0000
210.4	0.081098	0.1216	0.156	0.1216	1.4590	0.0000	0.0000
210.6	0.081179	0.1218	0.156	0.1218	1.4605	0.0000	0.0000
210.8	0.08126	0.1219	0.156	0.1219	1.4620	0.0000	0.0000
211	0.081341	0.1220	0.156	0.1220	1.4634	0.0000	0.0000
211.2	0.081422	0.1221	0.156	0.1221	1.4649	0.0000	0.0000
211.4	0.081503	0.1223	0.156	0.1223	1.4663	0.0000	0.0000
211.6	0.081584	0.1224	0.156	0.1224	1.4678	0.0000	0.0000
211.8	0.081665	0.1225	0.156	0.1225	1.4692	0.0000	0.0000
212	0.081746	0.1226	0.156	0.1226	1.4707	0.0000	0.0000
212.2	0.081827	0.1227	0.156	0.1227	1.4722	0.0000	0.0000
212.4	0.081908	0.1229	0.156	0.1229	1.4736	0.0000	0.0000
212.6	0.081989	0.1230	0.156	0.1230	1.4751	0.0000	0.0000
212.8	0.08207	0.1231	0.156	0.1231	1.4765	0.0000	0.0000
213	0.082151	0.1232	0.156	0.1232	1.4780	0.0000	0.0000
213.2	0.082232	0.1233	0.156	0.1233	1.4795	0.0000	0.0000
213.4	0.082313	0.1235	0.156	0.1235	1.4809	0.0000	0.0000
213.6	0.082394	0.1236	0.156	0.1236	1.4824	0.0000	0.0000
213.8	0.082475	0.1237	0.156	0.1237	1.4838	0.0000	0.0000
214	0.082557	0.1238	0.156	0.1238	1.4853	0.0000	0.0000
214.2	0.082638	0.1240	0.156	0.1240	1.4867	0.0000	0.0000
214.4	0.082719	0.1241	0.156	0.1241	1.4882	0.0000	0.0000
214.6	0.0828	0.1242	0.156	0.1242	1.4897	0.0000	0.0000

214.8	0.082881	0.1243	0.156	0.1243	1.4911	0.0000	0.0000
215	0.082962	0.1244	0.156	0.1244	1.4926	0.0000	0.0000
215.2	0.083043	0.1246	0.156	0.1246	1.4940	0.0000	0.0000
215.4	0.083124	0.1247	0.156	0.1247	1.4955	0.0000	0.0000
215.6	0.083205	0.1248	0.156	0.1248	1.4970	0.0000	0.0000
215.8	0.083287	0.1249	0.156	0.1249	1.4984	0.0000	0.0000
216	0.083368	0.1251	0.156	0.1251	1.4999	0.0000	0.0000
216.2	0.083449	0.1252	0.156	0.1252	1.5013	0.0000	0.0000
216.4	0.08353	0.1253	0.156	0.1253	1.5028	0.0000	0.0000
216.6	0.083611	0.1254	0.156	0.1254	1.5043	0.0000	0.0000
216.8	0.083692	0.1255	0.156	0.1255	1.5057	0.0000	0.0000
217	0.083774	0.1257	0.156	0.1257	1.5072	0.0000	0.0000
217.2	0.083855	0.1258	0.156	0.1258	1.5087	0.0000	0.0000
217.4	0.083936	0.1259	0.156	0.1259	1.5101	0.0000	0.0000
217.6	0.084017	0.1260	0.156	0.1260	1.5116	0.0000	0.0000
217.8	0.084098	0.1261	0.156	0.1261	1.5130	0.0000	0.0000
218	0.08418	0.1263	0.156	0.1263	1.5145	0.0000	0.0000
218.2	0.084261	0.1264	0.156	0.1264	1.5160	0.0000	0.0000
218.4	0.084342	0.1265	0.156	0.1265	1.5174	0.0000	0.0000
218.6	0.084423	0.1266	0.156	0.1266	1.5189	0.0000	0.0000
218.8	0.084505	0.1268	0.156	0.1268	1.5204	0.0000	0.0000
219	0.084586	0.1269	0.156	0.1269	1.5218	0.0000	0.0000
219.2	0.084667	0.1270	0.156	0.1270	1.5233	0.0000	0.0000
219.4	0.084749	0.1271	0.156	0.1271	1.5247	0.0000	0.0000
219.6	0.08483	0.1272	0.156	0.1272	1.5262	0.0000	0.0000
219.8	0.084911	0.1274	0.156	0.1274	1.5277	0.0000	0.0000
220	0.084992	0.1275	0.156	0.1275	1.5291	0.0000	0.0000
220.2	0.085074	0.1276	0.156	0.1276	1.5306	0.0000	0.0000
220.4	0.085155	0.1277	0.156	0.1277	1.5321	0.0000	0.0000
220.6	0.085236	0.1279	0.156	0.1279	1.5335	0.0000	0.0000
220.8	0.085318	0.1280	0.156	0.1280	1.5350	0.0000	0.0000
221	0.085399	0.1281	0.156	0.1281	1.5365	0.0000	0.0000
221.2	0.085481	0.1282	0.156	0.1282	1.5379	0.0000	0.0000
221.4	0.085562	0.1283	0.156	0.1283	1.5394	0.0000	0.0000
221.6	0.085643	0.1285	0.156	0.1285	1.5408	0.0000	0.0000
221.8	0.085725	0.1286	0.156	0.1286	1.5423	0.0000	0.0000
222	0.085806	0.1287	0.156	0.1287	1.5438	0.0000	0.0000
222.2	0.085888	0.1288	0.156	0.1288	1.5452	0.0000	0.0000
222.4	0.085969	0.1290	0.156	0.1290	1.5467	0.0000	0.0000
222.6	0.08605	0.1291	0.156	0.1291	1.5482	0.0000	0.0000
222.8	0.086132	0.1292	0.156	0.1292	1.5496	0.0000	0.0000
223	0.086213	0.1293	0.156	0.1293	1.5511	0.0000	0.0000
223.2	0.086295	0.1294	0.156	0.1294	1.5526	0.0000	0.0000
223.4	0.086376	0.1296	0.156	0.1296	1.5540	0.0000	0.0000
223.6	0.086458	0.1297	0.156	0.1297	1.5555	0.0000	0.0000
223.8	0.086539	0.1298	0.156	0.1298	1.5570	0.0000	0.0000
224	0.086621	0.1299	0.156	0.1299	1.5584	0.0000	0.0000

224.2	0.086702	0.1301	0.156	0.1301	1.5599	0.0000	0.0000
224.4	0.086784	0.1302	0.156	0.1302	1.5614	0.0000	0.0000
224.6	0.086865	0.1303	0.156	0.1303	1.5628	0.0000	0.0000
224.8	0.086947	0.1304	0.156	0.1304	1.5643	0.0000	0.0000
225	0.087028	0.1305	0.156	0.1305	1.5658	0.0000	0.0000
225.2	0.08711	0.1307	0.156	0.1307	1.5672	0.0000	0.0000
225.4	0.087191	0.1308	0.156	0.1308	1.5687	0.0000	0.0000
225.6	0.087273	0.1309	0.156	0.1309	1.5702	0.0000	0.0000
225.8	0.087354	0.1310	0.156	0.1310	1.5716	0.0000	0.0000
226	0.087436	0.1312	0.156	0.1312	1.5731	0.0000	0.0000
226.2	0.087517	0.1313	0.156	0.1313	1.5746	0.0000	0.0000
226.4	0.087599	0.1314	0.156	0.1314	1.5760	0.0000	0.0000
226.6	0.087681	0.1315	0.156	0.1315	1.5775	0.0000	0.0000
226.8	0.087762	0.1316	0.156	0.1316	1.5790	0.0000	0.0000
227	0.087844	0.1318	0.156	0.1318	1.5805	0.0000	0.0000
227.2	0.087925	0.1319	0.156	0.1319	1.5819	0.0000	0.0000
227.4	0.088007	0.1320	0.156	0.1320	1.5834	0.0000	0.0000
227.6	0.088089	0.1321	0.156	0.1321	1.5849	0.0000	0.0000
227.8	0.08817	0.1323	0.156	0.1323	1.5863	0.0000	0.0000
228	0.088252	0.1324	0.156	0.1324	1.5878	0.0000	0.0000
228.2	0.088334	0.1325	0.156	0.1325	1.5893	0.0000	0.0000
228.4	0.088415	0.1326	0.156	0.1326	1.5907	0.0000	0.0000
228.6	0.088497	0.1327	0.156	0.1327	1.5922	0.0000	0.0000
228.8	0.088579	0.1329	0.156	0.1329	1.5937	0.0000	0.0000
229	0.08866	0.1330	0.156	0.1330	1.5951	0.0000	0.0000
229.2	0.088742	0.1331	0.156	0.1331	1.5966	0.0000	0.0000
229.4	0.088824	0.1332	0.156	0.1332	1.5981	0.0000	0.0000
229.6	0.088905	0.1334	0.156	0.1334	1.5996	0.0000	0.0000
229.8	0.088987	0.1335	0.156	0.1335	1.6010	0.0000	0.0000
230	0.089069	0.1336	0.156	0.1336	1.6025	0.0000	0.0000
230.2	0.089151	0.1337	0.156	0.1337	1.6040	0.0000	0.0000
230.4	0.089232	0.1338	0.156	0.1338	1.6054	0.0000	0.0000
230.6	0.089314	0.1340	0.156	0.1340	1.6069	0.0000	0.0000
230.8	0.089396	0.1341	0.156	0.1341	1.6084	0.0000	0.0000
231	0.089478	0.1342	0.156	0.1342	1.6099	0.0000	0.0000
231.2	0.089559	0.1343	0.156	0.1343	1.6113	0.0000	0.0000
231.4	0.089641	0.1345	0.156	0.1345	1.6128	0.0000	0.0000
231.6	0.089723	0.1346	0.156	0.1346	1.6143	0.0000	0.0000
231.8	0.089805	0.1347	0.156	0.1347	1.6157	0.0000	0.0000
232	0.089887	0.1348	0.156	0.1348	1.6172	0.0000	0.0000
232.2	0.089968	0.1350	0.156	0.1350	1.6187	0.0000	0.0000
232.4	0.09005	0.1351	0.156	0.1351	1.6202	0.0000	0.0000
232.6	0.090132	0.1352	0.156	0.1352	1.6216	0.0000	0.0000
232.8	0.090214	0.1353	0.156	0.1353	1.6231	0.0000	0.0000
233	0.090296	0.1354	0.156	0.1354	1.6246	0.0000	0.0000
233.2	0.090378	0.1356	0.156	0.1356	1.6261	0.0000	0.0000
233.4	0.09046	0.1357	0.156	0.1357	1.6275	0.0000	0.0000

233.6	0.090541	0.1358	0.156	0.1358	1.6290	0.0000	0.0000
233.8	0.090623	0.1359	0.156	0.1359	1.6305	0.0000	0.0000
234	0.090705	0.1361	0.156	0.1361	1.6320	0.0000	0.0000
234.2	0.090787	0.1362	0.156	0.1362	1.6334	0.0000	0.0000
234.4	0.090869	0.1363	0.156	0.1363	1.6349	0.0000	0.0000
234.6	0.090951	0.1364	0.156	0.1364	1.6364	0.0000	0.0000
234.8	0.091033	0.1365	0.156	0.1365	1.6379	0.0000	0.0000
235	0.091115	0.1367	0.156	0.1367	1.6393	0.0000	0.0000
235.2	0.091197	0.1368	0.156	0.1368	1.6408	0.0000	0.0000
235.4	0.091279	0.1369	0.156	0.1369	1.6423	0.0000	0.0000
235.6	0.091361	0.1370	0.156	0.1370	1.6438	0.0000	0.0000
235.8	0.091443	0.1372	0.156	0.1372	1.6452	0.0000	0.0000
236	0.091525	0.1373	0.156	0.1373	1.6467	0.0000	0.0000
236.2	0.091607	0.1374	0.156	0.1374	1.6482	0.0000	0.0000
236.4	0.091689	0.1375	0.156	0.1375	1.6497	0.0000	0.0000
236.6	0.091771	0.1377	0.156	0.1377	1.6511	0.0000	0.0000
236.8	0.091853	0.1378	0.156	0.1378	1.6526	0.0000	0.0000
237	0.091935	0.1379	0.156	0.1379	1.6541	0.0000	0.0000
237.2	0.092017	0.1380	0.156	0.1380	1.6556	0.0000	0.0000
237.4	0.092099	0.1381	0.156	0.1381	1.6570	0.0000	0.0000
237.6	0.092181	0.1383	0.156	0.1383	1.6585	0.0000	0.0000
237.8	0.092263	0.1384	0.156	0.1384	1.6600	0.0000	0.0000
238	0.092345	0.1385	0.156	0.1385	1.6615	0.0000	0.0000
238.2	0.092427	0.1386	0.156	0.1386	1.6629	0.0000	0.0000
238.4	0.092509	0.1388	0.156	0.1388	1.6644	0.0000	0.0000
238.6	0.092591	0.1389	0.156	0.1389	1.6659	0.0000	0.0000
238.8	0.092673	0.1390	0.156	0.1390	1.6674	0.0000	0.0000
239	0.092755	0.1391	0.156	0.1391	1.6689	0.0000	0.0000
239.2	0.092837	0.1393	0.156	0.1393	1.6703	0.0000	0.0000
239.4	0.09292	0.1394	0.156	0.1394	1.6718	0.0000	0.0000
239.6	0.093002	0.1395	0.156	0.1395	1.6733	0.0000	0.0000
239.8	0.093084	0.1396	0.156	0.1396	1.6748	0.0000	0.0000
240	0.093166	0.1397	0.156	0.1397	1.6762	0.0000	0.0000
240.2	0.093248	0.1399	0.156	0.1399	1.6777	0.0000	0.0000
240.4	0.09333	0.1400	0.156	0.1400	1.6792	0.0000	0.0000
240.6	0.093412	0.1401	0.156	0.1401	1.6807	0.0000	0.0000
240.8	0.093495	0.1402	0.156	0.1402	1.6822	0.0000	0.0000
241	0.093577	0.1404	0.156	0.1404	1.6836	0.0000	0.0000
241.2	0.093659	0.1405	0.156	0.1405	1.6851	0.0000	0.0000
241.4	0.093741	0.1406	0.156	0.1406	1.6866	0.0000	0.0000
241.6	0.093823	0.1407	0.156	0.1407	1.6881	0.0000	0.0000
241.8	0.093906	0.1409	0.156	0.1409	1.6896	0.0000	0.0000
242	0.093988	0.1410	0.156	0.1410	1.6910	0.0000	0.0000
242.2	0.09407	0.1411	0.156	0.1411	1.6925	0.0000	0.0000
242.4	0.094152	0.1412	0.156	0.1412	1.6940	0.0000	0.0000
242.6	0.094235	0.1414	0.156	0.1414	1.6955	0.0000	0.0000
242.8	0.094317	0.1415	0.156	0.1415	1.6970	0.0000	0.0000

243	0.094399	0.1416	0.156	0.1416	1.6984	0.0000	0.0000
243.2	0.094482	0.1417	0.156	0.1417	1.6999	0.0000	0.0000
243.4	0.094564	0.1418	0.156	0.1418	1.7014	0.0000	0.0000
243.6	0.094646	0.1420	0.156	0.1420	1.7029	0.0000	0.0000
243.8	0.094728	0.1421	0.156	0.1421	1.7044	0.0000	0.0000
244	0.094811	0.1422	0.156	0.1422	1.7059	0.0000	0.0000
244.2	0.094893	0.1423	0.156	0.1423	1.7073	0.0000	0.0000
244.4	0.094975	0.1425	0.156	0.1425	1.7088	0.0000	0.0000
244.6	0.095058	0.1426	0.156	0.1426	1.7103	0.0000	0.0000
244.8	0.09514	0.1427	0.156	0.1427	1.7118	0.0000	0.0000
245	0.095222	0.1428	0.156	0.1428	1.7133	0.0000	0.0000
245.2	0.095305	0.1430	0.156	0.1430	1.7147	0.0000	0.0000
245.4	0.095387	0.1431	0.156	0.1431	1.7162	0.0000	0.0000
245.6	0.09547	0.1432	0.156	0.1432	1.7177	0.0000	0.0000
245.8	0.095552	0.1433	0.156	0.1433	1.7192	0.0000	0.0000
246	0.095634	0.1435	0.156	0.1435	1.7207	0.0000	0.0000
246.2	0.095717	0.1436	0.156	0.1436	1.7222	0.0000	0.0000
246.4	0.095799	0.1437	0.156	0.1437	1.7236	0.0000	0.0000
246.6	0.095882	0.1438	0.156	0.1438	1.7251	0.0000	0.0000
246.8	0.095964	0.1439	0.156	0.1439	1.7266	0.0000	0.0000
247	0.096047	0.1441	0.156	0.1441	1.7281	0.0000	0.0000
247.2	0.096129	0.1442	0.156	0.1442	1.7296	0.0000	0.0000
247.4	0.096212	0.1443	0.156	0.1443	1.7311	0.0000	0.0000
247.6	0.096294	0.1444	0.156	0.1444	1.7325	0.0000	0.0000
247.8	0.096376	0.1446	0.156	0.1446	1.7340	0.0000	0.0000
248	0.096459	0.1447	0.156	0.1447	1.7355	0.0000	0.0000
248.2	0.096541	0.1448	0.156	0.1448	1.7370	0.0000	0.0000
248.4	0.096624	0.1449	0.156	0.1449	1.7385	0.0000	0.0000
248.6	0.096706	0.1451	0.156	0.1451	1.7400	0.0000	0.0000
248.8	0.096789	0.1452	0.156	0.1452	1.7415	0.0000	0.0000
249	0.096872	0.1453	0.156	0.1453	1.7429	0.0000	0.0000
249.2	0.096954	0.1454	0.156	0.1454	1.7444	0.0000	0.0000
249.4	0.097037	0.1456	0.156	0.1456	1.7459	0.0000	0.0000
249.6	0.097119	0.1457	0.156	0.1457	1.7474	0.0000	0.0000
249.8	0.097202	0.1458	0.156	0.1458	1.7489	0.0000	0.0000
250	0.097284	0.1459	0.156	0.1459	1.7504	0.0000	0.0000
250.2	0.097367	0.1461	0.156	0.1461	1.7519	0.0000	0.0000
250.4	0.09745	0.1462	0.156	0.1462	1.7533	0.0000	0.0000
250.6	0.097532	0.1463	0.156	0.1463	1.7548	0.0000	0.0000
250.8	0.097615	0.1464	0.156	0.1464	1.7563	0.0000	0.0000
251	0.097697	0.1465	0.156	0.1465	1.7578	0.0000	0.0000
251.2	0.09778	0.1467	0.156	0.1467	1.7593	0.0000	0.0000
251.4	0.097863	0.1468	0.156	0.1468	1.7608	0.0000	0.0000
251.6	0.097945	0.1469	0.156	0.1469	1.7623	0.0000	0.0000
251.8	0.098028	0.1470	0.156	0.1470	1.7638	0.0000	0.0000
252	0.098111	0.1472	0.156	0.1472	1.7652	0.0000	0.0000
252.2	0.098193	0.1473	0.156	0.1473	1.7667	0.0000	0.0000

252.4	0.098276	0.1474	0.156	0.1474	1.7682	0.0000	0.0000
252.6	0.098359	0.1475	0.156	0.1475	1.7697	0.0000	0.0000
252.8	0.098441	0.1477	0.156	0.1477	1.7712	0.0000	0.0000
253	0.098524	0.1478	0.156	0.1478	1.7727	0.0000	0.0000
253.2	0.098607	0.1479	0.156	0.1479	1.7742	0.0000	0.0000
253.4	0.098689	0.1480	0.156	0.1480	1.7757	0.0000	0.0000
253.6	0.098772	0.1482	0.156	0.1482	1.7772	0.0000	0.0000
253.8	0.098855	0.1483	0.156	0.1483	1.7786	0.0000	0.0000
254	0.098938	0.1484	0.156	0.1484	1.7801	0.0000	0.0000
254.2	0.09902	0.1485	0.156	0.1485	1.7816	0.0000	0.0000
254.4	0.099103	0.1487	0.156	0.1487	1.7831	0.0000	0.0000
254.6	0.099186	0.1488	0.156	0.1488	1.7846	0.0000	0.0000
254.8	0.099269	0.1489	0.156	0.1489	1.7861	0.0000	0.0000
255	0.099352	0.1490	0.156	0.1490	1.7876	0.0000	0.0000
255.2	0.099434	0.1492	0.156	0.1492	1.7891	0.0000	0.0000
255.4	0.099517	0.1493	0.156	0.1493	1.7906	0.0000	0.0000
255.6	0.0996	0.1494	0.156	0.1494	1.7921	0.0000	0.0000
255.8	0.099683	0.1495	0.156	0.1495	1.7935	0.0000	0.0000
256	0.099766	0.1496	0.156	0.1496	1.7950	0.0000	0.0000
256.2	0.099848	0.1498	0.156	0.1498	1.7965	0.0000	0.0000
256.4	0.099931	0.1499	0.156	0.1499	1.7980	0.0000	0.0000
256.6	0.100014	0.1500	0.156	0.1500	1.7995	0.0000	0.0000
256.8	0.100097	0.1501	0.156	0.1501	1.8010	0.0000	0.0000
257	0.10018	0.1503	0.156	0.1503	1.8025	0.0000	0.0000
257.2	0.100263	0.1504	0.156	0.1504	1.8040	0.0000	0.0000
257.4	0.100346	0.1505	0.156	0.1505	1.8055	0.0000	0.0000
257.6	0.100429	0.1506	0.156	0.1506	1.8070	0.0000	0.0000
257.8	0.100512	0.1508	0.156	0.1508	1.8085	0.0000	0.0000
258	0.100594	0.1509	0.156	0.1509	1.8100	0.0000	0.0000
258.2	0.100677	0.1510	0.156	0.1510	1.8114	0.0000	0.0000
258.4	0.10076	0.1511	0.156	0.1511	1.8129	0.0000	0.0000
258.6	0.100843	0.1513	0.156	0.1513	1.8144	0.0000	0.0000
258.8	0.100926	0.1514	0.156	0.1514	1.8159	0.0000	0.0000
259	0.101009	0.1515	0.156	0.1515	1.8174	0.0000	0.0000
259.2	0.101092	0.1516	0.156	0.1516	1.8189	0.0000	0.0000
259.4	0.101175	0.1518	0.156	0.1518	1.8204	0.0000	0.0000
259.6	0.101258	0.1519	0.156	0.1519	1.8219	0.0000	0.0000
259.8	0.101341	0.1520	0.156	0.1520	1.8234	0.0000	0.0000
260	0.101424	0.1521	0.156	0.1521	1.8249	0.0000	0.0000
260.2	0.101507	0.1523	0.156	0.1523	1.8264	0.0000	0.0000
260.4	0.10159	0.1524	0.156	0.1524	1.8279	0.0000	0.0000
260.6	0.101673	0.1525	0.156	0.1525	1.8294	0.0000	0.0000
260.8	0.101756	0.1526	0.156	0.1526	1.8309	0.0000	0.0000
261	0.101839	0.1528	0.156	0.1528	1.8324	0.0000	0.0000
261.2	0.101922	0.1529	0.156	0.1529	1.8339	0.0000	0.0000
261.4	0.102006	0.1530	0.156	0.1530	1.8354	0.0000	0.0000
261.6	0.102089	0.1531	0.156	0.1531	1.8368	0.0000	0.0000

261.8	0.102172	0.1533	0.156	0.1533	1.8383	0.0000	0.0000
262	0.102255	0.1534	0.156	0.1534	1.8398	0.0000	0.0000
262.2	0.102338	0.1535	0.156	0.1535	1.8413	0.0000	0.0000
262.4	0.102421	0.1536	0.156	0.1536	1.8428	0.0000	0.0000
262.6	0.102504	0.1538	0.156	0.1538	1.8443	0.0000	0.0000
262.8	0.102587	0.1539	0.156	0.1539	1.8458	0.0000	0.0000
263	0.10267	0.1540	0.156	0.1540	1.8473	0.0000	0.0000
263.2	0.102754	0.1541	0.156	0.1541	1.8488	0.0000	0.0000
263.4	0.102837	0.1543	0.156	0.1543	1.8503	0.0000	0.0000
263.6	0.10292	0.1544	0.156	0.1544	1.8518	0.0000	0.0000
263.8	0.103003	0.1545	0.156	0.1545	1.8533	0.0000	0.0000
264	0.103086	0.1546	0.156	0.1546	1.8548	0.0000	0.0000
264.2	0.103169	0.1548	0.156	0.1548	1.8563	0.0000	0.0000
264.4	0.103253	0.1549	0.156	0.1549	1.8578	0.0000	0.0000
264.6	0.103336	0.1550	0.156	0.1550	1.8593	0.0000	0.0000
264.8	0.103419	0.1551	0.156	0.1551	1.8608	0.0000	0.0000
265	0.103502	0.1553	0.156	0.1553	1.8623	0.0000	0.0000
265.2	0.103586	0.1554	0.156	0.1554	1.8638	0.0000	0.0000
265.4	0.103669	0.1555	0.156	0.1555	1.8653	0.0000	0.0000
265.6	0.103752	0.1556	0.156	0.1556	1.8668	0.0000	0.0000
265.8	0.103835	0.1558	0.156	0.1557	1.8678	0.0001	0.0005
266	0.103919	0.1559	0.156	0.1557	1.8681	0.0002	0.0017
266.2	0.104002	0.1560	0.156	0.1557	1.8681	0.0003	0.0032
266.4	0.104085	0.1561	0.156	0.1557	1.8681	0.0005	0.0047
266.6	0.104168	0.1563	0.156	0.1557	1.8681	0.0006	0.0062
266.8	0.104252	0.1564	0.156	0.1557	1.8681	0.0007	0.0077
267	0.104335	0.1565	0.156	0.1557	1.8681	0.0008	0.0092
267.2	0.104418	0.1566	0.156	0.1557	1.8681	0.0010	0.0107
267.4	0.104502	0.1568	0.156	0.1557	1.8681	0.0011	0.0122
267.6	0.104585	0.1569	0.156	0.1557	1.8681	0.0012	0.0137
267.8	0.104668	0.1570	0.156	0.1557	1.8681	0.0013	0.0152
268	0.104752	0.1571	0.156	0.1557	1.8681	0.0015	0.0167
268.2	0.104835	0.1573	0.156	0.1557	1.8681	0.0016	0.0182
268.4	0.104919	0.1574	0.156	0.1557	1.8681	0.0017	0.0197
268.6	0.105002	0.1575	0.156	0.1557	1.8681	0.0018	0.0212
268.8	0.105085	0.1576	0.156	0.1557	1.8681	0.0020	0.0227
269	0.105169	0.1578	0.156	0.1557	1.8681	0.0021	0.0242
269.2	0.105252	0.1579	0.156	0.1557	1.8681	0.0022	0.0257
269.4	0.105336	0.1580	0.156	0.1557	1.8681	0.0023	0.0272
269.6	0.105419	0.1581	0.156	0.1557	1.8681	0.0025	0.0287
269.8	0.105502	0.1583	0.156	0.1557	1.8681	0.0026	0.0302
270	0.105586	0.1584	0.156	0.1557	1.8681	0.0027	0.0317
270.2	0.105669	0.1585	0.156	0.1557	1.8681	0.0028	0.0332
270.4	0.105753	0.1586	0.156	0.1557	1.8681	0.0030	0.0347
270.6	0.105836	0.1588	0.156	0.1557	1.8681	0.0031	0.0362
270.8	0.10592	0.1589	0.156	0.1557	1.8681	0.0032	0.0377
271	0.106003	0.1590	0.156	0.1557	1.8681	0.0033	0.0393

271.2	0.106087	0.1591	0.156	0.1557	1.8681	0.0035	0.0408
271.4	0.10617	0.1593	0.156	0.1557	1.8681	0.0036	0.0423
271.6	0.106254	0.1594	0.156	0.1557	1.8681	0.0037	0.0438
271.8	0.106337	0.1595	0.156	0.1557	1.8681	0.0038	0.0453
272	0.106421	0.1596	0.156	0.1557	1.8681	0.0040	0.0468
272.2	0.106504	0.1598	0.156	0.1557	1.8681	0.0041	0.0483
272.4	0.106588	0.1599	0.156	0.1557	1.8681	0.0042	0.0498
272.6	0.106672	0.1600	0.156	0.1557	1.8681	0.0043	0.0513
272.8	0.106755	0.1601	0.156	0.1557	1.8681	0.0045	0.0528
273	0.106839	0.1603	0.156	0.1557	1.8681	0.0046	0.0543
273.2	0.106922	0.1604	0.156	0.1557	1.8681	0.0047	0.0558
273.4	0.107006	0.1605	0.156	0.1557	1.8681	0.0048	0.0573
273.6	0.10709	0.1606	0.156	0.1557	1.8681	0.0050	0.0588
273.8	0.107173	0.1608	0.156	0.1557	1.8681	0.0051	0.0603
274	0.107257	0.1609	0.156	0.1557	1.8681	0.0052	0.0618
274.2	0.10734	0.1610	0.156	0.1557	1.8681	0.0053	0.0633
274.4	0.107424	0.1611	0.156	0.1557	1.8681	0.0055	0.0648
274.6	0.107508	0.1613	0.156	0.1557	1.8681	0.0056	0.0663
274.8	0.107591	0.1614	0.156	0.1557	1.8681	0.0057	0.0678
275	0.107675	0.1615	0.156	0.1557	1.8681	0.0058	0.0693
275.2	0.107759	0.1616	0.156	0.1557	1.8681	0.0060	0.0708
275.4	0.107842	0.1618	0.156	0.1557	1.8681	0.0061	0.0724
275.6	0.107926	0.1619	0.156	0.1557	1.8681	0.0062	0.0739
275.8	0.10801	0.1620	0.156	0.1557	1.8681	0.0063	0.0754
276	0.108094	0.1621	0.156	0.1557	1.8681	0.0065	0.0769
276.2	0.108177	0.1623	0.156	0.1557	1.8681	0.0066	0.0784
276.4	0.108261	0.1624	0.156	0.1557	1.8681	0.0067	0.0799
276.6	0.108345	0.1625	0.156	0.1557	1.8681	0.0068	0.0814
276.8	0.108429	0.1626	0.156	0.1557	1.8681	0.0070	0.0829
277	0.108512	0.1628	0.156	0.1557	1.8681	0.0071	0.0844
277.2	0.108596	0.1629	0.156	0.1557	1.8681	0.0072	0.0859
277.4	0.10868	0.1630	0.156	0.1557	1.8681	0.0073	0.0874
277.6	0.108764	0.1631	0.156	0.1557	1.8681	0.0075	0.0889
277.8	0.108847	0.1633	0.156	0.1557	1.8681	0.0076	0.0904
278	0.108931	0.1634	0.156	0.1557	1.8681	0.0077	0.0920
278.2	0.109015	0.1635	0.156	0.1557	1.8681	0.0079	0.0935
278.4	0.109099	0.1636	0.156	0.1557	1.8681	0.0080	0.0950
278.6	0.109183	0.1638	0.156	0.1557	1.8681	0.0081	0.0965
278.8	0.109267	0.1639	0.156	0.1557	1.8681	0.0082	0.0980
279	0.10935	0.1640	0.156	0.1557	1.8681	0.0084	0.0995
279.2	0.109434	0.1642	0.156	0.1557	1.8681	0.0085	0.1010
279.4	0.109518	0.1643	0.156	0.1557	1.8681	0.0086	0.1025
279.6	0.109602	0.1644	0.156	0.1557	1.8681	0.0087	0.1040
279.8	0.109686	0.1645	0.156	0.1557	1.8681	0.0089	0.1055
280	0.10977	0.1647	0.156	0.1557	1.8681	0.0090	0.1070
280.2	0.109854	0.1648	0.156	0.1557	1.8681	0.0091	0.1086
280.4	0.109938	0.1649	0.156	0.1557	1.8681	0.0092	0.1101

280.6	0.110022	0.1650	0.156	0.1557	1.8681	0.0094	0.1116
280.8	0.110106	0.1652	0.156	0.1557	1.8681	0.0095	0.1131
281	0.11019	0.1653	0.156	0.1557	1.8681	0.0096	0.1146
281.2	0.110273	0.1654	0.156	0.1557	1.8681	0.0097	0.1161
281.4	0.110357	0.1655	0.156	0.1557	1.8681	0.0099	0.1176
281.6	0.110441	0.1657	0.156	0.1557	1.8681	0.0100	0.1191
281.8	0.110525	0.1658	0.156	0.1557	1.8681	0.0101	0.1206
282	0.110609	0.1659	0.156	0.1557	1.8681	0.0102	0.1222
282.2	0.110693	0.1660	0.156	0.1557	1.8681	0.0104	0.1237
282.4	0.110777	0.1662	0.156	0.1557	1.8681	0.0105	0.1252
282.6	0.110861	0.1663	0.156	0.1557	1.8681	0.0106	0.1267
282.8	0.110945	0.1664	0.156	0.1557	1.8681	0.0107	0.1282
283	0.111029	0.1665	0.156	0.1557	1.8681	0.0109	0.1297
283.2	0.111114	0.1667	0.156	0.1557	1.8681	0.0110	0.1312
283.4	0.111198	0.1668	0.156	0.1557	1.8681	0.0111	0.1327
283.6	0.111282	0.1669	0.156	0.1557	1.8681	0.0113	0.1343
283.8	0.111366	0.1670	0.156	0.1557	1.8681	0.0114	0.1358
284	0.11145	0.1672	0.156	0.1557	1.8681	0.0115	0.1373
284.2	0.111534	0.1673	0.156	0.1557	1.8681	0.0116	0.1388
284.4	0.111618	0.1674	0.156	0.1557	1.8681	0.0118	0.1403
284.6	0.111702	0.1676	0.156	0.1557	1.8681	0.0119	0.1418
284.8	0.111786	0.1677	0.156	0.1557	1.8681	0.0120	0.1433
285	0.11187	0.1678	0.156	0.1557	1.8681	0.0121	0.1449
285.2	0.111954	0.1679	0.156	0.1557	1.8681	0.0123	0.1464
285.4	0.112039	0.1681	0.156	0.1557	1.8681	0.0124	0.1479
285.6	0.112123	0.1682	0.156	0.1557	1.8681	0.0125	0.1494
285.8	0.112207	0.1683	0.156	0.1557	1.8681	0.0126	0.1509
286	0.112291	0.1684	0.156	0.1557	1.8681	0.0128	0.1524
286.2	0.112375	0.1686	0.156	0.1557	1.8681	0.0129	0.1539
286.4	0.112459	0.1687	0.156	0.1557	1.8681	0.0130	0.1555
286.6	0.112544	0.1688	0.156	0.1557	1.8681	0.0131	0.1570
286.8	0.112628	0.1689	0.156	0.1557	1.8681	0.0133	0.1585
287	0.112712	0.1691	0.156	0.1557	1.8681	0.0134	0.1600
287.2	0.112796	0.1692	0.156	0.1557	1.8681	0.0135	0.1615
287.4	0.112881	0.1693	0.156	0.1557	1.8681	0.0136	0.1630
287.6	0.112965	0.1694	0.156	0.1557	1.8681	0.0138	0.1646
287.8	0.113049	0.1696	0.156	0.1557	1.8681	0.0139	0.1661
288	0.113133	0.1697	0.156	0.1557	1.8681	0.0140	0.1676
288.2	0.113218	0.1698	0.156	0.1557	1.8681	0.0142	0.1691
288.4	0.113302	0.1700	0.156	0.1557	1.8681	0.0143	0.1706
288.6	0.113386	0.1701	0.156	0.1557	1.8681	0.0144	0.1721
288.8	0.11347	0.1702	0.156	0.1557	1.8681	0.0145	0.1737
289	0.113555	0.1703	0.156	0.1557	1.8681	0.0147	0.1752
289.2	0.113639	0.1705	0.156	0.1557	1.8681	0.0148	0.1767
289.4	0.113723	0.1706	0.156	0.1557	1.8681	0.0149	0.1782
289.6	0.113808	0.1707	0.156	0.1557	1.8681	0.0150	0.1797
289.8	0.113892	0.1708	0.156	0.1557	1.8681	0.0152	0.1812

290	0.113976	0.1710	0.156	0.1557	1.8681	0.0153	0.1828
290.2	0.114061	0.1711	0.156	0.1557	1.8681	0.0154	0.1843
290.4	0.114145	0.1712	0.156	0.1557	1.8681	0.0155	0.1858
290.6	0.11423	0.1713	0.156	0.1557	1.8681	0.0157	0.1873
290.8	0.114314	0.1715	0.156	0.1557	1.8681	0.0158	0.1888
291	0.114398	0.1716	0.156	0.1557	1.8681	0.0159	0.1904
291.2	0.114483	0.1717	0.156	0.1557	1.8681	0.0161	0.1919
291.4	0.114567	0.1719	0.156	0.1557	1.8681	0.0162	0.1934
291.6	0.114652	0.1720	0.156	0.1557	1.8681	0.0163	0.1949
291.8	0.114736	0.1721	0.156	0.1557	1.8681	0.0164	0.1964
292	0.114821	0.1722	0.156	0.1557	1.8681	0.0166	0.1980
292.2	0.114905	0.1724	0.156	0.1557	1.8681	0.0167	0.1995
292.4	0.114989	0.1725	0.156	0.1557	1.8681	0.0168	0.2010
292.6	0.115074	0.1726	0.156	0.1557	1.8681	0.0169	0.2025
292.8	0.115158	0.1727	0.156	0.1557	1.8681	0.0171	0.2040
293	0.115243	0.1729	0.156	0.1557	1.8681	0.0172	0.2056
293.2	0.115327	0.1730	0.156	0.1557	1.8681	0.0173	0.2071
293.4	0.115412	0.1731	0.156	0.1557	1.8681	0.0174	0.2086
293.6	0.115496	0.1732	0.156	0.1557	1.8681	0.0176	0.2101
293.8	0.115581	0.1734	0.156	0.1557	1.8681	0.0177	0.2116
294	0.115665	0.1735	0.156	0.1557	1.8681	0.0178	0.2132
294.2	0.11575	0.1736	0.156	0.1557	1.8681	0.0180	0.2147
294.4	0.115835	0.1738	0.156	0.1557	1.8681	0.0181	0.2162
294.6	0.115919	0.1739	0.156	0.1557	1.8681	0.0182	0.2177
294.8	0.116004	0.1740	0.156	0.1557	1.8681	0.0183	0.2193
295	0.116088	0.1741	0.156	0.1557	1.8681	0.0185	0.2208
295.2	0.116173	0.1743	0.156	0.1557	1.8681	0.0186	0.2223
295.4	0.116258	0.1744	0.156	0.1557	1.8681	0.0187	0.2238
295.6	0.116342	0.1745	0.156	0.1557	1.8681	0.0188	0.2253
295.8	0.116427	0.1746	0.156	0.1557	1.8681	0.0190	0.2269
296	0.116511	0.1748	0.156	0.1557	1.8681	0.0191	0.2284
296.2	0.116596	0.1749	0.156	0.1557	1.8681	0.0192	0.2299
296.4	0.116681	0.1750	0.156	0.1557	1.8681	0.0193	0.2314
296.6	0.116765	0.1751	0.156	0.1557	1.8681	0.0195	0.2330
296.8	0.11685	0.1753	0.156	0.1557	1.8681	0.0196	0.2345
297	0.116935	0.1754	0.156	0.1557	1.8681	0.0197	0.2360
297.2	0.117019	0.1755	0.156	0.1557	1.8681	0.0199	0.2375
297.4	0.117104	0.1757	0.156	0.1557	1.8681	0.0200	0.2391
297.6	0.117189	0.1758	0.156	0.1557	1.8681	0.0201	0.2406
297.8	0.117274	0.1759	0.156	0.1557	1.8681	0.0202	0.2421
298	0.117358	0.1760	0.156	0.1557	1.8681	0.0204	0.2436
298.2	0.117443	0.1762	0.156	0.1557	1.8681	0.0205	0.2452
298.4	0.117528	0.1763	0.156	0.1557	1.8681	0.0206	0.2467
298.6	0.117612	0.1764	0.156	0.1557	1.8681	0.0207	0.2482
298.8	0.117697	0.1765	0.156	0.1557	1.8681	0.0209	0.2497
299	0.117782	0.1767	0.156	0.1557	1.8681	0.0210	0.2513
299.2	0.117867	0.1768	0.156	0.1557	1.8681	0.0211	0.2528

299.4	0.117952	0.1769	0.156	0.1557	1.8681	0.0213	0.2543
299.6	0.118036	0.1771	0.156	0.1557	1.8681	0.0214	0.2558
299.8	0.118121	0.1772	0.156	0.1557	1.8681	0.0215	0.2574
300	0.118206	0.1773	0.156	0.1557	1.8681	0.0216	0.2589
300.2	0.118291	0.1774	0.156	0.1557	1.8681	0.0218	0.2604
300.4	0.118376	0.1776	0.156	0.1557	1.8681	0.0219	0.2619
300.6	0.118461	0.1777	0.156	0.1557	1.8681	0.0220	0.2635
300.8	0.118545	0.1778	0.156	0.1557	1.8681	0.0221	0.2650
301	0.11863	0.1779	0.156	0.1557	1.8681	0.0223	0.2665
301.2	0.118715	0.1781	0.156	0.1557	1.8681	0.0224	0.2681
301.4	0.1188	0.1782	0.156	0.1557	1.8681	0.0225	0.2696
301.6	0.118885	0.1783	0.156	0.1557	1.8681	0.0227	0.2711
301.8	0.11897	0.1785	0.156	0.1557	1.8681	0.0228	0.2726
302	0.119055	0.1786	0.156	0.1557	1.8681	0.0229	0.2742
302.2	0.11914	0.1787	0.156	0.1557	1.8681	0.0230	0.2757
302.4	0.119225	0.1788	0.156	0.1557	1.8681	0.0232	0.2772
302.6	0.11931	0.1790	0.156	0.1557	1.8681	0.0233	0.2788
302.8	0.119394	0.1791	0.156	0.1557	1.8681	0.0234	0.2803
303	0.119479	0.1792	0.156	0.1557	1.8681	0.0235	0.2818
303.2	0.119564	0.1793	0.156	0.1557	1.8681	0.0237	0.2833
303.4	0.119649	0.1795	0.156	0.1557	1.8681	0.0238	0.2849
303.6	0.119734	0.1796	0.156	0.1557	1.8681	0.0239	0.2864
303.8	0.119819	0.1797	0.156	0.1557	1.8681	0.0241	0.2879
304	0.119904	0.1799	0.156	0.1557	1.8681	0.0242	0.2895
304.2	0.119989	0.1800	0.156	0.1557	1.8681	0.0243	0.2910
304.4	0.120074	0.1801	0.156	0.1557	1.8681	0.0244	0.2925
304.6	0.120159	0.1802	0.156	0.1557	1.8681	0.0246	0.2940
304.8	0.120245	0.1804	0.156	0.1557	1.8681	0.0247	0.2956
305	0.12033	0.1805	0.156	0.1557	1.8681	0.0248	0.2971
305.2	0.120415	0.1806	0.156	0.1557	1.8681	0.0250	0.2986
305.4	0.1205	0.1807	0.156	0.1557	1.8681	0.0251	0.3002
305.6	0.120585	0.1809	0.156	0.1557	1.8681	0.0252	0.3017
305.8	0.12067	0.1810	0.156	0.1557	1.8681	0.0253	0.3032
306	0.120755	0.1811	0.156	0.1557	1.8681	0.0255	0.3048
306.2	0.12084	0.1813	0.156	0.1557	1.8681	0.0256	0.3063
306.4	0.120925	0.1814	0.156	0.1557	1.8681	0.0257	0.3078
306.6	0.12101	0.1815	0.156	0.1557	1.8681	0.0258	0.3094
306.8	0.121095	0.1816	0.156	0.1557	1.8681	0.0260	0.3109
307	0.121181	0.1818	0.156	0.1557	1.8681	0.0261	0.3124
307.2	0.121266	0.1819	0.156	0.1557	1.8681	0.0262	0.3140
307.4	0.121351	0.1820	0.156	0.1557	1.8681	0.0264	0.3155
307.6	0.121436	0.1822	0.156	0.1557	1.8681	0.0265	0.3170
307.8	0.121521	0.1823	0.156	0.1557	1.8681	0.0266	0.3186
308	0.121607	0.1824	0.156	0.1557	1.8681	0.0267	0.3201
308.2	0.121692	0.1825	0.156	0.1557	1.8681	0.0269	0.3216
308.4	0.121777	0.1827	0.156	0.1557	1.8681	0.0270	0.3232
308.6	0.121862	0.1828	0.156	0.1557	1.8681	0.0271	0.3247

308.8	0.121947	0.1829	0.156	0.1557	1.8681	0.0272	0.3262
309	0.122033	0.1830	0.156	0.1557	1.8681	0.0274	0.3278
309.2	0.122118	0.1832	0.156	0.1557	1.8681	0.0275	0.3293
309.4	0.122203	0.1833	0.156	0.1557	1.8681	0.0276	0.3308
309.6	0.122288	0.1834	0.156	0.1557	1.8681	0.0278	0.3324
309.8	0.122374	0.1836	0.156	0.1557	1.8681	0.0279	0.3339
310	0.122459	0.1837	0.156	0.1557	1.8681	0.0280	0.3354
310.2	0.122544	0.1838	0.156	0.1557	1.8681	0.0281	0.3370
310.4	0.12263	0.1839	0.156	0.1557	1.8681	0.0283	0.3385
310.6	0.122715	0.1841	0.156	0.1557	1.8681	0.0284	0.3400
310.8	0.1228	0.1842	0.156	0.1557	1.8681	0.0285	0.3416
311	0.122886	0.1843	0.156	0.1557	1.8681	0.0287	0.3431
311.2	0.122971	0.1845	0.156	0.1557	1.8681	0.0288	0.3447
311.4	0.123056	0.1846	0.156	0.1557	1.8681	0.0289	0.3462
311.6	0.123142	0.1847	0.156	0.1557	1.8681	0.0290	0.3477
311.8	0.123227	0.1848	0.156	0.1557	1.8681	0.0292	0.3493
312	0.123312	0.1850	0.156	0.1557	1.8681	0.0293	0.3508
312.2	0.123398	0.1851	0.156	0.1557	1.8681	0.0294	0.3523
312.4	0.123483	0.1852	0.156	0.1557	1.8681	0.0296	0.3539
312.6	0.123569	0.1854	0.156	0.1557	1.8681	0.0297	0.3554
312.8	0.123654	0.1855	0.156	0.1557	1.8681	0.0298	0.3569
313	0.12374	0.1856	0.156	0.1557	1.8681	0.0299	0.3585
313.2	0.123825	0.1857	0.156	0.1557	1.8681	0.0301	0.3600
313.4	0.12391	0.1859	0.156	0.1557	1.8681	0.0302	0.3616
313.6	0.123996	0.1860	0.156	0.1557	1.8681	0.0303	0.3631
313.8	0.124081	0.1861	0.156	0.1557	1.8681	0.0305	0.3646
314	0.124167	0.1863	0.156	0.1557	1.8681	0.0306	0.3662
314.2	0.124252	0.1864	0.156	0.1557	1.8681	0.0307	0.3677
314.4	0.124338	0.1865	0.156	0.1557	1.8681	0.0308	0.3693
314.6	0.124423	0.1866	0.156	0.1557	1.8681	0.0310	0.3708
314.8	0.124509	0.1868	0.156	0.1557	1.8681	0.0311	0.3723
315	0.124594	0.1869	0.156	0.1557	1.8681	0.0312	0.3739
315.2	0.12468	0.1870	0.156	0.1557	1.8681	0.0313	0.3754
315.4	0.124765	0.1871	0.156	0.1557	1.8681	0.0315	0.3770
315.6	0.124851	0.1873	0.156	0.1557	1.8681	0.0316	0.3785
315.8	0.124937	0.1874	0.156	0.1557	1.8681	0.0317	0.3800
316	0.125022	0.1875	0.156	0.1557	1.8681	0.0319	0.3816
316.2	0.125108	0.1877	0.156	0.1557	1.8681	0.0320	0.3831
316.4	0.125193	0.1878	0.156	0.1557	1.8681	0.0321	0.3847
316.6	0.125279	0.1879	0.156	0.1557	1.8681	0.0322	0.3862
316.8	0.125365	0.1880	0.156	0.1557	1.8681	0.0324	0.3877
317	0.12545	0.1882	0.156	0.1557	1.8681	0.0325	0.3893
317.2	0.125536	0.1883	0.156	0.1557	1.8681	0.0326	0.3908
317.4	0.125622	0.1884	0.156	0.1557	1.8681	0.0328	0.3924
317.6	0.125707	0.1886	0.156	0.1557	1.8681	0.0329	0.3939
317.8	0.125793	0.1887	0.156	0.1557	1.8681	0.0330	0.3954
318	0.125878	0.1888	0.156	0.1557	1.8681	0.0331	0.3970

318.2	0.125964	0.1889	0.156	0.1557	1.8681	0.0333	0.3985
318.4	0.12605	0.1891	0.156	0.1557	1.8681	0.0334	0.4001
318.6	0.126136	0.1892	0.156	0.1557	1.8681	0.0335	0.4016
318.8	0.126221	0.1893	0.156	0.1557	1.8681	0.0337	0.4032
319	0.126307	0.1895	0.156	0.1557	1.8681	0.0338	0.4047
319.2	0.126393	0.1896	0.156	0.1557	1.8681	0.0339	0.4062
319.4	0.126478	0.1897	0.156	0.1557	1.8681	0.0340	0.4078
319.6	0.126564	0.1898	0.156	0.1557	1.8681	0.0342	0.4093
319.8	0.12665	0.1900	0.156	0.1557	1.8681	0.0343	0.4109
320	0.126736	0.1901	0.156	0.1557	1.8681	0.0344	0.4124
320.2	0.126822	0.1902	0.156	0.1557	1.8681	0.0346	0.4140
320.4	0.126907	0.1904	0.156	0.1557	1.8681	0.0347	0.4155
320.6	0.126993	0.1905	0.156	0.1557	1.8681	0.0348	0.4170
320.8	0.127079	0.1906	0.156	0.1557	1.8681	0.0349	0.4186
321	0.127165	0.1907	0.156	0.1557	1.8681	0.0351	0.4201
321.2	0.127251	0.1909	0.156	0.1557	1.8681	0.0352	0.4217
321.4	0.127336	0.1910	0.156	0.1557	1.8681	0.0353	0.4232
321.6	0.127422	0.1911	0.156	0.1557	1.8681	0.0355	0.4248
321.8	0.127508	0.1913	0.156	0.1557	1.8681	0.0356	0.4263
322	0.127594	0.1914	0.156	0.1557	1.8681	0.0357	0.4279
322.2	0.12768	0.1915	0.156	0.1557	1.8681	0.0358	0.4294
322.4	0.127766	0.1916	0.156	0.1557	1.8681	0.0360	0.4310
322.6	0.127852	0.1918	0.156	0.1557	1.8681	0.0361	0.4325
322.8	0.127938	0.1919	0.156	0.1557	1.8681	0.0362	0.4340
323	0.128024	0.1920	0.156	0.1557	1.8681	0.0364	0.4356
323.2	0.128109	0.1922	0.156	0.1557	1.8681	0.0365	0.4371
323.4	0.128195	0.1923	0.156	0.1557	1.8681	0.0366	0.4387
323.6	0.128281	0.1924	0.156	0.1557	1.8681	0.0368	0.4402
323.8	0.128367	0.1926	0.156	0.1557	1.8681	0.0369	0.4418
324	0.128453	0.1927	0.156	0.1557	1.8681	0.0370	0.4433
324.2	0.128539	0.1928	0.156	0.1557	1.8681	0.0371	0.4449
324.4	0.128625	0.1929	0.156	0.1557	1.8681	0.0373	0.4464
324.6	0.128711	0.1931	0.156	0.1557	1.8681	0.0374	0.4480
324.8	0.128797	0.1932	0.156	0.1557	1.8681	0.0375	0.4495
325	0.128883	0.1933	0.156	0.1557	1.8681	0.0377	0.4511
325.2	0.128969	0.1935	0.156	0.1557	1.8681	0.0378	0.4526
325.4	0.129055	0.1936	0.156	0.1557	1.8681	0.0379	0.4542
325.6	0.129141	0.1937	0.156	0.1557	1.8681	0.0380	0.4557
325.8	0.129227	0.1938	0.156	0.1557	1.8681	0.0382	0.4573
326	0.129313	0.1940	0.156	0.1557	1.8681	0.0383	0.4588
326.2	0.1294	0.1941	0.156	0.1557	1.8681	0.0384	0.4604
326.4	0.129486	0.1942	0.156	0.1557	1.8681	0.0386	0.4619
326.6	0.129572	0.1944	0.156	0.1557	1.8681	0.0387	0.4635
326.8	0.129658	0.1945	0.156	0.1557	1.8681	0.0388	0.4650
327	0.129744	0.1946	0.156	0.1557	1.8681	0.0389	0.4666
327.2	0.12983	0.1947	0.156	0.1557	1.8681	0.0391	0.4681
327.4	0.129916	0.1949	0.156	0.1557	1.8681	0.0392	0.4697

327.6	0.130002	0.1950	0.156	0.1557	1.8681	0.0393	0.4712
327.8	0.130088	0.1951	0.156	0.1557	1.8681	0.0395	0.4728
328	0.130175	0.1953	0.156	0.1557	1.8681	0.0396	0.4743
328.2	0.130261	0.1954	0.156	0.1557	1.8681	0.0397	0.4759
328.4	0.130347	0.1955	0.156	0.1557	1.8681	0.0398	0.4774
328.6	0.130433	0.1956	0.156	0.1557	1.8681	0.0400	0.4790
328.8	0.130519	0.1958	0.156	0.1557	1.8681	0.0401	0.4805
329	0.130606	0.1959	0.156	0.1557	1.8681	0.0402	0.4821
329.2	0.130692	0.1960	0.156	0.1557	1.8681	0.0404	0.4836
329.4	0.130778	0.1962	0.156	0.1557	1.8681	0.0405	0.4852
329.6	0.130864	0.1963	0.156	0.1557	1.8681	0.0406	0.4867
329.8	0.130951	0.1964	0.156	0.1557	1.8681	0.0408	0.4883
330	0.131037	0.1966	0.156	0.1557	1.8681	0.0409	0.4898
330.2	0.131123	0.1967	0.156	0.1557	1.8681	0.0410	0.4914
330.4	0.131209	0.1968	0.156	0.1557	1.8681	0.0411	0.4929
330.6	0.131296	0.1969	0.156	0.1557	1.8681	0.0413	0.4945
330.8	0.131382	0.1971	0.156	0.1557	1.8681	0.0414	0.4960
331	0.131468	0.1972	0.156	0.1557	1.8681	0.0415	0.4976
331.2	0.131555	0.1973	0.156	0.1557	1.8681	0.0417	0.4991
331.4	0.131641	0.1975	0.156	0.1557	1.8681	0.0418	0.5007
331.6	0.131727	0.1976	0.156	0.1557	1.8681	0.0419	0.5023
331.8	0.131814	0.1977	0.156	0.1557	1.8681	0.0420	0.5038
332	0.1319	0.1978	0.156	0.1557	1.8681	0.0422	0.5054
332.2	0.131986	0.1980	0.156	0.1557	1.8681	0.0423	0.5069
332.4	0.132073	0.1981	0.156	0.1557	1.8681	0.0424	0.5085
332.6	0.132159	0.1982	0.156	0.1557	1.8681	0.0426	0.5100
332.8	0.132245	0.1984	0.156	0.1557	1.8681	0.0427	0.5116
333	0.132332	0.1985	0.156	0.1557	1.8681	0.0428	0.5131
333.2	0.132418	0.1986	0.156	0.1557	1.8681	0.0430	0.5147
333.4	0.132505	0.1988	0.156	0.1557	1.8681	0.0431	0.5163
333.6	0.132591	0.1989	0.156	0.1557	1.8681	0.0432	0.5178
333.8	0.132678	0.1990	0.156	0.1557	1.8681	0.0433	0.5194
334	0.132764	0.1991	0.156	0.1557	1.8681	0.0435	0.5209
334.2	0.132851	0.1993	0.156	0.1557	1.8681	0.0436	0.5225
334.4	0.132937	0.1994	0.156	0.1557	1.8681	0.0437	0.5240
334.6	0.133024	0.1995	0.156	0.1557	1.8681	0.0439	0.5256
334.8	0.13311	0.1997	0.156	0.1557	1.8681	0.0440	0.5271
335	0.133197	0.1998	0.156	0.1557	1.8681	0.0441	0.5287
335.2	0.133283	0.1999	0.156	0.1557	1.8681	0.0443	0.5303
335.4	0.13337	0.2001	0.156	0.1557	1.8681	0.0444	0.5318
335.6	0.133456	0.2002	0.156	0.1557	1.8681	0.0445	0.5334
335.8	0.133543	0.2003	0.156	0.1557	1.8681	0.0446	0.5349
336	0.133629	0.2004	0.156	0.1557	1.8681	0.0448	0.5365
336.2	0.133716	0.2006	0.156	0.1557	1.8681	0.0449	0.5380
336.4	0.133802	0.2007	0.156	0.1557	1.8681	0.0450	0.5396
336.6	0.133889	0.2008	0.156	0.1557	1.8681	0.0452	0.5412
336.8	0.133976	0.2010	0.156	0.1557	1.8681	0.0453	0.5427

337	0.134062	0.2011	0.156	0.1557	1.8681	0.0454	0.5443
337.2	0.134149	0.2012	0.156	0.1557	1.8681	0.0456	0.5458
337.4	0.134235	0.2014	0.156	0.1557	1.8681	0.0457	0.5474
337.6	0.134322	0.2015	0.156	0.1557	1.8681	0.0458	0.5490
337.8	0.134409	0.2016	0.156	0.1557	1.8681	0.0459	0.5505
338	0.134495	0.2017	0.156	0.1557	1.8681	0.0461	0.5521
338.2	0.134582	0.2019	0.156	0.1557	1.8681	0.0462	0.5536
338.4	0.134669	0.2020	0.156	0.1557	1.8681	0.0463	0.5552
338.6	0.134755	0.2021	0.156	0.1557	1.8681	0.0465	0.5568
338.8	0.134842	0.2023	0.156	0.1557	1.8681	0.0466	0.5583
339	0.134929	0.2024	0.156	0.1557	1.8681	0.0467	0.5599
339.2	0.135015	0.2025	0.156	0.1557	1.8681	0.0469	0.5614
339.4	0.135102	0.2027	0.156	0.1557	1.8681	0.0470	0.5630
339.6	0.135189	0.2028	0.156	0.1557	1.8681	0.0471	0.5646
339.8	0.135276	0.2029	0.156	0.1557	1.8681	0.0472	0.5661
340	0.135362	0.2030	0.156	0.1557	1.8681	0.0474	0.5677
340.2	0.135449	0.2032	0.156	0.1557	1.8681	0.0475	0.5692
340.4	0.135536	0.2033	0.156	0.1557	1.8681	0.0476	0.5708
340.6	0.135623	0.2034	0.156	0.1557	1.8681	0.0478	0.5724
340.8	0.13571	0.2036	0.156	0.1557	1.8681	0.0479	0.5739
341	0.135796	0.2037	0.156	0.1557	1.8681	0.0480	0.5755
341.2	0.135883	0.2038	0.156	0.1557	1.8681	0.0482	0.5771
341.4	0.13597	0.2040	0.156	0.1557	1.8681	0.0483	0.5786
341.6	0.136057	0.2041	0.156	0.1557	1.8681	0.0484	0.5802
341.8	0.136144	0.2042	0.156	0.1557	1.8681	0.0485	0.5817
342	0.136231	0.2043	0.156	0.1557	1.8681	0.0487	0.5833
342.2	0.136317	0.2045	0.156	0.1557	1.8681	0.0488	0.5849
342.4	0.136404	0.2046	0.156	0.1557	1.8681	0.0489	0.5864
342.6	0.136491	0.2047	0.156	0.1557	1.8681	0.0491	0.5880
342.8	0.136578	0.2049	0.156	0.1557	1.8681	0.0492	0.5896
343	0.136665	0.2050	0.156	0.1557	1.8681	0.0493	0.5911
343.2	0.136752	0.2051	0.156	0.1557	1.8681	0.0495	0.5927
343.4	0.136839	0.2053	0.156	0.1557	1.8681	0.0496	0.5943
343.6	0.136926	0.2054	0.156	0.1557	1.8681	0.0497	0.5958
343.8	0.137013	0.2055	0.156	0.1557	1.8681	0.0498	0.5974
344	0.1371	0.2056	0.156	0.1557	1.8681	0.0500	0.5990
344.2	0.137187	0.2058	0.156	0.1557	1.8681	0.0501	0.6005
344.4	0.137274	0.2059	0.156	0.1557	1.8681	0.0502	0.6021
344.6	0.137361	0.2060	0.156	0.1557	1.8681	0.0504	0.6037
344.8	0.137448	0.2062	0.156	0.1557	1.8681	0.0505	0.6052
345	0.137535	0.2063	0.156	0.1557	1.8681	0.0506	0.6068
345.2	0.137622	0.2064	0.156	0.1557	1.8681	0.0508	0.6084
345.4	0.137709	0.2066	0.156	0.1557	1.8681	0.0509	0.6099
345.6	0.137796	0.2067	0.156	0.1557	1.8681	0.0510	0.6115
345.8	0.137883	0.2068	0.156	0.1557	1.8681	0.0512	0.6131
346	0.13797	0.2070	0.156	0.1557	1.8681	0.0513	0.6146
346.2	0.138057	0.2071	0.156	0.1557	1.8681	0.0514	0.6162

346.4	0.138144	0.2072	0.156	0.1557	1.8681	0.0515	0.6178
346.6	0.138231	0.2073	0.156	0.1557	1.8681	0.0517	0.6193
346.8	0.138318	0.2075	0.156	0.1557	1.8681	0.0518	0.6209
347	0.138405	0.2076	0.156	0.1557	1.8681	0.0519	0.6225
347.2	0.138492	0.2077	0.156	0.1557	1.8681	0.0521	0.6240
347.4	0.13858	0.2079	0.156	0.1557	1.8681	0.0522	0.6256
347.6	0.138667	0.2080	0.156	0.1557	1.8681	0.0523	0.6272
347.8	0.138754	0.2081	0.156	0.1557	1.8681	0.0525	0.6287
348	0.138841	0.2083	0.156	0.1557	1.8681	0.0526	0.6303
348.2	0.138928	0.2084	0.156	0.1557	1.8681	0.0527	0.6319
348.4	0.139015	0.2085	0.156	0.1557	1.8681	0.0529	0.6334
348.6	0.139103	0.2087	0.156	0.1557	1.8681	0.0530	0.6350
348.8	0.13919	0.2088	0.156	0.1557	1.8681	0.0531	0.6366
349	0.139277	0.2089	0.156	0.1557	1.8681	0.0532	0.6381
349.2	0.139364	0.2090	0.156	0.1557	1.8681	0.0534	0.6397
349.4	0.139451	0.2092	0.156	0.1557	1.8681	0.0535	0.6413
349.6	0.139539	0.2093	0.156	0.1557	1.8681	0.0536	0.6429
349.8	0.139626	0.2094	0.156	0.1557	1.8681	0.0538	0.6444
350	0.139713	0.2096	0.156	0.1557	1.8681	0.0539	0.6460
350.2	0.139801	0.2097	0.156	0.1557	1.8681	0.0540	0.6476
350.4	0.139888	0.2098	0.156	0.1557	1.8681	0.0542	0.6491
350.6	0.139975	0.2100	0.156	0.1557	1.8681	0.0543	0.6507
350.8	0.140062	0.2101	0.156	0.1557	1.8681	0.0544	0.6523
351	0.14015	0.2102	0.156	0.1557	1.8681	0.0546	0.6539
351.2	0.140237	0.2104	0.156	0.1557	1.8681	0.0547	0.6554
351.4	0.140324	0.2105	0.156	0.1557	1.8681	0.0548	0.6570
351.6	0.140412	0.2106	0.156	0.1557	1.8681	0.0549	0.6586
351.8	0.140499	0.2107	0.156	0.1557	1.8681	0.0551	0.6601
352	0.140586	0.2109	0.156	0.1557	1.8681	0.0552	0.6617
352.2	0.140674	0.2110	0.156	0.1557	1.8681	0.0553	0.6633
352.4	0.140761	0.2111	0.156	0.1557	1.8681	0.0555	0.6649
352.6	0.140849	0.2113	0.156	0.1557	1.8681	0.0556	0.6664
352.8	0.140936	0.2114	0.156	0.1557	1.8681	0.0557	0.6680
353	0.141023	0.2115	0.156	0.1557	1.8681	0.0559	0.6696
353.2	0.141111	0.2117	0.156	0.1557	1.8681	0.0560	0.6712
353.4	0.141198	0.2118	0.156	0.1557	1.8681	0.0561	0.6727
353.6	0.141286	0.2119	0.156	0.1557	1.8681	0.0563	0.6743
353.8	0.141373	0.2121	0.156	0.1557	1.8681	0.0564	0.6759
354	0.141461	0.2122	0.156	0.1557	1.8681	0.0565	0.6774
354.2	0.141548	0.2123	0.156	0.1557	1.8681	0.0567	0.6790
354.4	0.141636	0.2125	0.156	0.1557	1.8681	0.0568	0.6806
354.6	0.141723	0.2126	0.156	0.1557	1.8681	0.0569	0.6822
354.8	0.141811	0.2127	0.156	0.1557	1.8681	0.0570	0.6837
355	0.141898	0.2128	0.156	0.1557	1.8681	0.0572	0.6853
355.2	0.141986	0.2130	0.156	0.1557	1.8681	0.0573	0.6869
355.4	0.142073	0.2131	0.156	0.1557	1.8681	0.0574	0.6885
355.6	0.142161	0.2132	0.156	0.1557	1.8681	0.0576	0.6901

355.8	0.142248	0.2134	0.156	0.1557	1.8681	0.0577	0.6916
356	0.142336	0.2135	0.156	0.1557	1.8681	0.0578	0.6932
356.2	0.142424	0.2136	0.156	0.1557	1.8681	0.0580	0.6948
356.4	0.142511	0.2138	0.156	0.1557	1.8681	0.0581	0.6964
356.6	0.142599	0.2139	0.156	0.1557	1.8681	0.0582	0.6979
356.8	0.142686	0.2140	0.156	0.1557	1.8681	0.0584	0.6995
357	0.142774	0.2142	0.156	0.1557	1.8681	0.0585	0.7011
357.2	0.142862	0.2143	0.156	0.1557	1.8681	0.0586	0.7027
357.4	0.142949	0.2144	0.156	0.1557	1.8681	0.0588	0.7042
357.6	0.143037	0.2146	0.156	0.1557	1.8681	0.0589	0.7058
357.8	0.143125	0.2147	0.156	0.1557	1.8681	0.0590	0.7074
358	0.143212	0.2148	0.156	0.1557	1.8681	0.0591	0.7090
358.2	0.1433	0.2149	0.156	0.1557	1.8681	0.0593	0.7106
358.4	0.143388	0.2151	0.156	0.1557	1.8681	0.0594	0.7121
358.6	0.143475	0.2152	0.156	0.1557	1.8681	0.0595	0.7137
358.8	0.143563	0.2153	0.156	0.1557	1.8681	0.0597	0.7153
359	0.143651	0.2155	0.156	0.1557	1.8681	0.0598	0.7169
359.2	0.143739	0.2156	0.156	0.1557	1.8681	0.0599	0.7184
359.4	0.143826	0.2157	0.156	0.1557	1.8681	0.0601	0.7200
359.6	0.143914	0.2159	0.156	0.1557	1.8681	0.0602	0.7216
359.8	0.144002	0.2160	0.156	0.1557	1.8681	0.0603	0.7232
360	0.14409	0.2161	0.156	0.1557	1.8681	0.0605	0.7248
360.2	0.144177	0.2163	0.156	0.1557	1.8681	0.0606	0.7263
360.4	0.144265	0.2164	0.156	0.1557	1.8681	0.0607	0.7279
360.6	0.144353	0.2165	0.156	0.1557	1.8681	0.0609	0.7295
360.8	0.144441	0.2167	0.156	0.1557	1.8681	0.0610	0.7311
361	0.144529	0.2168	0.156	0.1557	1.8681	0.0611	0.7327
361.2	0.144617	0.2169	0.156	0.1557	1.8681	0.0613	0.7343
361.4	0.144704	0.2171	0.156	0.1557	1.8681	0.0614	0.7358
361.6	0.144792	0.2172	0.156	0.1557	1.8681	0.0615	0.7374
361.8	0.14488	0.2173	0.156	0.1557	1.8681	0.0616	0.7390
362	0.144968	0.2175	0.156	0.1557	1.8681	0.0618	0.7406
362.2	0.145056	0.2176	0.156	0.1557	1.8681	0.0619	0.7422
362.4	0.145144	0.2177	0.156	0.1557	1.8681	0.0620	0.7437
362.6	0.145232	0.2178	0.156	0.1557	1.8681	0.0622	0.7453
362.8	0.14532	0.2180	0.156	0.1557	1.8681	0.0623	0.7469
363	0.145408	0.2181	0.156	0.1557	1.8681	0.0624	0.7485
363.2	0.145496	0.2182	0.156	0.1557	1.8681	0.0626	0.7501
363.4	0.145583	0.2184	0.156	0.1557	1.8681	0.0627	0.7517
363.6	0.145671	0.2185	0.156	0.1557	1.8681	0.0628	0.7532
363.8	0.145759	0.2186	0.156	0.1557	1.8681	0.0630	0.7548
364	0.145847	0.2188	0.156	0.1557	1.8681	0.0631	0.7564
364.2	0.145935	0.2189	0.156	0.1557	1.8681	0.0632	0.7580
364.4	0.146023	0.2190	0.156	0.1557	1.8681	0.0634	0.7596
364.6	0.146111	0.2192	0.156	0.1557	1.8681	0.0635	0.7612
364.8	0.146199	0.2193	0.156	0.1557	1.8681	0.0636	0.7627
365	0.146288	0.2194	0.156	0.1557	1.8681	0.0638	0.7643

365.2	0.146376	0.2196	0.156	0.1557	1.8681	0.0639	0.7659
365.4	0.146464	0.2197	0.156	0.1557	1.8681	0.0640	0.7675
365.6	0.146552	0.2198	0.156	0.1557	1.8681	0.0642	0.7691
365.8	0.14664	0.2200	0.156	0.1557	1.8681	0.0643	0.7707
366	0.146728	0.2201	0.156	0.1557	1.8681	0.0644	0.7723
366.2	0.146816	0.2202	0.156	0.1557	1.8681	0.0646	0.7738
366.4	0.146904	0.2204	0.156	0.1557	1.8681	0.0647	0.7754
366.6	0.146992	0.2205	0.156	0.1557	1.8681	0.0648	0.7770
366.8	0.14708	0.2206	0.156	0.1557	1.8681	0.0649	0.7786
367	0.147169	0.2208	0.156	0.1557	1.8681	0.0651	0.7802
367.2	0.147257	0.2209	0.156	0.1557	1.8681	0.0652	0.7818
367.4	0.147345	0.2210	0.156	0.1557	1.8681	0.0653	0.7834
367.6	0.147433	0.2211	0.156	0.1557	1.8681	0.0655	0.7849
367.8	0.147521	0.2213	0.156	0.1557	1.8681	0.0656	0.7865
368	0.147609	0.2214	0.156	0.1557	1.8681	0.0657	0.7881
368.2	0.147698	0.2215	0.156	0.1557	1.8681	0.0659	0.7897
368.4	0.147786	0.2217	0.156	0.1557	1.8681	0.0660	0.7913
368.6	0.147874	0.2218	0.156	0.1557	1.8681	0.0661	0.7929
368.8	0.147962	0.2219	0.156	0.1557	1.8681	0.0663	0.7945
369	0.148051	0.2221	0.156	0.1557	1.8681	0.0664	0.7961
369.2	0.148139	0.2222	0.156	0.1557	1.8681	0.0665	0.7976
369.4	0.148227	0.2223	0.156	0.1557	1.8681	0.0667	0.7992
369.6	0.148315	0.2225	0.156	0.1557	1.8681	0.0668	0.8008
369.8	0.148404	0.2226	0.156	0.1557	1.8681	0.0669	0.8024
370	0.148492	0.2227	0.156	0.1557	1.8681	0.0671	0.8040
370.2	0.14858	0.2229	0.156	0.1557	1.8681	0.0672	0.8056
370.4	0.148669	0.2230	0.156	0.1557	1.8681	0.0673	0.8072
370.6	0.148757	0.2231	0.156	0.1557	1.8681	0.0675	0.8088
370.8	0.148845	0.2233	0.156	0.1557	1.8681	0.0676	0.8104
371	0.148934	0.2234	0.156	0.1557	1.8681	0.0677	0.8120
371.2	0.149022	0.2235	0.156	0.1557	1.8681	0.0679	0.8135
371.4	0.14911	0.2237	0.156	0.1557	1.8681	0.0680	0.8151
371.6	0.149199	0.2238	0.156	0.1557	1.8681	0.0681	0.8167
371.8	0.149287	0.2239	0.156	0.1557	1.8681	0.0683	0.8183
372	0.149376	0.2241	0.156	0.1557	1.8681	0.0684	0.8199
372.2	0.149464	0.2242	0.156	0.1557	1.8681	0.0685	0.8215
372.4	0.149553	0.2243	0.156	0.1557	1.8681	0.0687	0.8231
372.6	0.149641	0.2245	0.156	0.1557	1.8681	0.0688	0.8247
372.8	0.149729	0.2246	0.156	0.1557	1.8681	0.0689	0.8263
373	0.149818	0.2247	0.156	0.1557	1.8681	0.0691	0.8279
373.2	0.149906	0.2249	0.156	0.1557	1.8681	0.0692	0.8295
373.4	0.149995	0.2250	0.156	0.1557	1.8681	0.0693	0.8311
373.6	0.150083	0.2251	0.156	0.1557	1.8681	0.0695	0.8326
373.8	0.150172	0.2253	0.156	0.1557	1.8681	0.0696	0.8342
374	0.15026	0.2254	0.156	0.1557	1.8681	0.0697	0.8358
374.2	0.150349	0.2255	0.156	0.1557	1.8681	0.0699	0.8374
374.4	0.150437	0.2257	0.156	0.1557	1.8681	0.0700	0.8390

374.6	0.150526	0.2258	0.156	0.1557	1.8681	0.0701	0.8406
374.8	0.150615	0.2259	0.156	0.1557	1.8681	0.0703	0.8422
375	0.150703	0.2261	0.156	0.1557	1.8681	0.0704	0.8438
375.2	0.150792	0.2262	0.156	0.1557	1.8681	0.0705	0.8454
375.4	0.15088	0.2263	0.156	0.1557	1.8681	0.0706	0.8470
375.6	0.150969	0.2265	0.156	0.1557	1.8681	0.0708	0.8486
375.8	0.151058	0.2266	0.156	0.1557	1.8681	0.0709	0.8502
376	0.151146	0.2267	0.156	0.1557	1.8681	0.0710	0.8518
376.2	0.151235	0.2269	0.156	0.1557	1.8681	0.0712	0.8534
376.4	0.151323	0.2270	0.156	0.1557	1.8681	0.0713	0.8550
376.6	0.151412	0.2271	0.156	0.1557	1.8681	0.0714	0.8566
376.8	0.151501	0.2273	0.156	0.1557	1.8681	0.0716	0.8582
377	0.151589	0.2274	0.156	0.1557	1.8681	0.0717	0.8598
377.2	0.151678	0.2275	0.156	0.1557	1.8681	0.0718	0.8614
377.4	0.151767	0.2277	0.156	0.1557	1.8681	0.0720	0.8629
377.6	0.151856	0.2278	0.156	0.1557	1.8681	0.0721	0.8645
377.8	0.151944	0.2279	0.156	0.1557	1.8681	0.0722	0.8661
378	0.152033	0.2280	0.156	0.1557	1.8681	0.0724	0.8677
378.2	0.152122	0.2282	0.156	0.1557	1.8681	0.0725	0.8693
378.4	0.152211	0.2283	0.156	0.1557	1.8681	0.0726	0.8709
378.6	0.152299	0.2284	0.156	0.1557	1.8681	0.0728	0.8725
378.8	0.152388	0.2286	0.156	0.1557	1.8681	0.0729	0.8741
379	0.152477	0.2287	0.156	0.1557	1.8681	0.0730	0.8757
379.2	0.152566	0.2288	0.156	0.1557	1.8681	0.0732	0.8773
379.4	0.152654	0.2290	0.156	0.1557	1.8681	0.0733	0.8789
379.6	0.152743	0.2291	0.156	0.1557	1.8681	0.0734	0.8805
379.8	0.152832	0.2292	0.156	0.1557	1.8681	0.0736	0.8821
380	0.152921	0.2294	0.156	0.1557	1.8681	0.0737	0.8837
380.2	0.15301	0.2295	0.156	0.1557	1.8681	0.0738	0.8853
380.4	0.153099	0.2296	0.156	0.1557	1.8681	0.0740	0.8869
380.6	0.153188	0.2298	0.156	0.1557	1.8681	0.0741	0.8885
380.8	0.153276	0.2299	0.156	0.1557	1.8681	0.0742	0.8901
381	0.153365	0.2300	0.156	0.1557	1.8681	0.0744	0.8917
381.2	0.153454	0.2302	0.156	0.1557	1.8681	0.0745	0.8933
381.4	0.153543	0.2303	0.156	0.1557	1.8681	0.0746	0.8949
381.6	0.153632	0.2304	0.156	0.1557	1.8681	0.0748	0.8965
381.8	0.153721	0.2306	0.156	0.1557	1.8681	0.0749	0.8981
382	0.15381	0.2307	0.156	0.1557	1.8681	0.0750	0.8997
382.2	0.153899	0.2308	0.156	0.1557	1.8681	0.0752	0.9013
382.4	0.153988	0.2310	0.156	0.1557	1.8681	0.0753	0.9029
382.6	0.154077	0.2311	0.156	0.1557	1.8681	0.0754	0.9045
382.8	0.154166	0.2312	0.156	0.1557	1.8681	0.0756	0.9061
383	0.154255	0.2314	0.156	0.1557	1.8681	0.0757	0.9077
383.2	0.154344	0.2315	0.156	0.1557	1.8681	0.0758	0.9093
383.4	0.154433	0.2316	0.156	0.1557	1.8681	0.0760	0.9109
383.6	0.154522	0.2318	0.156	0.1557	1.8681	0.0761	0.9125
383.8	0.154611	0.2319	0.156	0.1557	1.8681	0.0762	0.9141

384	0.1547	0.2321	0.156	0.1557	1.8681	0.0764	0.9157
384.2	0.154789	0.2322	0.156	0.1557	1.8681	0.0765	0.9173
384.4	0.154878	0.2323	0.156	0.1557	1.8681	0.0766	0.9190
384.6	0.154967	0.2325	0.156	0.1557	1.8681	0.0768	0.9206
384.8	0.155056	0.2326	0.156	0.1557	1.8681	0.0769	0.9222
385	0.155146	0.2327	0.156	0.1557	1.8681	0.0770	0.9238
385.2	0.155235	0.2329	0.156	0.1557	1.8681	0.0772	0.9254
385.4	0.155324	0.2330	0.156	0.1557	1.8681	0.0773	0.9270
385.6	0.155413	0.2331	0.156	0.1557	1.8681	0.0774	0.9286
385.8	0.155502	0.2333	0.156	0.1557	1.8681	0.0776	0.9302
386	0.155591	0.2334	0.156	0.1557	1.8681	0.0777	0.9318
386.2	0.15568	0.2335	0.156	0.1557	1.8681	0.0778	0.9334
386.4	0.15577	0.2337	0.156	0.1557	1.8681	0.0780	0.9350
386.6	0.155859	0.2338	0.156	0.1557	1.8681	0.0781	0.9366
386.8	0.155948	0.2339	0.156	0.1557	1.8681	0.0783	0.9382
387	0.156037	0.2341	0.156	0.1557	1.8681	0.0784	0.9398
387.2	0.156127	0.2342	0.156	0.1557	1.8681	0.0785	0.9414
387.4	0.156216	0.2343	0.156	0.1557	1.8681	0.0787	0.9430
387.6	0.156305	0.2345	0.156	0.1557	1.8681	0.0788	0.9446
387.8	0.156394	0.2346	0.156	0.1557	1.8681	0.0789	0.9462
388	0.156484	0.2347	0.156	0.1557	1.8681	0.0791	0.9478
388.2	0.156573	0.2349	0.156	0.1557	1.8681	0.0792	0.9495
388.4	0.156662	0.2350	0.156	0.1557	1.8681	0.0793	0.9511
388.6	0.156751	0.2351	0.156	0.1557	1.8681	0.0795	0.9527
388.8	0.156841	0.2353	0.156	0.1557	1.8681	0.0796	0.9543
389	0.15693	0.2354	0.156	0.1557	1.8681	0.0797	0.9559
389.2	0.157019	0.2355	0.156	0.1557	1.8681	0.0799	0.9575
389.4	0.157109	0.2357	0.156	0.1557	1.8681	0.0800	0.9591
389.6	0.157198	0.2358	0.156	0.1557	1.8681	0.0801	0.9607
389.8	0.157288	0.2359	0.156	0.1557	1.8681	0.0803	0.9623
390	0.157377	0.2361	0.156	0.1557	1.8681	0.0804	0.9639
390.2	0.157466	0.2362	0.156	0.1557	1.8681	0.0805	0.9655
390.4	0.157556	0.2363	0.156	0.1557	1.8681	0.0807	0.9671
390.6	0.157645	0.2365	0.156	0.1557	1.8681	0.0808	0.9688
390.8	0.157735	0.2366	0.156	0.1557	1.8681	0.0809	0.9704
391	0.157824	0.2367	0.156	0.1557	1.8681	0.0811	0.9720
391.2	0.157913	0.2369	0.156	0.1557	1.8681	0.0812	0.9736
391.4	0.158003	0.2370	0.156	0.1557	1.8681	0.0813	0.9752
391.6	0.158092	0.2371	0.156	0.1557	1.8681	0.0815	0.9768
391.8	0.158182	0.2373	0.156	0.1557	1.8681	0.0816	0.9784
392	0.158271	0.2374	0.156	0.1557	1.8681	0.0817	0.9800
392.2	0.158361	0.2375	0.156	0.1557	1.8681	0.0819	0.9816
392.4	0.15845	0.2377	0.156	0.1557	1.8681	0.0820	0.9832
392.6	0.15854	0.2378	0.156	0.1557	1.8681	0.0821	0.9849
392.8	0.15863	0.2379	0.156	0.1557	1.8681	0.0823	0.9865
393	0.158719	0.2381	0.156	0.1557	1.8681	0.0824	0.9881
393.2	0.158809	0.2382	0.156	0.1557	1.8681	0.0825	0.9897

393.4	0.158898	0.2383	0.156	0.1557	1.8681	0.0827	0.9913
393.6	0.158988	0.2385	0.156	0.1557	1.8681	0.0828	0.9929
393.8	0.159077	0.2386	0.156	0.1557	1.8681	0.0829	0.9945
394	0.159167	0.2388	0.156	0.1557	1.8681	0.0831	0.9961
394.2	0.159257	0.2389	0.156	0.1557	1.8681	0.0832	0.9978
394.4	0.159346	0.2390	0.156	0.1557	1.8681	0.0833	0.9994
394.6	0.159436	0.2392	0.156	0.1557	1.8681	0.0835	1.0010
394.8	0.159526	0.2393	0.156	0.1557	1.8681	0.0836	1.0026
395	0.159615	0.2394	0.156	0.1557	1.8681	0.0838	1.0042
395.2	0.159705	0.2396	0.156	0.1557	1.8681	0.0839	1.0058
395.4	0.159795	0.2397	0.156	0.1557	1.8681	0.0840	1.0074
395.6	0.159884	0.2398	0.156	0.1557	1.8681	0.0842	1.0091
395.8	0.159974	0.2400	0.156	0.1557	1.8681	0.0843	1.0107
396	0.160064	0.2401	0.156	0.1557	1.8681	0.0844	1.0123
396.2	0.160153	0.2402	0.156	0.1557	1.8681	0.0846	1.0139
396.4	0.160243	0.2404	0.156	0.1557	1.8681	0.0847	1.0155
396.6	0.160333	0.2405	0.156	0.1557	1.8681	0.0848	1.0171
396.8	0.160423	0.2406	0.156	0.1557	1.8681	0.0850	1.0187
397	0.160513	0.2408	0.156	0.1557	1.8681	0.0851	1.0204
397.2	0.160602	0.2409	0.156	0.1557	1.8681	0.0852	1.0220
397.4	0.160692	0.2410	0.156	0.1557	1.8681	0.0854	1.0236
397.6	0.160782	0.2412	0.156	0.1557	1.8681	0.0855	1.0252
397.8	0.160872	0.2413	0.156	0.1557	1.8681	0.0856	1.0268
398	0.160962	0.2414	0.156	0.1557	1.8681	0.0858	1.0284
398.2	0.161051	0.2416	0.156	0.1557	1.8681	0.0859	1.0301
398.4	0.161141	0.2417	0.156	0.1557	1.8681	0.0860	1.0317
398.6	0.161231	0.2418	0.156	0.1557	1.8681	0.0862	1.0333
398.8	0.161321	0.2420	0.156	0.1557	1.8681	0.0863	1.0349
399	0.161411	0.2421	0.156	0.1557	1.8681	0.0864	1.0365
399.2	0.161501	0.2423	0.156	0.1557	1.8681	0.0866	1.0381
399.4	0.161591	0.2424	0.156	0.1557	1.8681	0.0867	1.0398
399.6	0.161681	0.2425	0.156	0.1557	1.8681	0.0868	1.0414
399.8	0.161771	0.2427	0.156	0.1557	1.8681	0.0870	1.0430
400	0.16186	0.2428	0.156	0.1557	1.8681	0.0871	1.0446
400.2	0.16195	0.2429	0.156	0.1557	1.8681	0.0873	1.0462
400.4	0.16204	0.2431	0.156	0.1557	1.8681	0.0874	1.0479
400.6	0.16213	0.2432	0.156	0.1557	1.8681	0.0875	1.0495
400.8	0.16222	0.2433	0.156	0.1557	1.8681	0.0877	1.0511
401	0.16231	0.2435	0.156	0.1557	1.8681	0.0878	1.0527
401.2	0.1624	0.2436	0.156	0.1557	1.8681	0.0879	1.0543
401.4	0.16249	0.2437	0.156	0.1557	1.8681	0.0881	1.0560
401.6	0.16258	0.2439	0.156	0.1557	1.8681	0.0882	1.0576
401.8	0.162671	0.2440	0.156	0.1557	1.8681	0.0883	1.0592
402	0.162761	0.2441	0.156	0.1557	1.8681	0.0885	1.0608
402.2	0.162851	0.2443	0.156	0.1557	1.8681	0.0886	1.0624
402.4	0.162941	0.2444	0.156	0.1557	1.8681	0.0887	1.0641
402.6	0.163031	0.2445	0.156	0.1557	1.8681	0.0889	1.0657

402.8	0.163121	0.2447	0.156	0.1557	1.8681	0.0890	1.0673
403	0.163211	0.2448	0.156	0.1557	1.8681	0.0891	1.0689
403.2	0.163301	0.2450	0.156	0.1557	1.8681	0.0893	1.0706
403.4	0.163391	0.2451	0.156	0.1557	1.8681	0.0894	1.0722
403.6	0.163481	0.2452	0.156	0.1557	1.8681	0.0896	1.0738
403.8	0.163572	0.2454	0.156	0.1557	1.8681	0.0897	1.0754
404	0.163662	0.2455	0.156	0.1557	1.8681	0.0898	1.0770
404.2	0.163752	0.2456	0.156	0.1557	1.8681	0.0900	1.0787
404.4	0.163842	0.2458	0.156	0.1557	1.8681	0.0901	1.0803
404.6	0.163932	0.2459	0.156	0.1557	1.8681	0.0902	1.0819
404.8	0.164023	0.2460	0.156	0.1557	1.8681	0.0904	1.0835
405	0.164113	0.2462	0.156	0.1557	1.8681	0.0905	1.0852
405.2	0.164203	0.2463	0.156	0.1557	1.8681	0.0906	1.0868
405.4	0.164293	0.2464	0.156	0.1557	1.8681	0.0908	1.0884
405.6	0.164384	0.2466	0.156	0.1557	1.8681	0.0909	1.0900
405.8	0.164474	0.2467	0.156	0.1557	1.8681	0.0910	1.0917
406	0.164564	0.2468	0.156	0.1557	1.8681	0.0912	1.0933
406.2	0.164654	0.2470	0.156	0.1557	1.8681	0.0913	1.0949
406.4	0.164745	0.2471	0.156	0.1557	1.8681	0.0914	1.0965
406.6	0.164835	0.2473	0.156	0.1557	1.8681	0.0916	1.0982
406.8	0.164925	0.2474	0.156	0.1557	1.8681	0.0917	1.0998
407	0.165016	0.2475	0.156	0.1557	1.8681	0.0919	1.1014
407.2	0.165106	0.2477	0.156	0.1557	1.8681	0.0920	1.1030
407.4	0.165196	0.2478	0.156	0.1557	1.8681	0.0921	1.1047
407.6	0.165287	0.2479	0.156	0.1557	1.8681	0.0923	1.1063
407.8	0.165377	0.2481	0.156	0.1557	1.8681	0.0924	1.1079
408	0.165468	0.2482	0.156	0.1557	1.8681	0.0925	1.1095
408.2	0.165558	0.2483	0.156	0.1557	1.8681	0.0927	1.1112
408.4	0.165648	0.2485	0.156	0.1557	1.8681	0.0928	1.1128
408.6	0.165739	0.2486	0.156	0.1557	1.8681	0.0929	1.1144
408.8	0.165829	0.2487	0.156	0.1557	1.8681	0.0931	1.1161
409	0.16592	0.2489	0.156	0.1557	1.8681	0.0932	1.1177
409.2	0.16601	0.2490	0.156	0.1557	1.8681	0.0933	1.1193
409.4	0.166101	0.2492	0.156	0.1557	1.8681	0.0935	1.1209
409.6	0.166191	0.2493	0.156	0.1557	1.8681	0.0936	1.1226
409.8	0.166282	0.2494	0.156	0.1557	1.8681	0.0938	1.1242
410	0.166372	0.2496	0.156	0.1557	1.8681	0.0939	1.1258
410.2	0.166463	0.2497	0.156	0.1557	1.8681	0.0940	1.1275
410.4	0.166553	0.2498	0.156	0.1557	1.8681	0.0942	1.1291
410.6	0.166644	0.2500	0.156	0.1557	1.8681	0.0943	1.1307
410.8	0.166734	0.2501	0.156	0.1557	1.8681	0.0944	1.1323
411	0.166825	0.2502	0.156	0.1557	1.8681	0.0946	1.1340
411.2	0.166915	0.2504	0.156	0.1557	1.8681	0.0947	1.1356
411.4	0.167006	0.2505	0.156	0.1557	1.8681	0.0948	1.1372
411.6	0.167097	0.2506	0.156	0.1557	1.8681	0.0950	1.1389
411.8	0.167187	0.2508	0.156	0.1557	1.8681	0.0951	1.1405
412	0.167278	0.2509	0.156	0.1557	1.8681	0.0952	1.1421

412.2	0.167369	0.2511	0.156	0.1557	1.8681	0.0954	1.1438
412.4	0.167459	0.2512	0.156	0.1557	1.8681	0.0955	1.1454
412.6	0.16755	0.2513	0.156	0.1557	1.8681	0.0957	1.1470
412.8	0.167641	0.2515	0.156	0.1557	1.8681	0.0958	1.1487
413	0.167731	0.2516	0.156	0.1557	1.8681	0.0959	1.1503
413.2	0.167822	0.2517	0.156	0.1557	1.8681	0.0961	1.1519
413.4	0.167913	0.2519	0.156	0.1557	1.8681	0.0962	1.1536
413.6	0.168003	0.2520	0.156	0.1557	1.8681	0.0963	1.1552
413.8	0.168094	0.2521	0.156	0.1557	1.8681	0.0965	1.1568
414	0.168185	0.2523	0.156	0.1557	1.8681	0.0966	1.1585
414.2	0.168276	0.2524	0.156	0.1557	1.8681	0.0967	1.1601
414.4	0.168366	0.2525	0.156	0.1557	1.8681	0.0969	1.1617
414.6	0.168457	0.2527	0.156	0.1557	1.8681	0.0970	1.1634
414.8	0.168548	0.2528	0.156	0.1557	1.8681	0.0972	1.1650
415	0.168639	0.2530	0.156	0.1557	1.8681	0.0973	1.1666
415.2	0.16873	0.2531	0.156	0.1557	1.8681	0.0974	1.1683
415.4	0.16882	0.2532	0.156	0.1557	1.8681	0.0976	1.1699
415.6	0.168911	0.2534	0.156	0.1557	1.8681	0.0977	1.1715
415.8	0.169002	0.2535	0.156	0.1557	1.8681	0.0978	1.1732
416	0.169093	0.2536	0.156	0.1557	1.8681	0.0980	1.1748
416.2	0.169184	0.2538	0.156	0.1557	1.8681	0.0981	1.1764
416.4	0.169275	0.2539	0.156	0.1557	1.8681	0.0982	1.1781
416.6	0.169366	0.2540	0.156	0.1557	1.8681	0.0984	1.1797
416.8	0.169456	0.2542	0.156	0.1557	1.8681	0.0985	1.1813
417	0.169547	0.2543	0.156	0.1557	1.8681	0.0986	1.1830
417.2	0.169638	0.2545	0.156	0.1557	1.8681	0.0988	1.1846
417.4	0.169729	0.2546	0.156	0.1557	1.8681	0.0989	1.1863
417.6	0.16982	0.2547	0.156	0.1557	1.8681	0.0991	1.1879
417.8	0.169911	0.2549	0.156	0.1557	1.8681	0.0992	1.1895
418	0.170002	0.2550	0.156	0.1557	1.8681	0.0993	1.1912
418.2	0.170093	0.2551	0.156	0.1557	1.8681	0.0995	1.1928
418.4	0.170184	0.2553	0.156	0.1557	1.8681	0.0996	1.1944
418.6	0.170275	0.2554	0.156	0.1557	1.8681	0.0997	1.1961
418.8	0.170366	0.2555	0.156	0.1557	1.8681	0.0999	1.1977
419	0.170457	0.2557	0.156	0.1557	1.8681	0.1000	1.1994
419.2	0.170548	0.2558	0.156	0.1557	1.8681	0.1002	1.2010
419.4	0.170639	0.2560	0.156	0.1557	1.8681	0.1003	1.2026
419.6	0.17073	0.2561	0.156	0.1557	1.8681	0.1004	1.2043
419.8	0.170821	0.2562	0.156	0.1557	1.8681	0.1006	1.2059
420	0.170913	0.2564	0.156	0.1557	1.8681	0.1007	1.2075
420.2	0.171004	0.2565	0.156	0.1557	1.8681	0.1008	1.2092
420.4	0.171095	0.2566	0.156	0.1557	1.8681	0.1010	1.2108
420.6	0.171186	0.2568	0.156	0.1557	1.8681	0.1011	1.2125
420.8	0.171277	0.2569	0.156	0.1557	1.8681	0.1012	1.2141
421	0.171368	0.2571	0.156	0.1557	1.8681	0.1014	1.2158
421.2	0.171459	0.2572	0.156	0.1557	1.8681	0.1015	1.2174
421.4	0.17155	0.2573	0.156	0.1557	1.8681	0.1017	1.2190

421.6	0.171642	0.2575	0.156	0.1557	1.8681	0.1018	1.2207
421.8	0.171733	0.2576	0.156	0.1557	1.8681	0.1019	1.2223
422	0.171824	0.2577	0.156	0.1557	1.8681	0.1021	1.2240
422.2	0.171915	0.2579	0.156	0.1557	1.8681	0.1022	1.2256
422.4	0.172007	0.2580	0.156	0.1557	1.8681	0.1023	1.2272
422.6	0.172098	0.2581	0.156	0.1557	1.8681	0.1025	1.2289
422.8	0.172189	0.2583	0.156	0.1557	1.8681	0.1026	1.2305
423	0.17228	0.2584	0.156	0.1557	1.8681	0.1027	1.2322
423.2	0.172372	0.2586	0.156	0.1557	1.8681	0.1029	1.2338
423.4	0.172463	0.2587	0.156	0.1557	1.8681	0.1030	1.2355
423.6	0.172554	0.2588	0.156	0.1557	1.8681	0.1032	1.2371
423.8	0.172645	0.2590	0.156	0.1557	1.8681	0.1033	1.2387
424	0.172737	0.2591	0.156	0.1557	1.8681	0.1034	1.2404
424.2	0.172828	0.2592	0.156	0.1557	1.8681	0.1036	1.2420
424.4	0.172919	0.2594	0.156	0.1557	1.8681	0.1037	1.2437
424.6	0.173011	0.2595	0.156	0.1557	1.8681	0.1038	1.2453
424.8	0.173102	0.2597	0.156	0.1557	1.8681	0.1040	1.2470
425	0.173194	0.2598	0.156	0.1557	1.8681	0.1041	1.2486
425.2	0.173285	0.2599	0.156	0.1557	1.8681	0.1043	1.2503
425.4	0.173376	0.2601	0.156	0.1557	1.8681	0.1044	1.2519
425.6	0.173468	0.2602	0.156	0.1557	1.8681	0.1045	1.2535
425.8	0.173559	0.2603	0.156	0.1557	1.8681	0.1047	1.2552
426	0.173651	0.2605	0.156	0.1557	1.8681	0.1048	1.2568
426.2	0.173742	0.2606	0.156	0.1557	1.8681	0.1049	1.2585
426.4	0.173834	0.2608	0.156	0.1557	1.8681	0.1051	1.2601
426.6	0.173925	0.2609	0.156	0.1557	1.8681	0.1052	1.2618
426.8	0.174017	0.2610	0.156	0.1557	1.8681	0.1054	1.2634
427	0.174108	0.2612	0.156	0.1557	1.8681	0.1055	1.2651
427.2	0.1742	0.2613	0.156	0.1557	1.8681	0.1056	1.2667
427.4	0.174291	0.2614	0.156	0.1557	1.8681	0.1058	1.2684
427.6	0.174383	0.2616	0.156	0.1557	1.8681	0.1059	1.2700
427.8	0.174474	0.2617	0.156	0.1557	1.8681	0.1060	1.2717
428	0.174566	0.2618	0.156	0.1557	1.8681	0.1062	1.2733
428.2	0.174657	0.2620	0.156	0.1557	1.8681	0.1063	1.2750
428.4	0.174749	0.2621	0.156	0.1557	1.8681	0.1065	1.2766
428.6	0.174841	0.2623	0.156	0.1557	1.8681	0.1066	1.2783
428.8	0.174932	0.2624	0.156	0.1557	1.8681	0.1067	1.2799
429	0.175024	0.2625	0.156	0.1557	1.8681	0.1069	1.2815
429.2	0.175115	0.2627	0.156	0.1557	1.8681	0.1070	1.2832
429.4	0.175207	0.2628	0.156	0.1557	1.8681	0.1071	1.2848
429.6	0.175299	0.2629	0.156	0.1557	1.8681	0.1073	1.2865
429.8	0.17539	0.2631	0.156	0.1557	1.8681	0.1074	1.2881
430	0.175482	0.2632	0.156	0.1557	1.8681	0.1076	1.2898
430.2	0.175574	0.2634	0.156	0.1557	1.8681	0.1077	1.2914
430.4	0.175666	0.2635	0.156	0.1557	1.8681	0.1078	1.2931
430.6	0.175757	0.2636	0.156	0.1557	1.8681	0.1080	1.2947
430.8	0.175849	0.2638	0.156	0.1557	1.8681	0.1081	1.2964

431	0.175941	0.2639	0.156	0.1557	1.8681	0.1082	1.2981
431.2	0.176032	0.2640	0.156	0.1557	1.8681	0.1084	1.2997
431.4	0.176124	0.2642	0.156	0.1557	1.8681	0.1085	1.3014
431.6	0.176216	0.2643	0.156	0.1557	1.8681	0.1087	1.3030
431.8	0.176308	0.2645	0.156	0.1557	1.8681	0.1088	1.3047
432	0.1764	0.2646	0.156	0.1557	1.8681	0.1089	1.3063
432.2	0.176491	0.2647	0.156	0.1557	1.8681	0.1091	1.3080
432.4	0.176583	0.2649	0.156	0.1557	1.8681	0.1092	1.3096
432.6	0.176675	0.2650	0.156	0.1557	1.8681	0.1093	1.3113
432.8	0.176767	0.2652	0.156	0.1557	1.8681	0.1095	1.3129
433	0.176859	0.2653	0.156	0.1557	1.8681	0.1096	1.3146
433.2	0.176951	0.2654	0.156	0.1557	1.8681	0.1098	1.3162
433.4	0.177043	0.2656	0.156	0.1557	1.8681	0.1099	1.3179
433.6	0.177134	0.2657	0.156	0.1557	1.8681	0.1100	1.3195
433.8	0.177226	0.2658	0.156	0.1557	1.8681	0.1102	1.3212
434	0.177318	0.2660	0.156	0.1557	1.8681	0.1103	1.3228
434.2	0.17741	0.2661	0.156	0.1557	1.8681	0.1104	1.3245
434.4	0.177502	0.2663	0.156	0.1557	1.8681	0.1106	1.3262
434.6	0.177594	0.2664	0.156	0.1557	1.8681	0.1107	1.3278
434.8	0.177686	0.2665	0.156	0.1557	1.8681	0.1109	1.3295
435	0.177778	0.2667	0.156	0.1557	1.8681	0.1110	1.3311
435.2	0.17787	0.2668	0.156	0.1557	1.8681	0.1111	1.3328
435.4	0.177962	0.2669	0.156	0.1557	1.8681	0.1113	1.3344
435.6	0.178054	0.2671	0.156	0.1557	1.8681	0.1114	1.3361
435.8	0.178146	0.2672	0.156	0.1557	1.8681	0.1115	1.3377
436	0.178238	0.2674	0.156	0.1557	1.8681	0.1117	1.3394
436.2	0.17833	0.2675	0.156	0.1557	1.8681	0.1118	1.3411
436.4	0.178422	0.2676	0.156	0.1557	1.8681	0.1120	1.3427
436.6	0.178514	0.2678	0.156	0.1557	1.8681	0.1121	1.3444
436.8	0.178606	0.2679	0.156	0.1557	1.8681	0.1122	1.3460
437	0.178699	0.2680	0.156	0.1557	1.8681	0.1124	1.3477
437.2	0.178791	0.2682	0.156	0.1557	1.8681	0.1125	1.3493
437.4	0.178883	0.2683	0.156	0.1557	1.8681	0.1127	1.3510
437.6	0.178975	0.2685	0.156	0.1557	1.8681	0.1128	1.3527
437.8	0.179067	0.2686	0.156	0.1557	1.8681	0.1129	1.3543
438	0.179159	0.2687	0.156	0.1557	1.8681	0.1131	1.3560
438.2	0.179251	0.2689	0.156	0.1557	1.8681	0.1132	1.3576
438.4	0.179344	0.2690	0.156	0.1557	1.8681	0.1133	1.3593
438.6	0.179436	0.2692	0.156	0.1557	1.8681	0.1135	1.3610
438.8	0.179528	0.2693	0.156	0.1557	1.8681	0.1136	1.3626
439	0.17962	0.2694	0.156	0.1557	1.8681	0.1138	1.3643
439.2	0.179712	0.2696	0.156	0.1557	1.8681	0.1139	1.3659
439.4	0.179805	0.2697	0.156	0.1557	1.8681	0.1140	1.3676
439.6	0.179897	0.2698	0.156	0.1557	1.8681	0.1142	1.3693
439.8	0.179989	0.2700	0.156	0.1557	1.8681	0.1143	1.3709
440	0.180082	0.2701	0.156	0.1557	1.8681	0.1145	1.3726
440.2	0.180174	0.2703	0.156	0.1557	1.8681	0.1146	1.3742

440.4	0.180266	0.2704	0.156	0.1557	1.8681	0.1147	1.3759
440.6	0.180358	0.2705	0.156	0.1557	1.8681	0.1149	1.3776
440.8	0.180451	0.2707	0.156	0.1557	1.8681	0.1150	1.3792
441	0.180543	0.2708	0.156	0.1557	1.8681	0.1151	1.3809
441.2	0.180636	0.2710	0.156	0.1557	1.8681	0.1153	1.3826
441.4	0.180728	0.2711	0.156	0.1557	1.8681	0.1154	1.3842
441.6	0.18082	0.2712	0.156	0.1557	1.8681	0.1156	1.3859
441.8	0.180913	0.2714	0.156	0.1557	1.8681	0.1157	1.3875
442	0.181005	0.2715	0.156	0.1557	1.8681	0.1158	1.3892
442.2	0.181097	0.2716	0.156	0.1557	1.8681	0.1160	1.3909
442.4	0.18119	0.2718	0.156	0.1557	1.8681	0.1161	1.3925
442.6	0.181282	0.2719	0.156	0.1557	1.8681	0.1163	1.3942
442.8	0.181375	0.2721	0.156	0.1557	1.8681	0.1164	1.3959
443	0.181467	0.2722	0.156	0.1557	1.8681	0.1165	1.3975
443.2	0.18156	0.2723	0.156	0.1557	1.8681	0.1167	1.3992
443.4	0.181652	0.2725	0.156	0.1557	1.8681	0.1168	1.4009
443.6	0.181745	0.2726	0.156	0.1557	1.8681	0.1169	1.4025
443.8	0.181837	0.2728	0.156	0.1557	1.8681	0.1171	1.4042
444	0.18193	0.2729	0.156	0.1557	1.8681	0.1172	1.4058
444.2	0.182022	0.2730	0.156	0.1557	1.8681	0.1174	1.4075
444.4	0.182115	0.2732	0.156	0.1557	1.8681	0.1175	1.4092
444.6	0.182207	0.2733	0.156	0.1557	1.8681	0.1176	1.4108
444.8	0.1823	0.2735	0.156	0.1557	1.8681	0.1178	1.4125
445	0.182393	0.2736	0.156	0.1557	1.8681	0.1179	1.4142
445.2	0.182485	0.2737	0.156	0.1557	1.8681	0.1181	1.4158
445.4	0.182578	0.2739	0.156	0.1557	1.8681	0.1182	1.4175
445.6	0.18267	0.2740	0.156	0.1557	1.8681	0.1183	1.4192
445.8	0.182763	0.2741	0.156	0.1557	1.8681	0.1185	1.4208
446	0.182856	0.2743	0.156	0.1557	1.8681	0.1186	1.4225
446.2	0.182948	0.2744	0.156	0.1557	1.8681	0.1188	1.4242
446.4	0.183041	0.2746	0.156	0.1557	1.8681	0.1189	1.4259
446.6	0.183134	0.2747	0.156	0.1557	1.8681	0.1190	1.4275
446.8	0.183227	0.2748	0.156	0.1557	1.8681	0.1192	1.4292
447	0.183319	0.2750	0.156	0.1557	1.8681	0.1193	1.4309
447.2	0.183412	0.2751	0.156	0.1557	1.8681	0.1194	1.4325
447.4	0.183505	0.2753	0.156	0.1557	1.8681	0.1196	1.4342
447.6	0.183597	0.2754	0.156	0.1557	1.8681	0.1197	1.4359
447.8	0.18369	0.2755	0.156	0.1557	1.8681	0.1199	1.4375
448	0.183783	0.2757	0.156	0.1557	1.8681	0.1200	1.4392
448.2	0.183876	0.2758	0.156	0.1557	1.8681	0.1201	1.4409
448.4	0.183969	0.2760	0.156	0.1557	1.8681	0.1203	1.4425
448.6	0.184061	0.2761	0.156	0.1557	1.8681	0.1204	1.4442
448.8	0.184154	0.2762	0.156	0.1557	1.8681	0.1206	1.4459
449	0.184247	0.2764	0.156	0.1557	1.8681	0.1207	1.4476
449.2	0.18434	0.2765	0.156	0.1557	1.8681	0.1208	1.4492
449.4	0.184433	0.2766	0.156	0.1557	1.8681	0.1210	1.4509
449.6	0.184526	0.2768	0.156	0.1557	1.8681	0.1211	1.4526

449.8	0.184619	0.2769	0.156	0.1557	1.8681	0.1213	1.4542
450	0.184711	0.2771	0.156	0.1557	1.8681	0.1214	1.4559
450.2	0.184804	0.2772	0.156	0.1557	1.8681	0.1215	1.4576
450.4	0.184897	0.2773	0.156	0.1557	1.8681	0.1217	1.4593
450.6	0.18499	0.2775	0.156	0.1557	1.8681	0.1218	1.4609
450.8	0.185083	0.2776	0.156	0.1557	1.8681	0.1220	1.4626
451	0.185176	0.2778	0.156	0.1557	1.8681	0.1221	1.4643
451.2	0.185269	0.2779	0.156	0.1557	1.8681	0.1222	1.4660
451.4	0.185362	0.2780	0.156	0.1557	1.8681	0.1224	1.4676
451.6	0.185455	0.2782	0.156	0.1557	1.8681	0.1225	1.4693
451.8	0.185548	0.2783	0.156	0.1557	1.8681	0.1227	1.4710
452	0.185641	0.2785	0.156	0.1557	1.8681	0.1228	1.4726
452.2	0.185734	0.2786	0.156	0.1557	1.8681	0.1229	1.4743
452.4	0.185827	0.2787	0.156	0.1557	1.8681	0.1231	1.4760
452.6	0.18592	0.2789	0.156	0.1557	1.8681	0.1232	1.4777
452.8	0.186013	0.2790	0.156	0.1557	1.8681	0.1233	1.4793
453	0.186106	0.2792	0.156	0.1557	1.8681	0.1235	1.4810
453.2	0.1862	0.2793	0.156	0.1557	1.8681	0.1236	1.4827
453.4	0.186293	0.2794	0.156	0.1557	1.8681	0.1238	1.4844
453.6	0.186386	0.2796	0.156	0.1557	1.8681	0.1239	1.4861
453.8	0.186479	0.2797	0.156	0.1557	1.8681	0.1240	1.4877
454	0.186572	0.2799	0.156	0.1557	1.8681	0.1242	1.4894
454.2	0.186665	0.2800	0.156	0.1557	1.8681	0.1243	1.4911
454.4	0.186758	0.2801	0.156	0.1557	1.8681	0.1245	1.4928
454.6	0.186852	0.2803	0.156	0.1557	1.8681	0.1246	1.4944
454.8	0.186945	0.2804	0.156	0.1557	1.8681	0.1247	1.4961
455	0.187038	0.2806	0.156	0.1557	1.8681	0.1249	1.4978
455.2	0.187131	0.2807	0.156	0.1557	1.8681	0.1250	1.4995
455.4	0.187224	0.2808	0.156	0.1557	1.8681	0.1252	1.5011
455.6	0.187318	0.2810	0.156	0.1557	1.8681	0.1253	1.5028
455.8	0.187411	0.2811	0.156	0.1557	1.8681	0.1254	1.5045
456	0.187504	0.2813	0.156	0.1557	1.8681	0.1256	1.5062
456.2	0.187598	0.2814	0.156	0.1557	1.8681	0.1257	1.5079
456.4	0.187691	0.2815	0.156	0.1557	1.8681	0.1259	1.5095
456.6	0.187784	0.2817	0.156	0.1557	1.8681	0.1260	1.5112
456.8	0.187877	0.2818	0.156	0.1557	1.8681	0.1261	1.5129
457	0.187971	0.2820	0.156	0.1557	1.8681	0.1263	1.5146
457.2	0.188064	0.2821	0.156	0.1557	1.8681	0.1264	1.5163
457.4	0.188158	0.2822	0.156	0.1557	1.8681	0.1266	1.5179
457.6	0.188251	0.2824	0.156	0.1557	1.8681	0.1267	1.5196
457.8	0.188344	0.2825	0.156	0.1557	1.8681	0.1268	1.5213
458	0.188438	0.2827	0.156	0.1557	1.8681	0.1270	1.5230
458.2	0.188531	0.2828	0.156	0.1557	1.8681	0.1271	1.5247
458.4	0.188625	0.2829	0.156	0.1557	1.8681	0.1273	1.5263
458.6	0.188718	0.2831	0.156	0.1557	1.8681	0.1274	1.5280
458.8	0.188811	0.2832	0.156	0.1557	1.8681	0.1275	1.5297
459	0.188905	0.2834	0.156	0.1557	1.8681	0.1277	1.5314

459.2	0.188998	0.2835	0.156	0.1557	1.8681	0.1278	1.5331
459.4	0.189092	0.2836	0.156	0.1557	1.8681	0.1280	1.5348
459.6	0.189185	0.2838	0.156	0.1557	1.8681	0.1281	1.5364
459.8	0.189279	0.2839	0.156	0.1557	1.8681	0.1282	1.5381
460	0.189372	0.2841	0.156	0.1557	1.8681	0.1284	1.5398
460.2	0.189466	0.2842	0.156	0.1557	1.8681	0.1285	1.5415
460.4	0.18956	0.2843	0.156	0.1557	1.8681	0.1287	1.5432
460.6	0.189653	0.2845	0.156	0.1557	1.8681	0.1288	1.5449
460.8	0.189747	0.2846	0.156	0.1557	1.8681	0.1289	1.5465
461	0.18984	0.2848	0.156	0.1557	1.8681	0.1291	1.5482
461.2	0.189934	0.2849	0.156	0.1557	1.8681	0.1292	1.5499
461.4	0.190027	0.2850	0.156	0.1557	1.8681	0.1294	1.5516
461.6	0.190121	0.2852	0.156	0.1557	1.8681	0.1295	1.5533
461.8	0.190215	0.2853	0.156	0.1557	1.8681	0.1297	1.5550
462	0.190308	0.2855	0.156	0.1557	1.8681	0.1298	1.5567
462.2	0.190402	0.2856	0.156	0.1557	1.8681	0.1299	1.5583
462.4	0.190496	0.2857	0.156	0.1557	1.8681	0.1301	1.5600
462.6	0.190589	0.2859	0.156	0.1557	1.8681	0.1302	1.5617
462.8	0.190683	0.2860	0.156	0.1557	1.8681	0.1304	1.5634
463	0.190777	0.2862	0.156	0.1557	1.8681	0.1305	1.5651
463.2	0.190871	0.2863	0.156	0.1557	1.8681	0.1306	1.5668
463.4	0.190964	0.2864	0.156	0.1557	1.8681	0.1308	1.5685
463.6	0.191058	0.2866	0.156	0.1557	1.8681	0.1309	1.5701
463.8	0.191152	0.2867	0.156	0.1557	1.8681	0.1311	1.5718
464	0.191246	0.2869	0.156	0.1557	1.8681	0.1312	1.5735
464.2	0.191339	0.2870	0.156	0.1557	1.8681	0.1313	1.5752
464.4	0.191433	0.2871	0.156	0.1557	1.8681	0.1315	1.5769
464.6	0.191527	0.2873	0.156	0.1557	1.8681	0.1316	1.5786
464.8	0.191621	0.2874	0.156	0.1557	1.8681	0.1318	1.5803
465	0.191715	0.2876	0.156	0.1557	1.8681	0.1319	1.5820
465.2	0.191809	0.2877	0.156	0.1557	1.8681	0.1320	1.5837
465.4	0.191903	0.2879	0.156	0.1557	1.8681	0.1322	1.5853
465.6	0.191996	0.2880	0.156	0.1557	1.8681	0.1323	1.5870
465.8	0.19209	0.2881	0.156	0.1557	1.8681	0.1325	1.5887
466	0.192184	0.2883	0.156	0.1557	1.8681	0.1326	1.5904
466.2	0.192278	0.2884	0.156	0.1557	1.8681	0.1327	1.5921
466.4	0.192372	0.2886	0.156	0.1557	1.8681	0.1329	1.5938
466.6	0.192466	0.2887	0.156	0.1557	1.8681	0.1330	1.5955
466.8	0.19256	0.2888	0.156	0.1557	1.8681	0.1332	1.5972
467	0.192654	0.2890	0.156	0.1557	1.8681	0.1333	1.5989
467.2	0.192748	0.2891	0.156	0.1557	1.8681	0.1335	1.6006
467.4	0.192842	0.2893	0.156	0.1557	1.8681	0.1336	1.6023
467.6	0.192936	0.2894	0.156	0.1557	1.8681	0.1337	1.6039
467.8	0.19303	0.2895	0.156	0.1557	1.8681	0.1339	1.6056
468	0.193124	0.2897	0.156	0.1557	1.8681	0.1340	1.6073
468.2	0.193218	0.2898	0.156	0.1557	1.8681	0.1342	1.6090
468.4	0.193312	0.2900	0.156	0.1557	1.8681	0.1343	1.6107

468.6	0.193406	0.2901	0.156	0.1557	1.8681	0.1344	1.6124
468.8	0.1935	0.2903	0.156	0.1557	1.8681	0.1346	1.6141
469	0.193594	0.2904	0.156	0.1557	1.8681	0.1347	1.6158
469.2	0.193689	0.2905	0.156	0.1557	1.8681	0.1349	1.6175
469.4	0.193783	0.2907	0.156	0.1557	1.8681	0.1350	1.6192
469.6	0.193877	0.2908	0.156	0.1557	1.8681	0.1351	1.6209
469.8	0.193971	0.2910	0.156	0.1557	1.8681	0.1353	1.6226
470	0.194065	0.2911	0.156	0.1557	1.8681	0.1354	1.6243
470.2	0.194159	0.2912	0.156	0.1557	1.8681	0.1356	1.6260
470.4	0.194254	0.2914	0.156	0.1557	1.8681	0.1357	1.6277
470.6	0.194348	0.2915	0.156	0.1557	1.8681	0.1359	1.6294
470.8	0.194442	0.2917	0.156	0.1557	1.8681	0.1360	1.6311
471	0.194536	0.2918	0.156	0.1557	1.8681	0.1361	1.6327
471.2	0.194631	0.2919	0.156	0.1557	1.8681	0.1363	1.6344
471.4	0.194725	0.2921	0.156	0.1557	1.8681	0.1364	1.6361
471.6	0.194819	0.2922	0.156	0.1557	1.8681	0.1366	1.6378
471.8	0.194913	0.2924	0.156	0.1557	1.8681	0.1367	1.6395
472	0.195008	0.2925	0.156	0.1557	1.8681	0.1368	1.6412
472.2	0.195102	0.2927	0.156	0.1557	1.8681	0.1370	1.6429
472.4	0.195196	0.2928	0.156	0.1557	1.8681	0.1371	1.6446
472.6	0.195291	0.2929	0.156	0.1557	1.8681	0.1373	1.6463
472.8	0.195385	0.2931	0.156	0.1557	1.8681	0.1374	1.6480
473	0.195479	0.2932	0.156	0.1557	1.8681	0.1375	1.6497
473.2	0.195574	0.2934	0.156	0.1557	1.8681	0.1377	1.6514
473.4	0.195668	0.2935	0.156	0.1557	1.8681	0.1378	1.6531
473.6	0.195763	0.2936	0.156	0.1557	1.8681	0.1380	1.6548
473.8	0.195857	0.2938	0.156	0.1557	1.8681	0.1381	1.6565
474	0.195951	0.2939	0.156	0.1557	1.8681	0.1383	1.6582
474.2	0.196046	0.2941	0.156	0.1557	1.8681	0.1384	1.6599
474.4	0.19614	0.2942	0.156	0.1557	1.8681	0.1385	1.6616
474.6	0.196235	0.2944	0.156	0.1557	1.8681	0.1387	1.6633
474.8	0.196329	0.2945	0.156	0.1557	1.8681	0.1388	1.6650
475	0.196424	0.2946	0.156	0.1557	1.8681	0.1390	1.6667
475.2	0.196518	0.2948	0.156	0.1557	1.8681	0.1391	1.6684
475.4	0.196613	0.2949	0.156	0.1557	1.8681	0.1392	1.6701
475.6	0.196707	0.2951	0.156	0.1557	1.8681	0.1394	1.6718
475.8	0.196802	0.2952	0.156	0.1557	1.8681	0.1395	1.6735
476	0.196896	0.2953	0.156	0.1557	1.8681	0.1397	1.6752
476.2	0.196991	0.2955	0.156	0.1557	1.8681	0.1398	1.6769
476.4	0.197086	0.2956	0.156	0.1557	1.8681	0.1400	1.6786
476.6	0.19718	0.2958	0.156	0.1557	1.8681	0.1401	1.6803
476.8	0.197275	0.2959	0.156	0.1557	1.8681	0.1402	1.6820
477	0.197369	0.2961	0.156	0.1557	1.8681	0.1404	1.6837
477.2	0.197464	0.2962	0.156	0.1557	1.8681	0.1405	1.6854
477.4	0.197559	0.2963	0.156	0.1557	1.8681	0.1407	1.6871
477.6	0.197653	0.2965	0.156	0.1557	1.8681	0.1408	1.6889
477.8	0.197748	0.2966	0.156	0.1557	1.8681	0.1410	1.6906

478	0.197843	0.2968	0.156	0.1557	1.8681	0.1411	1.6923
478.2	0.197937	0.2969	0.156	0.1557	1.8681	0.1412	1.6940
478.4	0.198032	0.2970	0.156	0.1557	1.8681	0.1414	1.6957
478.6	0.198127	0.2972	0.156	0.1557	1.8681	0.1415	1.6974
478.8	0.198222	0.2973	0.156	0.1557	1.8681	0.1417	1.6991
479	0.198316	0.2975	0.156	0.1557	1.8681	0.1418	1.7008
479.2	0.198411	0.2976	0.156	0.1557	1.8681	0.1419	1.7025
479.4	0.198506	0.2978	0.156	0.1557	1.8681	0.1421	1.7042
479.6	0.198601	0.2979	0.156	0.1557	1.8681	0.1422	1.7059
479.8	0.198696	0.2980	0.156	0.1557	1.8681	0.1424	1.7076
480	0.19879	0.2982	0.156	0.1557	1.8681	0.1425	1.7093
480.2	0.198885	0.2983	0.156	0.1557	1.8681	0.1427	1.7110
480.4	0.19898	0.2985	0.156	0.1557	1.8681	0.1428	1.7127
480.6	0.199075	0.2986	0.156	0.1557	1.8681	0.1429	1.7144
480.8	0.19917	0.2988	0.156	0.1557	1.8681	0.1431	1.7161
481	0.199265	0.2989	0.156	0.1557	1.8681	0.1432	1.7179
481.2	0.19936	0.2990	0.156	0.1557	1.8681	0.1434	1.7196
481.4	0.199455	0.2992	0.156	0.1557	1.8681	0.1435	1.7213
481.6	0.19955	0.2993	0.156	0.1557	1.8681	0.1437	1.7230
481.8	0.199644	0.2995	0.156	0.1557	1.8681	0.1438	1.7247
482	0.199739	0.2996	0.156	0.1557	1.8681	0.1439	1.7264
482.2	0.199834	0.2998	0.156	0.1557	1.8681	0.1441	1.7281
482.4	0.199929	0.2999	0.156	0.1557	1.8681	0.1442	1.7298
482.6	0.200024	0.3000	0.156	0.1557	1.8681	0.1444	1.7315
482.8	0.200119	0.3002	0.156	0.1557	1.8681	0.1445	1.7332
483	0.200214	0.3003	0.156	0.1557	1.8681	0.1447	1.7349
483.2	0.200309	0.3005	0.156	0.1557	1.8681	0.1448	1.7367
483.4	0.200405	0.3006	0.156	0.1557	1.8681	0.1449	1.7384
483.6	0.2005	0.3007	0.156	0.1557	1.8681	0.1451	1.7401
483.8	0.200595	0.3009	0.156	0.1557	1.8681	0.1452	1.7418
484	0.20069	0.3010	0.156	0.1557	1.8681	0.1454	1.7435
484.2	0.200785	0.3012	0.156	0.1557	1.8681	0.1455	1.7452
484.4	0.20088	0.3013	0.156	0.1557	1.8681	0.1456	1.7469
484.6	0.200975	0.3015	0.156	0.1557	1.8681	0.1458	1.7486
484.8	0.20107	0.3016	0.156	0.1557	1.8681	0.1459	1.7504
485	0.201165	0.3017	0.156	0.1557	1.8681	0.1461	1.7521
485.2	0.201261	0.3019	0.156	0.1557	1.8681	0.1462	1.7538
485.4	0.201356	0.3020	0.156	0.1557	1.8681	0.1464	1.7555
485.6	0.201451	0.3022	0.156	0.1557	1.8681	0.1465	1.7572
485.8	0.201546	0.3023	0.156	0.1557	1.8681	0.1466	1.7589
486	0.201641	0.3025	0.156	0.1557	1.8681	0.1468	1.7606
486.2	0.201737	0.3026	0.156	0.1557	1.8681	0.1469	1.7623
486.4	0.201832	0.3027	0.156	0.1557	1.8681	0.1471	1.7641
486.6	0.201927	0.3029	0.156	0.1557	1.8681	0.1472	1.7658
486.8	0.202022	0.3030	0.156	0.1557	1.8681	0.1474	1.7675
487	0.202118	0.3032	0.156	0.1557	1.8681	0.1475	1.7692
487.2	0.202213	0.3033	0.156	0.1557	1.8681	0.1476	1.7709

487.4	0.202308	0.3035	0.156	0.1557	1.8681	0.1478	1.7726
487.6	0.202404	0.3036	0.156	0.1557	1.8681	0.1479	1.7744
487.8	0.202499	0.3037	0.156	0.1557	1.8681	0.1481	1.7761
488	0.202594	0.3039	0.156	0.1557	1.8681	0.1482	1.7778
488.2	0.20269	0.3040	0.156	0.1557	1.8681	0.1484	1.7795
488.4	0.202785	0.3042	0.156	0.1557	1.8681	0.1485	1.7812
488.6	0.202881	0.3043	0.156	0.1557	1.8681	0.1486	1.7829
488.8	0.202976	0.3045	0.156	0.1557	1.8681	0.1488	1.7847
489	0.203071	0.3046	0.156	0.1557	1.8681	0.1489	1.7864
489.2	0.203167	0.3048	0.156	0.1557	1.8681	0.1491	1.7881
489.4	0.203262	0.3049	0.156	0.1557	1.8681	0.1492	1.7898
489.6	0.203358	0.3050	0.156	0.1557	1.8681	0.1494	1.7915
489.8	0.203453	0.3052	0.156	0.1557	1.8681	0.1495	1.7932
490	0.203549	0.3053	0.156	0.1557	1.8681	0.1497	1.7950
490.2	0.203644	0.3055	0.156	0.1557	1.8681	0.1498	1.7967
490.4	0.20374	0.3056	0.156	0.1557	1.8681	0.1499	1.7984
490.6	0.203835	0.3058	0.156	0.1557	1.8681	0.1501	1.8001
490.8	0.203931	0.3059	0.156	0.1557	1.8681	0.1502	1.8018
491	0.204027	0.3060	0.156	0.1557	1.8681	0.1504	1.8036
491.2	0.204122	0.3062	0.156	0.1557	1.8681	0.1505	1.8053
491.4	0.204218	0.3063	0.156	0.1557	1.8681	0.1507	1.8070
491.6	0.204313	0.3065	0.156	0.1557	1.8681	0.1508	1.8087
491.8	0.204409	0.3066	0.156	0.1557	1.8681	0.1509	1.8104
492	0.204505	0.3068	0.156	0.1557	1.8681	0.1511	1.8122
492.2	0.2046	0.3069	0.156	0.1557	1.8681	0.1512	1.8139
492.4	0.204696	0.3070	0.156	0.1557	1.8681	0.1514	1.8156
492.6	0.204792	0.3072	0.156	0.1557	1.8681	0.1515	1.8173
492.8	0.204887	0.3073	0.156	0.1557	1.8681	0.1517	1.8191
493	0.204983	0.3075	0.156	0.1557	1.8681	0.1518	1.8208
493.2	0.205079	0.3076	0.156	0.1557	1.8681	0.1519	1.8225
493.4	0.205174	0.3078	0.156	0.1557	1.8681	0.1521	1.8242
493.6	0.20527	0.3079	0.156	0.1557	1.8681	0.1522	1.8259
493.8	0.205366	0.3080	0.156	0.1557	1.8681	0.1524	1.8277
494	0.205462	0.3082	0.156	0.1557	1.8681	0.1525	1.8294
494.2	0.205557	0.3083	0.156	0.1557	1.8681	0.1527	1.8311
494.4	0.205653	0.3085	0.156	0.1557	1.8681	0.1528	1.8328
494.6	0.205749	0.3086	0.156	0.1557	1.8681	0.1530	1.8346
494.8	0.205845	0.3088	0.156	0.1557	1.8681	0.1531	1.8363
495	0.205941	0.3089	0.156	0.1557	1.8681	0.1532	1.8380
495.2	0.206037	0.3091	0.156	0.1557	1.8681	0.1534	1.8397
495.4	0.206132	0.3092	0.156	0.1557	1.8681	0.1535	1.8415
495.6	0.206228	0.3093	0.156	0.1557	1.8681	0.1537	1.8432
495.8	0.206324	0.3095	0.156	0.1557	1.8681	0.1538	1.8449
496	0.20642	0.3096	0.156	0.1557	1.8681	0.1540	1.8466
496.2	0.206516	0.3098	0.156	0.1557	1.8681	0.1541	1.8484
496.4	0.206612	0.3099	0.156	0.1557	1.8681	0.1542	1.8501
496.6	0.206708	0.3101	0.156	0.1557	1.8681	0.1544	1.8518

496.8	0.206804	0.3102	0.156	0.1557	1.8681	0.1545	1.8535
497	0.2069	0.3103	0.156	0.1557	1.8681	0.1547	1.8553
497.2	0.206996	0.3105	0.156	0.1557	1.8681	0.1548	1.8570
497.4	0.207092	0.3106	0.156	0.1557	1.8681	0.1550	1.8587
497.6	0.207188	0.3108	0.156	0.1557	1.8681	0.1551	1.8605
497.8	0.207284	0.3109	0.156	0.1557	1.8681	0.1553	1.8622
498	0.20738	0.3111	0.156	0.1557	1.8681	0.1554	1.8639
498.2	0.207476	0.3112	0.156	0.1557	1.8681	0.1555	1.8656
498.4	0.207572	0.3114	0.156	0.1557	1.8681	0.1557	1.8674
498.6	0.207668	0.3115	0.156	0.1557	1.8681	0.1558	1.8691
498.8	0.207764	0.3116	0.156	0.1557	1.8681	0.1560	1.8708
499	0.20786	0.3118	0.156	0.1557	1.8681	0.1561	1.8726
499.2	0.207956	0.3119	0.156	0.1557	1.8681	0.1563	1.8743
499.4	0.208053	0.3121	0.156	0.1557	1.8681	0.1564	1.8760
499.6	0.208149	0.3122	0.156	0.1557	1.8681	0.1566	1.8778
499.8	0.208245	0.3124	0.156	0.1557	1.8681	0.1567	1.8795
500	0.208341	0.3125	0.156	0.1557	1.8681	0.1568	1.8812
500.2	0.208437	0.3127	0.156	0.1557	1.8681	0.1570	1.8830
500.4	0.208534	0.3128	0.156	0.1557	1.8681	0.1571	1.8847
500.6	0.20863	0.3129	0.156	0.1557	1.8681	0.1573	1.8864
500.8	0.208726	0.3131	0.156	0.1557	1.8681	0.1574	1.8881
501	0.208822	0.3132	0.156	0.1557	1.8681	0.1576	1.8899
501.2	0.208918	0.3134	0.156	0.1557	1.8681	0.1577	1.8916
501.4	0.209015	0.3135	0.156	0.1557	1.8681	0.1579	1.8933
501.6	0.209111	0.3137	0.156	0.1557	1.8681	0.1580	1.8951
501.8	0.209207	0.3138	0.156	0.1557	1.8681	0.1581	1.8968
502	0.209304	0.3140	0.156	0.1557	1.8681	0.1583	1.8985
502.2	0.2094	0.3141	0.156	0.1557	1.8681	0.1584	1.9003
502.4	0.209496	0.3142	0.156	0.1557	1.8681	0.1586	1.9020
502.6	0.209593	0.3144	0.156	0.1557	1.8681	0.1587	1.9037
502.8	0.209689	0.3145	0.156	0.1557	1.8681	0.1589	1.9055
503	0.209786	0.3147	0.156	0.1557	1.8681	0.1590	1.9072
503.2	0.209882	0.3148	0.156	0.1557	1.8681	0.1592	1.9090
503.4	0.209978	0.3150	0.156	0.1557	1.8681	0.1593	1.9107
503.6	0.210075	0.3151	0.156	0.1557	1.8681	0.1594	1.9124
503.8	0.210171	0.3153	0.156	0.1557	1.8681	0.1596	1.9142
504	0.210268	0.3154	0.156	0.1557	1.8681	0.1597	1.9159
504.2	0.210364	0.3155	0.156	0.1557	1.8681	0.1599	1.9176
504.4	0.210461	0.3157	0.156	0.1557	1.8681	0.1600	1.9194
504.6	0.210557	0.3158	0.156	0.1557	1.8681	0.1602	1.9211
504.8	0.210654	0.3160	0.156	0.1557	1.8681	0.1603	1.9228
505	0.21075	0.3161	0.156	0.1557	1.8681	0.1605	1.9246
505.2	0.210847	0.3163	0.156	0.1557	1.8681	0.1606	1.9263
505.4	0.210943	0.3164	0.156	0.1557	1.8681	0.1607	1.9281
505.6	0.21104	0.3166	0.156	0.1557	1.8681	0.1609	1.9298
505.8	0.211136	0.3167	0.156	0.1557	1.8681	0.1610	1.9315
506	0.211233	0.3168	0.156	0.1557	1.8681	0.1612	1.9333

506.2	0.21133	0.3170	0.156	0.1557	1.8681	0.1613	1.9350
506.4	0.211426	0.3171	0.156	0.1557	1.8681	0.1615	1.9367
506.6	0.211523	0.3173	0.156	0.1557	1.8681	0.1616	1.9385
506.8	0.21162	0.3174	0.156	0.1557	1.8681	0.1618	1.9402
507	0.211716	0.3176	0.156	0.1557	1.8681	0.1619	1.9420
507.2	0.211813	0.3177	0.156	0.1557	1.8681	0.1620	1.9437
507.4	0.21191	0.3179	0.156	0.1557	1.8681	0.1622	1.9454
507.6	0.212006	0.3180	0.156	0.1557	1.8681	0.1623	1.9472
507.8	0.212103	0.3182	0.156	0.1557	1.8681	0.1625	1.9489
508	0.2122	0.3183	0.156	0.1557	1.8681	0.1626	1.9507
508.2	0.212297	0.3184	0.156	0.1557	1.8681	0.1628	1.9524
508.4	0.212393	0.3186	0.156	0.1557	1.8681	0.1629	1.9542
508.6	0.21249	0.3187	0.156	0.1557	1.8681	0.1631	1.9559
508.8	0.212587	0.3189	0.156	0.1557	1.8681	0.1632	1.9576
509	0.212684	0.3190	0.156	0.1557	1.8681	0.1634	1.9594
509.2	0.212781	0.3192	0.156	0.1557	1.8681	0.1635	1.9611
509.4	0.212877	0.3193	0.156	0.1557	1.8681	0.1636	1.9629
509.6	0.212974	0.3195	0.156	0.1557	1.8681	0.1638	1.9646
509.8	0.213071	0.3196	0.156	0.1557	1.8681	0.1639	1.9664
510	0.213168	0.3198	0.156	0.1557	1.8681	0.1641	1.9681
510.2	0.213265	0.3199	0.156	0.1557	1.8681	0.1642	1.9698
510.4	0.213362	0.3200	0.156	0.1557	1.8681	0.1644	1.9716
510.6	0.213459	0.3202	0.156	0.1557	1.8681	0.1645	1.9733
510.8	0.213556	0.3203	0.156	0.1557	1.8681	0.1647	1.9751
511	0.213653	0.3205	0.156	0.1557	1.8681	0.1648	1.9768
511.2	0.21375	0.3206	0.156	0.1557	1.8681	0.1650	1.9786
511.4	0.213847	0.3208	0.156	0.1557	1.8681	0.1651	1.9803
511.6	0.213944	0.3209	0.156	0.1557	1.8681	0.1652	1.9821
511.8	0.214041	0.3211	0.156	0.1557	1.8681	0.1654	1.9838
512	0.214138	0.3212	0.156	0.1557	1.8681	0.1655	1.9855
512.2	0.214235	0.3214	0.156	0.1557	1.8681	0.1657	1.9873
512.4	0.214332	0.3215	0.156	0.1557	1.8681	0.1658	1.9890
512.6	0.214429	0.3216	0.156	0.1557	1.8681	0.1660	1.9908
512.8	0.214526	0.3218	0.156	0.1557	1.8681	0.1661	1.9925
513	0.214623	0.3219	0.156	0.1557	1.8681	0.1663	1.9943
513.2	0.21472	0.3221	0.156	0.1557	1.8681	0.1664	1.9960
513.4	0.214817	0.3222	0.156	0.1557	1.8681	0.1666	1.9978
513.6	0.214914	0.3224	0.156	0.1557	1.8681	0.1667	1.9995
513.8	0.215012	0.3225	0.156	0.1557	1.8681	0.1668	2.0013
514	0.215109	0.3227	0.156	0.1557	1.8681	0.1670	2.0030
514.2	0.215206	0.3228	0.156	0.1557	1.8681	0.1671	2.0048
514.4	0.215303	0.3230	0.156	0.1557	1.8681	0.1673	2.0065
514.6	0.2154	0.3231	0.156	0.1557	1.8681	0.1674	2.0083
514.8	0.215498	0.3232	0.156	0.1557	1.8681	0.1676	2.0100
515	0.215595	0.3234	0.156	0.1557	1.8681	0.1677	2.0118
515.2	0.215692	0.3235	0.156	0.1557	1.8681	0.1679	2.0135
515.4	0.215789	0.3237	0.156	0.1557	1.8681	0.1680	2.0153

515.6	0.215887	0.3238	0.156	0.1557	1.8681	0.1682	2.0170
515.8	0.215984	0.3240	0.156	0.1557	1.8681	0.1683	2.0188
516	0.216081	0.3241	0.156	0.1557	1.8681	0.1685	2.0205
516.2	0.216179	0.3243	0.156	0.1557	1.8681	0.1686	2.0223
516.4	0.216276	0.3244	0.156	0.1557	1.8681	0.1687	2.0240
516.6	0.216373	0.3246	0.156	0.1557	1.8681	0.1689	2.0258
516.8	0.216471	0.3247	0.156	0.1557	1.8681	0.1690	2.0275
517	0.216568	0.3249	0.156	0.1557	1.8681	0.1692	2.0293
517.2	0.216665	0.3250	0.156	0.1557	1.8681	0.1693	2.0310
517.4	0.216763	0.3251	0.156	0.1557	1.8681	0.1695	2.0328
517.6	0.21686	0.3253	0.156	0.1557	1.8681	0.1696	2.0346
517.8	0.216958	0.3254	0.156	0.1557	1.8681	0.1698	2.0363
518	0.217055	0.3256	0.156	0.1557	1.8681	0.1699	2.0381
518.2	0.217153	0.3257	0.156	0.1557	1.8681	0.1701	2.0398
518.4	0.21725	0.3259	0.156	0.1557	1.8681	0.1702	2.0416
518.6	0.217348	0.3260	0.156	0.1557	1.8681	0.1704	2.0433
518.8	0.217445	0.3262	0.156	0.1557	1.8681	0.1705	2.0451
519	0.217543	0.3263	0.156	0.1557	1.8681	0.1706	2.0468
519.2	0.21764	0.3265	0.156	0.1557	1.8681	0.1708	2.0486
519.4	0.217738	0.3266	0.156	0.1557	1.8681	0.1709	2.0503
519.6	0.217835	0.3268	0.156	0.1557	1.8681	0.1711	2.0521
519.8	0.217933	0.3269	0.156	0.1557	1.8681	0.1712	2.0539
520	0.218031	0.3270	0.156	0.1557	1.8681	0.1714	2.0556
520.2	0.218128	0.3272	0.156	0.1557	1.8681	0.1715	2.0574
520.4	0.218226	0.3273	0.156	0.1557	1.8681	0.1717	2.0591
520.6	0.218323	0.3275	0.156	0.1557	1.8681	0.1718	2.0609
520.8	0.218421	0.3276	0.156	0.1557	1.8681	0.1720	2.0626
521	0.218519	0.3278	0.156	0.1557	1.8681	0.1721	2.0644
521.2	0.218616	0.3279	0.156	0.1557	1.8681	0.1723	2.0662
521.4	0.218714	0.3281	0.156	0.1557	1.8681	0.1724	2.0679
521.6	0.218812	0.3282	0.156	0.1557	1.8681	0.1725	2.0697
521.8	0.21891	0.3284	0.156	0.1557	1.8681	0.1727	2.0714
522	0.219007	0.3285	0.156	0.1557	1.8681	0.1728	2.0732
522.2	0.219105	0.3287	0.156	0.1557	1.8681	0.1730	2.0750
522.4	0.219203	0.3288	0.156	0.1557	1.8681	0.1731	2.0767
522.6	0.219301	0.3290	0.156	0.1557	1.8681	0.1733	2.0785
522.8	0.219398	0.3291	0.156	0.1557	1.8681	0.1734	2.0802
523	0.219496	0.3292	0.156	0.1557	1.8681	0.1736	2.0820
523.2	0.219594	0.3294	0.156	0.1557	1.8681	0.1737	2.0838
523.4	0.219692	0.3295	0.156	0.1557	1.8681	0.1739	2.0855
523.6	0.21979	0.3297	0.156	0.1557	1.8681	0.1740	2.0873
523.8	0.219888	0.3298	0.156	0.1557	1.8681	0.1742	2.0890
524	0.219986	0.3300	0.156	0.1557	1.8681	0.1743	2.0908
524.2	0.220083	0.3301	0.156	0.1557	1.8681	0.1745	2.0926
524.4	0.220181	0.3303	0.156	0.1557	1.8681	0.1746	2.0943
524.6	0.220279	0.3304	0.156	0.1557	1.8681	0.1747	2.0961
524.8	0.220377	0.3306	0.156	0.1557	1.8681	0.1749	2.0979

525	0.220475	0.3307	0.156	0.1557	1.8681	0.1750	2.0996
525.2	0.220573	0.3309	0.156	0.1557	1.8681	0.1752	2.1014
525.4	0.220671	0.3310	0.156	0.1557	1.8681	0.1753	2.1031
525.6	0.220769	0.3312	0.156	0.1557	1.8681	0.1755	2.1049
525.8	0.220867	0.3313	0.156	0.1557	1.8681	0.1756	2.1067
526	0.220965	0.3314	0.156	0.1557	1.8681	0.1758	2.1084
526.2	0.221063	0.3316	0.156	0.1557	1.8681	0.1759	2.1102
526.4	0.221161	0.3317	0.156	0.1557	1.8681	0.1761	2.1120
526.6	0.22126	0.3319	0.156	0.1557	1.8681	0.1762	2.1137
526.8	0.221358	0.3320	0.156	0.1557	1.8681	0.1764	2.1155
527	0.221456	0.3322	0.156	0.1557	1.8681	0.1765	2.1173
527.2	0.221554	0.3323	0.156	0.1557	1.8681	0.1767	2.1190
527.4	0.221652	0.3325	0.156	0.1557	1.8681	0.1768	2.1208
527.6	0.22175	0.3326	0.156	0.1557	1.8681	0.1770	2.1226
527.8	0.221848	0.3328	0.156	0.1557	1.8681	0.1771	2.1243
528	0.221947	0.3329	0.156	0.1557	1.8681	0.1772	2.1261
528.2	0.222045	0.3331	0.156	0.1557	1.8681	0.1774	2.1279
528.4	0.222143	0.3332	0.156	0.1557	1.8681	0.1775	2.1296
528.6	0.222241	0.3334	0.156	0.1557	1.8681	0.1777	2.1314
528.8	0.222339	0.3335	0.156	0.1557	1.8681	0.1778	2.1332
529	0.222438	0.3337	0.156	0.1557	1.8681	0.1780	2.1349
529.2	0.222536	0.3338	0.156	0.1557	1.8681	0.1781	2.1367
529.4	0.222634	0.3340	0.156	0.1557	1.8681	0.1783	2.1385
529.6	0.222733	0.3341	0.156	0.1557	1.8681	0.1784	2.1402
529.8	0.222831	0.3342	0.156	0.1557	1.8681	0.1786	2.1420
530	0.222929	0.3344	0.156	0.1557	1.8681	0.1787	2.1438
530.2	0.223028	0.3345	0.156	0.1557	1.8681	0.1789	2.1456
530.4	0.223126	0.3347	0.156	0.1557	1.8681	0.1790	2.1473
530.6	0.223224	0.3348	0.156	0.1557	1.8681	0.1792	2.1491
530.8	0.223323	0.3350	0.156	0.1557	1.8681	0.1793	2.1509
531	0.223421	0.3351	0.156	0.1557	1.8681	0.1795	2.1526
531.2	0.22352	0.3353	0.156	0.1557	1.8681	0.1796	2.1544
531.4	0.223618	0.3354	0.156	0.1557	1.8681	0.1798	2.1562
531.6	0.223716	0.3356	0.156	0.1557	1.8681	0.1799	2.1580
531.8	0.223815	0.3357	0.156	0.1557	1.8681	0.1801	2.1597
532	0.223913	0.3359	0.156	0.1557	1.8681	0.1802	2.1615
532.2	0.224012	0.3360	0.156	0.1557	1.8681	0.1803	2.1633
532.4	0.22411	0.3362	0.156	0.1557	1.8681	0.1805	2.1650
532.6	0.224209	0.3363	0.156	0.1557	1.8681	0.1806	2.1668
532.8	0.224307	0.3365	0.156	0.1557	1.8681	0.1808	2.1686
533	0.224406	0.3366	0.156	0.1557	1.8681	0.1809	2.1704
533.2	0.224505	0.3368	0.156	0.1557	1.8681	0.1811	2.1721
533.4	0.224603	0.3369	0.156	0.1557	1.8681	0.1812	2.1739
533.6	0.224702	0.3371	0.156	0.1557	1.8681	0.1814	2.1757
533.8	0.2248	0.3372	0.156	0.1557	1.8681	0.1815	2.1775
534	0.224899	0.3373	0.156	0.1557	1.8681	0.1817	2.1792
534.2	0.224998	0.3375	0.156	0.1557	1.8681	0.1818	2.1810

534.4	0.225096	0.3376	0.156	0.1557	1.8681	0.1820	2.1828
534.6	0.225195	0.3378	0.156	0.1557	1.8681	0.1821	2.1846
534.8	0.225294	0.3379	0.156	0.1557	1.8681	0.1823	2.1863
535	0.225392	0.3381	0.156	0.1557	1.8681	0.1824	2.1881
535.2	0.225491	0.3382	0.156	0.1557	1.8681	0.1826	2.1899
535.4	0.22559	0.3384	0.156	0.1557	1.8681	0.1827	2.1917
535.6	0.225689	0.3385	0.156	0.1557	1.8681	0.1829	2.1935
535.8	0.225787	0.3387	0.156	0.1557	1.8681	0.1830	2.1952
536	0.225886	0.3388	0.156	0.1557	1.8681	0.1832	2.1970
536.2	0.225985	0.3390	0.156	0.1557	1.8681	0.1833	2.1988
536.4	0.226084	0.3391	0.156	0.1557	1.8681	0.1835	2.2006
536.6	0.226183	0.3393	0.156	0.1557	1.8681	0.1836	2.2023
536.8	0.226282	0.3394	0.156	0.1557	1.8681	0.1838	2.2041
537	0.22638	0.3396	0.156	0.1557	1.8681	0.1839	2.2059
537.2	0.226479	0.3397	0.156	0.1557	1.8681	0.1840	2.2077
537.4	0.226578	0.3399	0.156	0.1557	1.8681	0.1842	2.2095
537.6	0.226677	0.3400	0.156	0.1557	1.8681	0.1843	2.2112
537.8	0.226776	0.3402	0.156	0.1557	1.8681	0.1845	2.2130
538	0.226875	0.3403	0.156	0.1557	1.8681	0.1846	2.2148
538.2	0.226974	0.3405	0.156	0.1557	1.8681	0.1848	2.2166
538.4	0.227073	0.3406	0.156	0.1557	1.8681	0.1849	2.2184
538.6	0.227172	0.3408	0.156	0.1557	1.8681	0.1851	2.2201
538.8	0.227271	0.3409	0.156	0.1557	1.8681	0.1852	2.2219
539	0.22737	0.3411	0.156	0.1557	1.8681	0.1854	2.2237
539.2	0.227469	0.3412	0.156	0.1557	1.8681	0.1855	2.2255
539.4	0.227568	0.3414	0.156	0.1557	1.8681	0.1857	2.2273
539.6	0.227667	0.3415	0.156	0.1557	1.8681	0.1858	2.2291
539.8	0.227766	0.3416	0.156	0.1557	1.8681	0.1860	2.2308
540	0.227865	0.3418	0.156	0.1557	1.8681	0.1861	2.2326
540.2	0.227964	0.3419	0.156	0.1557	1.8681	0.1863	2.2344
540.4	0.228063	0.3421	0.156	0.1557	1.8681	0.1864	2.2362
540.6	0.228162	0.3422	0.156	0.1557	1.8681	0.1866	2.2380
540.8	0.228262	0.3424	0.156	0.1557	1.8681	0.1867	2.2398
541	0.228361	0.3425	0.156	0.1557	1.8681	0.1869	2.2415
541.2	0.22846	0.3427	0.156	0.1557	1.8681	0.1870	2.2433
541.4	0.228559	0.3428	0.156	0.1557	1.8681	0.1872	2.2451
541.6	0.228658	0.3430	0.156	0.1557	1.8681	0.1873	2.2469
541.8	0.228758	0.3431	0.156	0.1557	1.8681	0.1875	2.2487
542	0.228857	0.3433	0.156	0.1557	1.8681	0.1876	2.2505
542.2	0.228956	0.3434	0.156	0.1557	1.8681	0.1878	2.2523
542.4	0.229055	0.3436	0.156	0.1557	1.8681	0.1879	2.2540
542.6	0.229155	0.3437	0.156	0.1557	1.8681	0.1881	2.2558
542.8	0.229254	0.3439	0.156	0.1557	1.8681	0.1882	2.2576
543	0.229353	0.3440	0.156	0.1557	1.8681	0.1884	2.2594
543.2	0.229453	0.3442	0.156	0.1557	1.8681	0.1885	2.2612
543.4	0.229552	0.3443	0.156	0.1557	1.8681	0.1887	2.2630
543.6	0.229651	0.3445	0.156	0.1557	1.8681	0.1888	2.2648

543.8	0.229751	0.3446	0.156	0.1557	1.8681	0.1890	2.2666
544	0.22985	0.3448	0.156	0.1557	1.8681	0.1891	2.2684
544.2	0.229949	0.3449	0.156	0.1557	1.8681	0.1893	2.2701
544.4	0.230049	0.3451	0.156	0.1557	1.8681	0.1894	2.2719
544.6	0.230148	0.3452	0.156	0.1557	1.8681	0.1896	2.2737
544.8	0.230248	0.3454	0.156	0.1557	1.8681	0.1897	2.2755
545	0.230347	0.3455	0.156	0.1557	1.8681	0.1898	2.2773
545.2	0.230447	0.3457	0.156	0.1557	1.8681	0.1900	2.2791
545.4	0.230546	0.3458	0.156	0.1557	1.8681	0.1901	2.2809
545.6	0.230646	0.3460	0.156	0.1557	1.8681	0.1903	2.2827
545.8	0.230745	0.3461	0.156	0.1557	1.8681	0.1904	2.2845
546	0.230845	0.3463	0.156	0.1557	1.8681	0.1906	2.2863
546.2	0.230944	0.3464	0.156	0.1557	1.8681	0.1907	2.2880
546.4	0.231044	0.3466	0.156	0.1557	1.8681	0.1909	2.2898
546.6	0.231144	0.3467	0.156	0.1557	1.8681	0.1910	2.2916
546.8	0.231243	0.3469	0.156	0.1557	1.8681	0.1912	2.2934
547	0.231343	0.3470	0.156	0.1557	1.8681	0.1913	2.2952
547.2	0.231442	0.3472	0.156	0.1557	1.8681	0.1915	2.2970
547.4	0.231542	0.3473	0.156	0.1557	1.8681	0.1916	2.2988
547.6	0.231642	0.3475	0.156	0.1557	1.8681	0.1918	2.3006
547.8	0.231741	0.3476	0.156	0.1557	1.8681	0.1919	2.3024
548	0.231841	0.3478	0.156	0.1557	1.8681	0.1921	2.3042
548.2	0.231941	0.3479	0.156	0.1557	1.8681	0.1922	2.3060
548.4	0.232041	0.3481	0.156	0.1557	1.8681	0.1924	2.3078
548.6	0.23214	0.3482	0.156	0.1557	1.8681	0.1925	2.3096
548.8	0.23224	0.3484	0.156	0.1557	1.8681	0.1927	2.3114
549	0.23234	0.3485	0.156	0.1557	1.8681	0.1928	2.3132
549.2	0.23244	0.3487	0.156	0.1557	1.8681	0.1930	2.3150
549.4	0.23254	0.3488	0.156	0.1557	1.8681	0.1931	2.3168
549.6	0.232639	0.3490	0.156	0.1557	1.8681	0.1933	2.3186
549.8	0.232739	0.3491	0.156	0.1557	1.8681	0.1934	2.3204
550	0.232839	0.3493	0.156	0.1557	1.8681	0.1936	2.3221
550.2	0.232939	0.3494	0.156	0.1557	1.8681	0.1937	2.3239
550.4	0.233039	0.3496	0.156	0.1557	1.8681	0.1939	2.3257
550.6	0.233139	0.3497	0.156	0.1557	1.8681	0.1940	2.3275
550.8	0.233239	0.3499	0.156	0.1557	1.8681	0.1942	2.3293
551	0.233339	0.3500	0.156	0.1557	1.8681	0.1943	2.3311
551.2	0.233439	0.3502	0.156	0.1557	1.8681	0.1945	2.3329
551.4	0.233539	0.3503	0.156	0.1557	1.8681	0.1946	2.3347
551.6	0.233638	0.3505	0.156	0.1557	1.8681	0.1948	2.3365
551.8	0.233738	0.3506	0.156	0.1557	1.8681	0.1949	2.3383
552	0.233838	0.3508	0.156	0.1557	1.8681	0.1951	2.3401
552.2	0.233939	0.3509	0.156	0.1557	1.8681	0.1952	2.3419
552.4	0.234039	0.3511	0.156	0.1557	1.8681	0.1954	2.3437
552.6	0.234139	0.3512	0.156	0.1557	1.8681	0.1955	2.3455
552.8	0.234239	0.3514	0.156	0.1557	1.8681	0.1957	2.3473
553	0.234339	0.3515	0.156	0.1557	1.8681	0.1958	2.3491

553.2	0.234439	0.3517	0.156	0.1557	1.8681	0.1960	2.3509
553.4	0.234539	0.3518	0.156	0.1557	1.8681	0.1961	2.3527
553.6	0.234639	0.3520	0.156	0.1557	1.8681	0.1963	2.3545
553.8	0.234739	0.3521	0.156	0.1557	1.8681	0.1964	2.3564
554	0.23484	0.3523	0.156	0.1557	1.8681	0.1966	2.3582
554.2	0.23494	0.3524	0.156	0.1557	1.8681	0.1967	2.3600
554.4	0.23504	0.3526	0.156	0.1557	1.8681	0.1969	2.3618
554.6	0.23514	0.3527	0.156	0.1557	1.8681	0.1970	2.3636
554.8	0.23524	0.3529	0.156	0.1557	1.8681	0.1972	2.3654
555	0.235341	0.3530	0.156	0.1557	1.8681	0.1973	2.3672
555.2	0.235441	0.3532	0.156	0.1557	1.8681	0.1975	2.3690
555.4	0.235541	0.3533	0.156	0.1557	1.8681	0.1976	2.3708
555.6	0.235641	0.3535	0.156	0.1557	1.8681	0.1978	2.3726
555.8	0.235742	0.3536	0.156	0.1557	1.8681	0.1979	2.3744
556	0.235842	0.3538	0.156	0.1557	1.8681	0.1981	2.3762
556.2	0.235942	0.3539	0.156	0.1557	1.8681	0.1982	2.3780
556.4	0.236043	0.3541	0.156	0.1557	1.8681	0.1984	2.3798
556.6	0.236143	0.3542	0.156	0.1557	1.8681	0.1985	2.3816
556.8	0.236244	0.3544	0.156	0.1557	1.8681	0.1987	2.3834
557	0.236344	0.3545	0.156	0.1557	1.8681	0.1988	2.3852
557.2	0.236444	0.3547	0.156	0.1557	1.8681	0.1990	2.3870
557.4	0.236545	0.3548	0.156	0.1557	1.8681	0.1991	2.3888
557.6	0.236645	0.3550	0.156	0.1557	1.8681	0.1993	2.3907
557.8	0.236746	0.3551	0.156	0.1557	1.8681	0.1994	2.3925
558	0.236846	0.3553	0.156	0.1557	1.8681	0.1996	2.3943
558.2	0.236947	0.3554	0.156	0.1557	1.8681	0.1997	2.3961
558.4	0.237047	0.3556	0.156	0.1557	1.8681	0.1999	2.3979
558.6	0.237148	0.3557	0.156	0.1557	1.8681	0.2001	2.3997
558.8	0.237248	0.3559	0.156	0.1557	1.8681	0.2002	2.4015
559	0.237349	0.3560	0.156	0.1557	1.8681	0.2004	2.4033
559.2	0.237449	0.3562	0.156	0.1557	1.8681	0.2005	2.4051
559.4	0.23755	0.3563	0.156	0.1557	1.8681	0.2007	2.4069
559.6	0.237651	0.3565	0.156	0.1557	1.8681	0.2008	2.4088
559.8	0.237751	0.3566	0.156	0.1557	1.8681	0.2010	2.4106
560	0.237852	0.3568	0.156	0.1557	1.8681	0.2011	2.4124
560.2	0.237953	0.3569	0.156	0.1557	1.8681	0.2013	2.4142
560.4	0.238053	0.3571	0.156	0.1557	1.8681	0.2014	2.4160
560.6	0.238154	0.3572	0.156	0.1557	1.8681	0.2016	2.4178
560.8	0.238255	0.3574	0.156	0.1557	1.8681	0.2017	2.4196
561	0.238355	0.3575	0.156	0.1557	1.8681	0.2019	2.4214
561.2	0.238456	0.3577	0.156	0.1557	1.8681	0.2020	2.4232
561.4	0.238557	0.3578	0.156	0.1557	1.8681	0.2022	2.4251
561.6	0.238658	0.3580	0.156	0.1557	1.8681	0.2023	2.4269
561.8	0.238759	0.3581	0.156	0.1557	1.8681	0.2025	2.4287
562	0.238859	0.3583	0.156	0.1557	1.8681	0.2026	2.4305
562.2	0.23896	0.3584	0.156	0.1557	1.8681	0.2028	2.4323
562.4	0.239061	0.3586	0.156	0.1557	1.8681	0.2029	2.4341

562.6	0.239162	0.3587	0.156	0.1557	1.8681	0.2031	2.4360
562.8	0.239263	0.3589	0.156	0.1557	1.8681	0.2032	2.4378
563	0.239364	0.3590	0.156	0.1557	1.8681	0.2034	2.4396
563.2	0.239465	0.3592	0.156	0.1557	1.8681	0.2035	2.4414
563.4	0.239565	0.3593	0.156	0.1557	1.8681	0.2037	2.4432
563.6	0.239666	0.3595	0.156	0.1557	1.8681	0.2038	2.4450
563.8	0.239767	0.3597	0.156	0.1557	1.8681	0.2040	2.4468
564	0.239868	0.3598	0.156	0.1557	1.8681	0.2041	2.4487
564.2	0.239969	0.3600	0.156	0.1557	1.8681	0.2043	2.4505
564.4	0.24007	0.3601	0.156	0.1557	1.8681	0.2044	2.4523
564.6	0.240171	0.3603	0.156	0.1557	1.8681	0.2046	2.4541
564.8	0.240272	0.3604	0.156	0.1557	1.8681	0.2047	2.4559
565	0.240373	0.3606	0.156	0.1557	1.8681	0.2049	2.4578
565.2	0.240474	0.3607	0.156	0.1557	1.8681	0.2050	2.4596
565.4	0.240576	0.3609	0.156	0.1557	1.8681	0.2052	2.4614
565.6	0.240677	0.3610	0.156	0.1557	1.8681	0.2053	2.4632
565.8	0.240778	0.3612	0.156	0.1557	1.8681	0.2055	2.4650
566	0.240879	0.3613	0.156	0.1557	1.8681	0.2056	2.4669
566.2	0.24098	0.3615	0.156	0.1557	1.8681	0.2058	2.4687
566.4	0.241081	0.3616	0.156	0.1557	1.8681	0.2060	2.4705
566.6	0.241182	0.3618	0.156	0.1557	1.8681	0.2061	2.4723
566.8	0.241284	0.3619	0.156	0.1557	1.8681	0.2063	2.4741
567	0.241385	0.3621	0.156	0.1557	1.8681	0.2064	2.4760
567.2	0.241486	0.3622	0.156	0.1557	1.8681	0.2066	2.4778
567.4	0.241587	0.3624	0.156	0.1557	1.8681	0.2067	2.4796
567.6	0.241688	0.3625	0.156	0.1557	1.8681	0.2069	2.4814
567.8	0.24179	0.3627	0.156	0.1557	1.8681	0.2070	2.4832
568	0.241891	0.3628	0.156	0.1557	1.8681	0.2072	2.4851
568.2	0.241992	0.3630	0.156	0.1557	1.8681	0.2073	2.4869
568.4	0.242094	0.3631	0.156	0.1557	1.8681	0.2075	2.4887
568.6	0.242195	0.3633	0.156	0.1557	1.8681	0.2076	2.4905
568.8	0.242296	0.3634	0.156	0.1557	1.8681	0.2078	2.4924
569	0.242398	0.3636	0.156	0.1557	1.8681	0.2079	2.4942
569.2	0.242499	0.3637	0.156	0.1557	1.8681	0.2081	2.4960
569.4	0.242601	0.3639	0.156	0.1557	1.8681	0.2082	2.4978
569.6	0.242702	0.3641	0.156	0.1557	1.8681	0.2084	2.4997
569.8	0.242803	0.3642	0.156	0.1557	1.8681	0.2085	2.5015
570	0.242905	0.3644	0.156	0.1557	1.8681	0.2087	2.5033
570.2	0.243006	0.3645	0.156	0.1557	1.8681	0.2088	2.5051
570.4	0.243108	0.3647	0.156	0.1557	1.8681	0.2090	2.5070
570.6	0.243209	0.3648	0.156	0.1557	1.8681	0.2091	2.5088
570.8	0.243311	0.3650	0.156	0.1557	1.8681	0.2093	2.5106
571	0.243412	0.3651	0.156	0.1557	1.8681	0.2094	2.5125
571.2	0.243514	0.3653	0.156	0.1557	1.8681	0.2096	2.5143
571.4	0.243616	0.3654	0.156	0.1557	1.8681	0.2098	2.5161
571.6	0.243717	0.3656	0.156	0.1557	1.8681	0.2099	2.5179
571.8	0.243819	0.3657	0.156	0.1557	1.8681	0.2101	2.5198

572	0.24392	0.3659	0.156	0.1557	1.8681	0.2102	2.5216
572.2	0.244022	0.3660	0.156	0.1557	1.8681	0.2104	2.5234
572.4	0.244124	0.3662	0.156	0.1557	1.8681	0.2105	2.5253
572.6	0.244225	0.3663	0.156	0.1557	1.8681	0.2107	2.5271
572.8	0.244327	0.3665	0.156	0.1557	1.8681	0.2108	2.5289
573	0.244429	0.3666	0.156	0.1557	1.8681	0.2110	2.5307
573.2	0.24453	0.3668	0.156	0.1557	1.8681	0.2111	2.5326
573.4	0.244632	0.3669	0.156	0.1557	1.8681	0.2113	2.5344
573.6	0.244734	0.3671	0.156	0.1557	1.8681	0.2114	2.5362
573.8	0.244836	0.3673	0.156	0.1557	1.8681	0.2116	2.5381
574	0.244937	0.3674	0.156	0.1557	1.8681	0.2117	2.5399
574.2	0.245039	0.3676	0.156	0.1557	1.8681	0.2119	2.5417
574.4	0.245141	0.3677	0.156	0.1557	1.8681	0.2120	2.5436
574.6	0.245243	0.3679	0.156	0.1557	1.8681	0.2122	2.5454
574.8	0.245345	0.3680	0.156	0.1557	1.8681	0.2123	2.5472
575	0.245447	0.3682	0.156	0.1557	1.8681	0.2125	2.5491
575.2	0.245549	0.3683	0.156	0.1557	1.8681	0.2127	2.5509
575.4	0.24565	0.3685	0.156	0.1557	1.8681	0.2128	2.5527
575.6	0.245752	0.3686	0.156	0.1557	1.8681	0.2130	2.5546
575.8	0.245854	0.3688	0.156	0.1557	1.8681	0.2131	2.5564
576	0.245956	0.3689	0.156	0.1557	1.8681	0.2133	2.5582
576.2	0.246058	0.3691	0.156	0.1557	1.8681	0.2134	2.5601
576.4	0.24616	0.3692	0.156	0.1557	1.8681	0.2136	2.5619
576.6	0.246262	0.3694	0.156	0.1557	1.8681	0.2137	2.5637
576.8	0.246364	0.3695	0.156	0.1557	1.8681	0.2139	2.5656
577	0.246466	0.3697	0.156	0.1557	1.8681	0.2140	2.5674
577.2	0.246568	0.3699	0.156	0.1557	1.8681	0.2142	2.5693
577.4	0.24667	0.3700	0.156	0.1557	1.8681	0.2143	2.5711
577.6	0.246772	0.3702	0.156	0.1557	1.8681	0.2145	2.5729
577.8	0.246875	0.3703	0.156	0.1557	1.8681	0.2146	2.5748
578	0.246977	0.3705	0.156	0.1557	1.8681	0.2148	2.5766
578.2	0.247079	0.3706	0.156	0.1557	1.8681	0.2149	2.5784
578.4	0.247181	0.3708	0.156	0.1557	1.8681	0.2151	2.5803
578.6	0.247283	0.3709	0.156	0.1557	1.8681	0.2153	2.5821
578.8	0.247385	0.3711	0.156	0.1557	1.8681	0.2154	2.5840
579	0.247487	0.3712	0.156	0.1557	1.8681	0.2156	2.5858
579.2	0.24759	0.3714	0.156	0.1557	1.8681	0.2157	2.5876
579.4	0.247692	0.3715	0.156	0.1557	1.8681	0.2159	2.5895
579.6	0.247794	0.3717	0.156	0.1557	1.8681	0.2160	2.5913
579.8	0.247896	0.3718	0.156	0.1557	1.8681	0.2162	2.5932
580	0.247999	0.3720	0.156	0.1557	1.8681	0.2163	2.5950
580.2	0.248101	0.3722	0.156	0.1557	1.8681	0.2165	2.5968
580.4	0.248203	0.3723	0.156	0.1557	1.8681	0.2166	2.5987
580.6	0.248306	0.3725	0.156	0.1557	1.8681	0.2168	2.6005
580.8	0.248408	0.3726	0.156	0.1557	1.8681	0.2169	2.6024
581	0.24851	0.3728	0.156	0.1557	1.8681	0.2171	2.6042
581.2	0.248613	0.3729	0.156	0.1557	1.8681	0.2172	2.6061

581.4	0.248715	0.3731	0.156	0.1557	1.8681	0.2174	2.6079
581.6	0.248818	0.3732	0.156	0.1557	1.8681	0.2176	2.6097
581.8	0.24892	0.3734	0.156	0.1557	1.8681	0.2177	2.6116
582	0.249023	0.3735	0.156	0.1557	1.8681	0.2179	2.6134
582.2	0.249125	0.3737	0.156	0.1557	1.8681	0.2180	2.6153
582.4	0.249227	0.3738	0.156	0.1557	1.8681	0.2182	2.6171
582.6	0.24933	0.3740	0.156	0.1557	1.8681	0.2183	2.6190
582.8	0.249433	0.3741	0.156	0.1557	1.8681	0.2185	2.6208
583	0.249535	0.3743	0.156	0.1557	1.8681	0.2186	2.6227
583.2	0.249638	0.3745	0.156	0.1557	1.8681	0.2188	2.6245
583.4	0.24974	0.3746	0.156	0.1557	1.8681	0.2189	2.6263
583.6	0.249843	0.3748	0.156	0.1557	1.8681	0.2191	2.6282
583.8	0.249945	0.3749	0.156	0.1557	1.8681	0.2192	2.6300
584	0.250048	0.3751	0.156	0.1557	1.8681	0.2194	2.6319
584.2	0.250151	0.3752	0.156	0.1557	1.8681	0.2196	2.6337
584.4	0.250253	0.3754	0.156	0.1557	1.8681	0.2197	2.6356
584.6	0.250356	0.3755	0.156	0.1557	1.8681	0.2199	2.6374
584.8	0.250459	0.3757	0.156	0.1557	1.8681	0.2200	2.6393
585	0.250561	0.3758	0.156	0.1557	1.8681	0.2202	2.6411
585.2	0.250664	0.3760	0.156	0.1557	1.8681	0.2203	2.6430
585.4	0.250767	0.3762	0.156	0.1557	1.8681	0.2205	2.6448
585.6	0.25087	0.3763	0.156	0.1557	1.8681	0.2206	2.6467
585.8	0.250972	0.3765	0.156	0.1557	1.8681	0.2208	2.6485
586	0.251075	0.3766	0.156	0.1557	1.8681	0.2209	2.6504
586.2	0.251178	0.3768	0.156	0.1557	1.8681	0.2211	2.6522
586.4	0.251281	0.3769	0.156	0.1557	1.8681	0.2212	2.6541
586.6	0.251384	0.3771	0.156	0.1557	1.8681	0.2214	2.6559
586.8	0.251487	0.3772	0.156	0.1557	1.8681	0.2216	2.6578
587	0.251589	0.3774	0.156	0.1557	1.8681	0.2217	2.6596
587.2	0.251692	0.3775	0.156	0.1557	1.8681	0.2219	2.6615
587.4	0.251795	0.3777	0.156	0.1557	1.8681	0.2220	2.6633
587.6	0.251898	0.3778	0.156	0.1557	1.8681	0.2222	2.6652
587.8	0.252001	0.3780	0.156	0.1557	1.8681	0.2223	2.6670
588	0.252104	0.3782	0.156	0.1557	1.8681	0.2225	2.6689
588.2	0.252207	0.3783	0.156	0.1557	1.8681	0.2226	2.6707
588.4	0.25231	0.3785	0.156	0.1557	1.8681	0.2228	2.6726
588.6	0.252413	0.3786	0.156	0.1557	1.8681	0.2229	2.6745
588.8	0.252516	0.3788	0.156	0.1557	1.8681	0.2231	2.6763
589	0.252619	0.3789	0.156	0.1557	1.8681	0.2233	2.6782
589.2	0.252722	0.3791	0.156	0.1557	1.8681	0.2234	2.6800
589.4	0.252825	0.3792	0.156	0.1557	1.8681	0.2236	2.6819
589.6	0.252928	0.3794	0.156	0.1557	1.8681	0.2237	2.6837
589.8	0.253031	0.3795	0.156	0.1557	1.8681	0.2239	2.6856
590	0.253135	0.3797	0.156	0.1557	1.8681	0.2240	2.6874
590.2	0.253238	0.3799	0.156	0.1557	1.8681	0.2242	2.6893
590.4	0.253341	0.3800	0.156	0.1557	1.8681	0.2243	2.6912
590.6	0.253444	0.3802	0.156	0.1557	1.8681	0.2245	2.6930

590.8	0.253547	0.3803	0.156	0.1557	1.8681	0.2246	2.6949
591	0.253651	0.3805	0.156	0.1557	1.8681	0.2248	2.6967
591.2	0.253754	0.3806	0.156	0.1557	1.8681	0.2250	2.6986
591.4	0.253857	0.3808	0.156	0.1557	1.8681	0.2251	2.7004
591.6	0.25396	0.3809	0.156	0.1557	1.8681	0.2253	2.7023
591.8	0.254064	0.3811	0.156	0.1557	1.8681	0.2254	2.7042
592	0.254167	0.3813	0.156	0.1557	1.8681	0.2256	2.7060
592.2	0.25427	0.3814	0.156	0.1557	1.8681	0.2257	2.7079
592.4	0.254374	0.3816	0.156	0.1557	1.8681	0.2259	2.7097
592.6	0.254477	0.3817	0.156	0.1557	1.8681	0.2260	2.7116
592.8	0.25458	0.3819	0.156	0.1557	1.8681	0.2262	2.7135
593	0.254684	0.3820	0.156	0.1557	1.8681	0.2264	2.7153
593.2	0.254787	0.3822	0.156	0.1557	1.8681	0.2265	2.7172
593.4	0.254891	0.3823	0.156	0.1557	1.8681	0.2267	2.7190
593.6	0.254994	0.3825	0.156	0.1557	1.8681	0.2268	2.7209
593.8	0.255098	0.3826	0.156	0.1557	1.8681	0.2270	2.7228
594	0.255201	0.3828	0.156	0.1557	1.8681	0.2271	2.7246
594.2	0.255305	0.3830	0.156	0.1557	1.8681	0.2273	2.7265
594.4	0.255408	0.3831	0.156	0.1557	1.8681	0.2274	2.7284
594.6	0.255512	0.3833	0.156	0.1557	1.8681	0.2276	2.7302
594.8	0.255615	0.3834	0.156	0.1557	1.8681	0.2278	2.7321
595	0.255719	0.3836	0.156	0.1557	1.8681	0.2279	2.7339
595.2	0.255822	0.3837	0.156	0.1557	1.8681	0.2281	2.7358
595.4	0.255926	0.3839	0.156	0.1557	1.8681	0.2282	2.7377
595.6	0.25603	0.3840	0.156	0.1557	1.8681	0.2284	2.7395
595.8	0.256133	0.3842	0.156	0.1557	1.8681	0.2285	2.7414
596	0.256237	0.3844	0.156	0.1557	1.8681	0.2287	2.7433
596.2	0.25634	0.3845	0.156	0.1557	1.8681	0.2288	2.7451
596.4	0.256444	0.3847	0.156	0.1557	1.8681	0.2290	2.7470
596.6	0.256548	0.3848	0.156	0.1557	1.8681	0.2292	2.7489
596.8	0.256652	0.3850	0.156	0.1557	1.8681	0.2293	2.7507
597	0.256755	0.3851	0.156	0.1557	1.8681	0.2295	2.7526
597.2	0.256859	0.3853	0.156	0.1557	1.8681	0.2296	2.7545
597.4	0.256963	0.3854	0.156	0.1557	1.8681	0.2298	2.7563
597.6	0.257067	0.3856	0.156	0.1557	1.8681	0.2299	2.7582
597.8	0.257171	0.3858	0.156	0.1557	1.8681	0.2301	2.7601
598	0.257274	0.3859	0.156	0.1557	1.8681	0.2302	2.7619
598.2	0.257378	0.3861	0.156	0.1557	1.8681	0.2304	2.7638
598.4	0.257482	0.3862	0.156	0.1557	1.8681	0.2306	2.7657
598.6	0.257586	0.3864	0.156	0.1557	1.8681	0.2307	2.7676
598.8	0.25769	0.3865	0.156	0.1557	1.8681	0.2309	2.7694
599	0.257794	0.3867	0.156	0.1557	1.8681	0.2310	2.7713
599.2	0.257898	0.3868	0.156	0.1557	1.8681	0.2312	2.7732
599.4	0.258002	0.3870	0.156	0.1557	1.8681	0.2313	2.7750
599.6	0.258106	0.3872	0.156	0.1557	1.8681	0.2315	2.7769
599.8	0.25821	0.3873	0.156	0.1557	1.8681	0.2316	2.7788
600	0.258314	0.3875	0.156	0.1557	1.8681	0.2318	2.7807

600.2	0.258418	0.3876	0.156	0.1557	1.8681	0.2320	2.7825
600.4	0.258522	0.3878	0.156	0.1557	1.8681	0.2321	2.7844
600.6	0.258626	0.3879	0.156	0.1557	1.8681	0.2323	2.7863
600.8	0.25873	0.3881	0.156	0.1557	1.8681	0.2324	2.7881
601	0.258834	0.3883	0.156	0.1557	1.8681	0.2326	2.7900
601.2	0.258938	0.3884	0.156	0.1557	1.8681	0.2327	2.7919
601.4	0.259042	0.3886	0.156	0.1557	1.8681	0.2329	2.7938
601.6	0.259146	0.3887	0.156	0.1557	1.8681	0.2330	2.7956
601.8	0.259251	0.3889	0.156	0.1557	1.8681	0.2332	2.7975
602	0.259355	0.3890	0.156	0.1557	1.8681	0.2334	2.7994
602.2	0.259459	0.3892	0.156	0.1557	1.8681	0.2335	2.8013
602.4	0.259563	0.3893	0.156	0.1557	1.8681	0.2337	2.8031
602.6	0.259667	0.3895	0.156	0.1557	1.8681	0.2338	2.8050
602.8	0.259772	0.3897	0.156	0.1557	1.8681	0.2340	2.8069
603	0.259876	0.3898	0.156	0.1557	1.8681	0.2341	2.8088
603.2	0.25998	0.3900	0.156	0.1557	1.8681	0.2343	2.8107
603.4	0.260085	0.3901	0.156	0.1557	1.8681	0.2345	2.8125
603.6	0.260189	0.3903	0.156	0.1557	1.8681	0.2346	2.8144
603.8	0.260293	0.3904	0.156	0.1557	1.8681	0.2348	2.8163
604	0.260398	0.3906	0.156	0.1557	1.8681	0.2349	2.8182
604.2	0.260502	0.3908	0.156	0.1557	1.8681	0.2351	2.8200
604.4	0.260606	0.3909	0.156	0.1557	1.8681	0.2352	2.8219
604.6	0.260711	0.3911	0.156	0.1557	1.8681	0.2354	2.8238
604.8	0.260815	0.3912	0.156	0.1557	1.8681	0.2356	2.8257
605	0.26092	0.3914	0.156	0.1557	1.8681	0.2357	2.8276
605.2	0.261024	0.3915	0.156	0.1557	1.8681	0.2359	2.8294
605.4	0.261129	0.3917	0.156	0.1557	1.8681	0.2360	2.8313
605.6	0.261233	0.3918	0.156	0.1557	1.8681	0.2362	2.8332
605.8	0.261338	0.3920	0.156	0.1557	1.8681	0.2363	2.8351
606	0.261442	0.3922	0.156	0.1557	1.8681	0.2365	2.8370
606.2	0.261547	0.3923	0.156	0.1557	1.8681	0.2366	2.8388
606.4	0.261651	0.3925	0.156	0.1557	1.8681	0.2368	2.8407
606.6	0.261756	0.3926	0.156	0.1557	1.8681	0.2370	2.8426
606.8	0.261861	0.3928	0.156	0.1557	1.8681	0.2371	2.8445
607	0.261965	0.3929	0.156	0.1557	1.8681	0.2373	2.8464
607.2	0.26207	0.3931	0.156	0.1557	1.8681	0.2374	2.8483
607.4	0.262175	0.3933	0.156	0.1557	1.8681	0.2376	2.8501
607.6	0.262279	0.3934	0.156	0.1557	1.8681	0.2377	2.8520
607.8	0.262384	0.3936	0.156	0.1557	1.8681	0.2379	2.8539
608	0.262489	0.3937	0.156	0.1557	1.8681	0.2381	2.8558
608.2	0.262593	0.3939	0.156	0.1557	1.8681	0.2382	2.8577
608.4	0.262698	0.3940	0.156	0.1557	1.8681	0.2384	2.8596
608.6	0.262803	0.3942	0.156	0.1557	1.8681	0.2385	2.8615
608.8	0.262908	0.3944	0.156	0.1557	1.8681	0.2387	2.8633
609	0.263013	0.3945	0.156	0.1557	1.8681	0.2388	2.8652
609.2	0.263117	0.3947	0.156	0.1557	1.8681	0.2390	2.8671
609.4	0.263222	0.3948	0.156	0.1557	1.8681	0.2392	2.8690

609.6	0.263327	0.3950	0.156	0.1557	1.8681	0.2393	2.8709
609.8	0.263432	0.3951	0.156	0.1557	1.8681	0.2395	2.8728
610	0.263537	0.3953	0.156	0.1557	1.8681	0.2396	2.8747
610.2	0.263642	0.3955	0.156	0.1557	1.8681	0.2398	2.8766
610.4	0.263747	0.3956	0.156	0.1557	1.8681	0.2399	2.8784
610.6	0.263852	0.3958	0.156	0.1557	1.8681	0.2401	2.8803
610.8	0.263957	0.3959	0.156	0.1557	1.8681	0.2403	2.8822
611	0.264062	0.3961	0.156	0.1557	1.8681	0.2404	2.8841
611.2	0.264167	0.3963	0.156	0.1557	1.8681	0.2406	2.8860
611.4	0.264272	0.3964	0.156	0.1557	1.8681	0.2407	2.8879
611.6	0.264377	0.3966	0.156	0.1557	1.8681	0.2409	2.8898
611.8	0.264482	0.3967	0.156	0.1557	1.8681	0.2411	2.8917
612	0.264587	0.3969	0.156	0.1557	1.8681	0.2412	2.8936
612.2	0.264692	0.3970	0.156	0.1557	1.8681	0.2414	2.8955
612.4	0.264797	0.3972	0.156	0.1557	1.8681	0.2415	2.8973
612.6	0.264902	0.3974	0.156	0.1557	1.8681	0.2417	2.8992
612.8	0.265008	0.3975	0.156	0.1557	1.8681	0.2418	2.9011
613	0.265113	0.3977	0.156	0.1557	1.8681	0.2420	2.9030
613.2	0.265218	0.3978	0.156	0.1557	1.8681	0.2422	2.9049
613.4	0.265323	0.3980	0.156	0.1557	1.8681	0.2423	2.9068
613.6	0.265428	0.3981	0.156	0.1557	1.8681	0.2425	2.9087
613.8	0.265534	0.3983	0.156	0.1557	1.8681	0.2426	2.9106
614	0.265639	0.3985	0.156	0.1557	1.8681	0.2428	2.9125
614.2	0.265744	0.3986	0.156	0.1557	1.8681	0.2429	2.9144
614.4	0.26585	0.3988	0.156	0.1557	1.8681	0.2431	2.9163
614.6	0.265955	0.3989	0.156	0.1557	1.8681	0.2433	2.9182
614.8	0.26606	0.3991	0.156	0.1557	1.8681	0.2434	2.9201
615	0.266166	0.3992	0.156	0.1557	1.8681	0.2436	2.9220
615.2	0.266271	0.3994	0.156	0.1557	1.8681	0.2437	2.9239
615.4	0.266376	0.3996	0.156	0.1557	1.8681	0.2439	2.9258
615.6	0.266482	0.3997	0.156	0.1557	1.8681	0.2441	2.9277
615.8	0.266587	0.3999	0.156	0.1557	1.8681	0.2442	2.9296
616	0.266693	0.4000	0.156	0.1557	1.8681	0.2444	2.9315
616.2	0.266798	0.4002	0.156	0.1557	1.8681	0.2445	2.9334
616.4	0.266904	0.4004	0.156	0.1557	1.8681	0.2447	2.9353
616.6	0.267009	0.4005	0.156	0.1557	1.8681	0.2448	2.9372
616.8	0.267115	0.4007	0.156	0.1557	1.8681	0.2450	2.9391
617	0.26722	0.4008	0.156	0.1557	1.8681	0.2452	2.9410
617.2	0.267326	0.4010	0.156	0.1557	1.8681	0.2453	2.9429
617.4	0.267431	0.4011	0.156	0.1557	1.8681	0.2455	2.9448
617.6	0.267537	0.4013	0.156	0.1557	1.8681	0.2456	2.9467
617.8	0.267643	0.4015	0.156	0.1557	1.8681	0.2458	2.9486
618	0.267748	0.4016	0.156	0.1557	1.8681	0.2460	2.9505
618.2	0.267854	0.4018	0.156	0.1557	1.8681	0.2461	2.9524
618.4	0.26796	0.4019	0.156	0.1557	1.8681	0.2463	2.9543
618.6	0.268065	0.4021	0.156	0.1557	1.8681	0.2464	2.9562
618.8	0.268171	0.4023	0.156	0.1557	1.8681	0.2466	2.9581

619	0.268277	0.4024	0.156	0.1557	1.8681	0.2467	2.9600
619.2	0.268383	0.4026	0.156	0.1557	1.8681	0.2469	2.9619
619.4	0.268488	0.4027	0.156	0.1557	1.8681	0.2471	2.9638
619.6	0.268594	0.4029	0.156	0.1557	1.8681	0.2472	2.9657
619.8	0.2687	0.4030	0.156	0.1557	1.8681	0.2474	2.9676
620	0.268806	0.4032	0.156	0.1557	1.8681	0.2475	2.9695
620.2	0.268912	0.4034	0.156	0.1557	1.8681	0.2477	2.9714
620.4	0.269017	0.4035	0.156	0.1557	1.8681	0.2479	2.9733
620.6	0.269123	0.4037	0.156	0.1557	1.8681	0.2480	2.9752
620.8	0.269229	0.4038	0.156	0.1557	1.8681	0.2482	2.9771
621	0.269335	0.4040	0.156	0.1557	1.8681	0.2483	2.9790
621.2	0.269441	0.4042	0.156	0.1557	1.8681	0.2485	2.9809
621.4	0.269547	0.4043	0.156	0.1557	1.8681	0.2486	2.9828
621.6	0.269653	0.4045	0.156	0.1557	1.8681	0.2488	2.9847
621.8	0.269759	0.4046	0.156	0.1557	1.8681	0.2490	2.9867
622	0.269865	0.4048	0.156	0.1557	1.8681	0.2491	2.9886
622.2	0.269971	0.4050	0.156	0.1557	1.8681	0.2493	2.9905
622.4	0.270077	0.4051	0.156	0.1557	1.8681	0.2494	2.9924
622.6	0.270183	0.4053	0.156	0.1557	1.8681	0.2496	2.9943
622.8	0.270289	0.4054	0.156	0.1557	1.8681	0.2498	2.9962
623	0.270395	0.4056	0.156	0.1557	1.8681	0.2499	2.9981
623.2	0.270502	0.4058	0.156	0.1557	1.8681	0.2501	3.0000
623.4	0.270608	0.4059	0.156	0.1557	1.8681	0.2502	3.0019
623.6	0.270714	0.4061	0.156	0.1557	1.8681	0.2504	3.0038
623.8	0.27082	0.4062	0.156	0.1557	1.8681	0.2506	3.0058
624	0.270926	0.4064	0.156	0.1557	1.8681	0.2507	3.0077
624.2	0.271033	0.4065	0.156	0.1557	1.8681	0.2509	3.0096
624.4	0.271139	0.4067	0.156	0.1557	1.8681	0.2510	3.0115
624.6	0.271245	0.4069	0.156	0.1557	1.8681	0.2512	3.0134
624.8	0.271351	0.4070	0.156	0.1557	1.8681	0.2514	3.0153
625	0.271458	0.4072	0.156	0.1557	1.8681	0.2515	3.0172
625.2	0.271564	0.4073	0.156	0.1557	1.8681	0.2517	3.0191
625.4	0.27167	0.4075	0.156	0.1557	1.8681	0.2518	3.0211
625.6	0.271777	0.4077	0.156	0.1557	1.8681	0.2520	3.0230
625.8	0.271883	0.4078	0.156	0.1557	1.8681	0.2522	3.0249
626	0.271989	0.4080	0.156	0.1557	1.8681	0.2523	3.0268
626.2	0.272096	0.4081	0.156	0.1557	1.8681	0.2525	3.0287
626.4	0.272202	0.4083	0.156	0.1557	1.8681	0.2526	3.0306
626.6	0.272309	0.4085	0.156	0.1557	1.8681	0.2528	3.0325
626.8	0.272415	0.4086	0.156	0.1557	1.8681	0.2530	3.0345
627	0.272522	0.4088	0.156	0.1557	1.8681	0.2531	3.0364
627.2	0.272628	0.4089	0.156	0.1557	1.8681	0.2533	3.0383
627.4	0.272735	0.4091	0.156	0.1557	1.8681	0.2534	3.0402
627.6	0.272841	0.4093	0.156	0.1557	1.8681	0.2536	3.0421
627.8	0.272948	0.4094	0.156	0.1557	1.8681	0.2538	3.0440
628	0.273054	0.4096	0.156	0.1557	1.8681	0.2539	3.0460
628.2	0.273161	0.4097	0.156	0.1557	1.8681	0.2541	3.0479

628.4	0.273268	0.4099	0.156	0.1557	1.8681	0.2542	3.0498
628.6	0.273374	0.4101	0.156	0.1557	1.8681	0.2544	3.0517
628.8	0.273481	0.4102	0.156	0.1557	1.8681	0.2546	3.0536
629	0.273588	0.4104	0.156	0.1557	1.8681	0.2547	3.0556
629.2	0.273694	0.4105	0.156	0.1557	1.8681	0.2549	3.0575
629.4	0.273801	0.4107	0.156	0.1557	1.8681	0.2550	3.0594
629.6	0.273908	0.4109	0.156	0.1557	1.8681	0.2552	3.0613
629.8	0.274015	0.4110	0.156	0.1557	1.8681	0.2554	3.0632
630	0.274121	0.4112	0.156	0.1557	1.8681	0.2555	3.0652
630.2	0.274228	0.4113	0.156	0.1557	1.8681	0.2557	3.0671
630.4	0.274335	0.4115	0.156	0.1557	1.8681	0.2558	3.0690
630.6	0.274442	0.4117	0.156	0.1557	1.8681	0.2560	3.0709
630.8	0.274549	0.4118	0.156	0.1557	1.8681	0.2562	3.0729
631	0.274656	0.4120	0.156	0.1557	1.8681	0.2563	3.0748
631.2	0.274762	0.4121	0.156	0.1557	1.8681	0.2565	3.0767
631.4	0.274869	0.4123	0.156	0.1557	1.8681	0.2566	3.0786
631.6	0.274976	0.4125	0.156	0.1557	1.8681	0.2568	3.0806
631.8	0.275083	0.4126	0.156	0.1557	1.8681	0.2570	3.0825
632	0.27519	0.4128	0.156	0.1557	1.8681	0.2571	3.0844
632.2	0.275297	0.4129	0.156	0.1557	1.8681	0.2573	3.0863
632.4	0.275404	0.4131	0.156	0.1557	1.8681	0.2574	3.0883
632.6	0.275511	0.4133	0.156	0.1557	1.8681	0.2576	3.0902
632.8	0.275618	0.4134	0.156	0.1557	1.8681	0.2578	3.0921
633	0.275725	0.4136	0.156	0.1557	1.8681	0.2579	3.0940
633.2	0.275832	0.4137	0.156	0.1557	1.8681	0.2581	3.0960
633.4	0.27594	0.4139	0.156	0.1557	1.8681	0.2582	3.0979
633.6	0.276047	0.4141	0.156	0.1557	1.8681	0.2584	3.0998
633.8	0.276154	0.4142	0.156	0.1557	1.8681	0.2586	3.1017
634	0.276261	0.4144	0.156	0.1557	1.8681	0.2587	3.1037
634.2	0.276368	0.4146	0.156	0.1557	1.8681	0.2589	3.1056
634.4	0.276475	0.4147	0.156	0.1557	1.8681	0.2590	3.1075
634.6	0.276583	0.4149	0.156	0.1557	1.8681	0.2592	3.1095
634.8	0.27669	0.4150	0.156	0.1557	1.8681	0.2594	3.1114
635	0.276797	0.4152	0.156	0.1557	1.8681	0.2595	3.1133
635.2	0.276904	0.4154	0.156	0.1557	1.8681	0.2597	3.1153
635.4	0.277012	0.4155	0.156	0.1557	1.8681	0.2598	3.1172
635.6	0.277119	0.4157	0.156	0.1557	1.8681	0.2600	3.1191
635.8	0.277226	0.4158	0.156	0.1557	1.8681	0.2602	3.1211
636	0.277334	0.4160	0.156	0.1557	1.8681	0.2603	3.1230
636.2	0.277441	0.4162	0.156	0.1557	1.8681	0.2605	3.1249
636.4	0.277548	0.4163	0.156	0.1557	1.8681	0.2607	3.1269
636.6	0.277656	0.4165	0.156	0.1557	1.8681	0.2608	3.1288
636.8	0.277763	0.4166	0.156	0.1557	1.8681	0.2610	3.1307
637	0.277871	0.4168	0.156	0.1557	1.8681	0.2611	3.1327
637.2	0.277978	0.4170	0.156	0.1557	1.8681	0.2613	3.1346
637.4	0.278086	0.4171	0.156	0.1557	1.8681	0.2615	3.1365
637.6	0.278193	0.4173	0.156	0.1557	1.8681	0.2616	3.1385

637.8	0.278301	0.4175	0.156	0.1557	1.8681	0.2618	3.1404
638	0.278408	0.4176	0.156	0.1557	1.8681	0.2619	3.1423
638.2	0.278516	0.4178	0.156	0.1557	1.8681	0.2621	3.1443
638.4	0.278624	0.4179	0.156	0.1557	1.8681	0.2623	3.1462
638.6	0.278731	0.4181	0.156	0.1557	1.8681	0.2624	3.1481
638.8	0.278839	0.4183	0.156	0.1557	1.8681	0.2626	3.1501
639	0.278946	0.4184	0.156	0.1557	1.8681	0.2627	3.1520
639.2	0.279054	0.4186	0.156	0.1557	1.8681	0.2629	3.1539
639.4	0.279162	0.4187	0.156	0.1557	1.8681	0.2631	3.1559
639.6	0.27927	0.4189	0.156	0.1557	1.8681	0.2632	3.1578
639.8	0.279377	0.4191	0.156	0.1557	1.8681	0.2634	3.1598
640	0.279485	0.4192	0.156	0.1557	1.8681	0.2636	3.1617
640.2	0.279593	0.4194	0.156	0.1557	1.8681	0.2637	3.1636
640.4	0.279701	0.4196	0.156	0.1557	1.8681	0.2639	3.1656
640.6	0.279808	0.4197	0.156	0.1557	1.8681	0.2640	3.1675
640.8	0.279916	0.4199	0.156	0.1557	1.8681	0.2642	3.1695
641	0.280024	0.4200	0.156	0.1557	1.8681	0.2644	3.1714
641.2	0.280132	0.4202	0.156	0.1557	1.8681	0.2645	3.1733
641.4	0.28024	0.4204	0.156	0.1557	1.8681	0.2647	3.1753
641.6	0.280348	0.4205	0.156	0.1557	1.8681	0.2649	3.1772
641.8	0.280456	0.4207	0.156	0.1557	1.8681	0.2650	3.1792
642	0.280564	0.4208	0.156	0.1557	1.8681	0.2652	3.1811
642.2	0.280672	0.4210	0.156	0.1557	1.8681	0.2653	3.1831
642.4	0.28078	0.4212	0.156	0.1557	1.8681	0.2655	3.1850
642.6	0.280888	0.4213	0.156	0.1557	1.8681	0.2657	3.1869
642.8	0.280996	0.4215	0.156	0.1557	1.8681	0.2658	3.1889
643	0.281104	0.4217	0.156	0.1557	1.8681	0.2660	3.1908
643.2	0.281212	0.4218	0.156	0.1557	1.8681	0.2661	3.1928
643.4	0.28132	0.4220	0.156	0.1557	1.8681	0.2663	3.1947
643.6	0.281428	0.4221	0.156	0.1557	1.8681	0.2665	3.1967
643.8	0.281536	0.4223	0.156	0.1557	1.8681	0.2666	3.1986
644	0.281644	0.4225	0.156	0.1557	1.8681	0.2668	3.2006
644.2	0.281752	0.4226	0.156	0.1557	1.8681	0.2670	3.2025
644.4	0.281861	0.4228	0.156	0.1557	1.8681	0.2671	3.2045
644.6	0.281969	0.4230	0.156	0.1557	1.8681	0.2673	3.2064
644.8	0.282077	0.4231	0.156	0.1557	1.8681	0.2674	3.2084
645	0.282185	0.4233	0.156	0.1557	1.8681	0.2676	3.2103
645.2	0.282294	0.4234	0.156	0.1557	1.8681	0.2678	3.2123
645.4	0.282402	0.4236	0.156	0.1557	1.8681	0.2679	3.2142
645.6	0.28251	0.4238	0.156	0.1557	1.8681	0.2681	3.2162
645.8	0.282618	0.4239	0.156	0.1557	1.8681	0.2683	3.2181
646	0.282727	0.4241	0.156	0.1557	1.8681	0.2684	3.2201
646.2	0.282835	0.4243	0.156	0.1557	1.8681	0.2686	3.2220
646.4	0.282944	0.4244	0.156	0.1557	1.8681	0.2687	3.2240
646.6	0.283052	0.4246	0.156	0.1557	1.8681	0.2689	3.2259
646.8	0.28316	0.4247	0.156	0.1557	1.8681	0.2691	3.2279
647	0.283269	0.4249	0.156	0.1557	1.8681	0.2692	3.2298

647.2	0.283377	0.4251	0.156	0.1557	1.8681	0.2694	3.2318
647.4	0.283486	0.4252	0.156	0.1557	1.8681	0.2696	3.2337
647.6	0.283594	0.4254	0.156	0.1557	1.8681	0.2697	3.2357
647.8	0.283703	0.4256	0.156	0.1557	1.8681	0.2699	3.2376
648	0.283811	0.4257	0.156	0.1557	1.8681	0.2700	3.2396
648.2	0.28392	0.4259	0.156	0.1557	1.8681	0.2702	3.2415
648.4	0.284029	0.4260	0.156	0.1557	1.8681	0.2704	3.2435
648.6	0.284137	0.4262	0.156	0.1557	1.8681	0.2705	3.2454
648.8	0.284246	0.4264	0.156	0.1557	1.8681	0.2707	3.2474
649	0.284355	0.4265	0.156	0.1557	1.8681	0.2709	3.2493
649.2	0.284463	0.4267	0.156	0.1557	1.8681	0.2710	3.2513
649.4	0.284572	0.4269	0.156	0.1557	1.8681	0.2712	3.2533
649.6	0.284681	0.4270	0.156	0.1557	1.8681	0.2713	3.2552
649.8	0.284789	0.4272	0.156	0.1557	1.8681	0.2715	3.2572
650	0.284898	0.4273	0.156	0.1557	1.8681	0.2717	3.2591
650.2	0.285007	0.4275	0.156	0.1557	1.8681	0.2718	3.2611
650.4	0.285116	0.4277	0.156	0.1557	1.8681	0.2720	3.2630
650.6	0.285225	0.4278	0.156	0.1557	1.8681	0.2722	3.2650
650.8	0.285333	0.4280	0.156	0.1557	1.8681	0.2723	3.2670
651	0.285442	0.4282	0.156	0.1557	1.8681	0.2725	3.2689
651.2	0.285551	0.4283	0.156	0.1557	1.8681	0.2727	3.2709
651.4	0.28566	0.4285	0.156	0.1557	1.8681	0.2728	3.2728
651.6	0.285769	0.4287	0.156	0.1557	1.8681	0.2730	3.2748
651.8	0.285878	0.4288	0.156	0.1557	1.8681	0.2731	3.2768
652	0.285987	0.4290	0.156	0.1557	1.8681	0.2733	3.2787
652.2	0.286096	0.4291	0.156	0.1557	1.8681	0.2735	3.2807
652.4	0.286205	0.4293	0.156	0.1557	1.8681	0.2736	3.2826
652.6	0.286314	0.4295	0.156	0.1557	1.8681	0.2738	3.2846
652.8	0.286423	0.4296	0.156	0.1557	1.8681	0.2740	3.2866
653	0.286532	0.4298	0.156	0.1557	1.8681	0.2741	3.2885
653.2	0.286641	0.4300	0.156	0.1557	1.8681	0.2743	3.2905
653.4	0.28675	0.4301	0.156	0.1557	1.8681	0.2745	3.2925
653.6	0.286859	0.4303	0.156	0.1557	1.8681	0.2746	3.2944
653.8	0.286968	0.4305	0.156	0.1557	1.8681	0.2748	3.2964
654	0.287078	0.4306	0.156	0.1557	1.8681	0.2749	3.2984
654.2	0.287187	0.4308	0.156	0.1557	1.8681	0.2751	3.3003
654.4	0.287296	0.4309	0.156	0.1557	1.8681	0.2753	3.3023
654.6	0.287405	0.4311	0.156	0.1557	1.8681	0.2754	3.3043
654.8	0.287514	0.4313	0.156	0.1557	1.8681	0.2756	3.3062
655	0.287624	0.4314	0.156	0.1557	1.8681	0.2758	3.3082
655.2	0.287733	0.4316	0.156	0.1557	1.8681	0.2759	3.3102
655.4	0.287842	0.4318	0.156	0.1557	1.8681	0.2761	3.3121
655.6	0.287952	0.4319	0.156	0.1557	1.8681	0.2763	3.3141
655.8	0.288061	0.4321	0.156	0.1557	1.8681	0.2764	3.3161
656	0.28817	0.4323	0.156	0.1557	1.8681	0.2766	3.3180
656.2	0.28828	0.4324	0.156	0.1557	1.8681	0.2767	3.3200
656.4	0.288389	0.4326	0.156	0.1557	1.8681	0.2769	3.3220

656.6	0.288499	0.4327	0.156	0.1557	1.8681	0.2771	3.3239
656.8	0.288608	0.4329	0.156	0.1557	1.8681	0.2772	3.3259
657	0.288717	0.4331	0.156	0.1557	1.8681	0.2774	3.3279
657.2	0.288827	0.4332	0.156	0.1557	1.8681	0.2776	3.3298
657.4	0.288937	0.4334	0.156	0.1557	1.8681	0.2777	3.3318
657.6	0.289046	0.4336	0.156	0.1557	1.8681	0.2779	3.3338
657.8	0.289156	0.4337	0.156	0.1557	1.8681	0.2781	3.3358
658	0.289265	0.4339	0.156	0.1557	1.8681	0.2782	3.3377
658.2	0.289375	0.4341	0.156	0.1557	1.8681	0.2784	3.3397
658.4	0.289484	0.4342	0.156	0.1557	1.8681	0.2786	3.3417
658.6	0.289594	0.4344	0.156	0.1557	1.8681	0.2787	3.3437
658.8	0.289704	0.4346	0.156	0.1557	1.8681	0.2789	3.3456
659	0.289813	0.4347	0.156	0.1557	1.8681	0.2790	3.3476
659.2	0.289923	0.4349	0.156	0.1557	1.8681	0.2792	3.3496
659.4	0.290033	0.4350	0.156	0.1557	1.8681	0.2794	3.3515
659.6	0.290143	0.4352	0.156	0.1557	1.8681	0.2795	3.3535
659.8	0.290252	0.4354	0.156	0.1557	1.8681	0.2797	3.3555
660	0.290362	0.4355	0.156	0.1557	1.8681	0.2799	3.3575
660.2	0.290472	0.4357	0.156	0.1557	1.8681	0.2800	3.3595
660.4	0.290582	0.4359	0.156	0.1557	1.8681	0.2802	3.3614
660.6	0.290692	0.4360	0.156	0.1557	1.8681	0.2804	3.3634
660.8	0.290802	0.4362	0.156	0.1557	1.8681	0.2805	3.3654
661	0.290911	0.4364	0.156	0.1557	1.8681	0.2807	3.3674
661.2	0.291021	0.4365	0.156	0.1557	1.8681	0.2809	3.3693
661.4	0.291131	0.4367	0.156	0.1557	1.8681	0.2810	3.3713
661.6	0.291241	0.4369	0.156	0.1557	1.8681	0.2812	3.3733
661.8	0.291351	0.4370	0.156	0.1557	1.8681	0.2814	3.3753
662	0.291461	0.4372	0.156	0.1557	1.8681	0.2815	3.3773
662.2	0.291571	0.4374	0.156	0.1557	1.8681	0.2817	3.3792
662.4	0.291681	0.4375	0.156	0.1557	1.8681	0.2819	3.3812
662.6	0.291791	0.4377	0.156	0.1557	1.8681	0.2820	3.3832
662.8	0.291901	0.4379	0.156	0.1557	1.8681	0.2822	3.3852
663	0.292012	0.4380	0.156	0.1557	1.8681	0.2823	3.3872
663.2	0.292122	0.4382	0.156	0.1557	1.8681	0.2825	3.3891
663.4	0.292232	0.4383	0.156	0.1557	1.8681	0.2827	3.3911
663.6	0.292342	0.4385	0.156	0.1557	1.8681	0.2828	3.3931
663.8	0.292452	0.4387	0.156	0.1557	1.8681	0.2830	3.3951
664	0.292562	0.4388	0.156	0.1557	1.8681	0.2832	3.3971
664.2	0.292673	0.4390	0.156	0.1557	1.8681	0.2833	3.3991
664.4	0.292783	0.4392	0.156	0.1557	1.8681	0.2835	3.4010
664.6	0.292893	0.4393	0.156	0.1557	1.8681	0.2837	3.4030
664.8	0.293003	0.4395	0.156	0.1557	1.8681	0.2838	3.4050
665	0.293114	0.4397	0.156	0.1557	1.8681	0.2840	3.4070
665.2	0.293224	0.4398	0.156	0.1557	1.8681	0.2842	3.4090
665.4	0.293334	0.4400	0.156	0.1557	1.8681	0.2843	3.4110
665.6	0.293445	0.4402	0.156	0.1557	1.8681	0.2845	3.4130
665.8	0.293555	0.4403	0.156	0.1557	1.8681	0.2847	3.4149

666	0.293666	0.4405	0.156	0.1557	1.8681	0.2848	3.4169
666.2	0.293776	0.4407	0.156	0.1557	1.8681	0.2850	3.4189
666.4	0.293887	0.4408	0.156	0.1557	1.8681	0.2852	3.4209
666.6	0.293997	0.4410	0.156	0.1557	1.8681	0.2853	3.4229
666.8	0.294108	0.4412	0.156	0.1557	1.8681	0.2855	3.4249
667	0.294218	0.4413	0.156	0.1557	1.8681	0.2857	3.4269
667.2	0.294329	0.4415	0.156	0.1557	1.8681	0.2858	3.4289
667.4	0.294439	0.4417	0.156	0.1557	1.8681	0.2860	3.4309
667.6	0.29455	0.4418	0.156	0.1557	1.8681	0.2862	3.4328
667.8	0.29466	0.4420	0.156	0.1557	1.8681	0.2863	3.4348
668	0.294771	0.4422	0.156	0.1557	1.8681	0.2865	3.4368
668.2	0.294882	0.4423	0.156	0.1557	1.8681	0.2867	3.4388
668.4	0.294992	0.4425	0.156	0.1557	1.8681	0.2868	3.4408
668.6	0.295103	0.4427	0.156	0.1557	1.8681	0.2870	3.4428
668.8	0.295214	0.4428	0.156	0.1557	1.8681	0.2871	3.4448
669	0.295325	0.4430	0.156	0.1557	1.8681	0.2873	3.4468
669.2	0.295435	0.4432	0.156	0.1557	1.8681	0.2875	3.4488
669.4	0.295546	0.4433	0.156	0.1557	1.8681	0.2876	3.4508
669.6	0.295657	0.4435	0.156	0.1557	1.8681	0.2878	3.4528
669.8	0.295768	0.4437	0.156	0.1557	1.8681	0.2880	3.4548
670	0.295879	0.4438	0.156	0.1557	1.8681	0.2881	3.4568
670.2	0.29599	0.4440	0.156	0.1557	1.8681	0.2883	3.4588
670.4	0.2961	0.4442	0.156	0.1557	1.8681	0.2885	3.4608
670.6	0.296211	0.4443	0.156	0.1557	1.8681	0.2886	3.4628
670.8	0.296322	0.4445	0.156	0.1557	1.8681	0.2888	3.4647
671	0.296433	0.4446	0.156	0.1557	1.8681	0.2890	3.4667
671.2	0.296544	0.4448	0.156	0.1557	1.8681	0.2891	3.4687
671.4	0.296655	0.4450	0.156	0.1557	1.8681	0.2893	3.4707
671.6	0.296766	0.4451	0.156	0.1557	1.8681	0.2895	3.4727
671.8	0.296877	0.4453	0.156	0.1557	1.8681	0.2896	3.4747
672	0.296988	0.4455	0.156	0.1557	1.8681	0.2898	3.4767
672.2	0.297099	0.4456	0.156	0.1557	1.8681	0.2900	3.4787
672.4	0.297211	0.4458	0.156	0.1557	1.8681	0.2901	3.4807
672.6	0.297322	0.4460	0.156	0.1557	1.8681	0.2903	3.4827
672.8	0.297433	0.4461	0.156	0.1557	1.8681	0.2905	3.4847
673	0.297544	0.4463	0.156	0.1557	1.8681	0.2906	3.4867
673.2	0.297655	0.4465	0.156	0.1557	1.8681	0.2908	3.4887
673.4	0.297766	0.4466	0.156	0.1557	1.8681	0.2910	3.4907
673.6	0.297878	0.4468	0.156	0.1557	1.8681	0.2911	3.4927
673.8	0.297989	0.4470	0.156	0.1557	1.8681	0.2913	3.4947
674	0.2981	0.4472	0.156	0.1557	1.8681	0.2915	3.4967
674.2	0.298212	0.4473	0.156	0.1557	1.8681	0.2916	3.4988
674.4	0.298323	0.4475	0.156	0.1557	1.8681	0.2918	3.5008
674.6	0.298434	0.4477	0.156	0.1557	1.8681	0.2920	3.5028
674.8	0.298546	0.4478	0.156	0.1557	1.8681	0.2921	3.5048
675	0.298657	0.4480	0.156	0.1557	1.8681	0.2923	3.5068
675.2	0.298768	0.4482	0.156	0.1557	1.8681	0.2925	3.5088

675.4	0.29888	0.4483	0.156	0.1557	1.8681	0.2926	3.5108
675.6	0.298991	0.4485	0.156	0.1557	1.8681	0.2928	3.5128
675.8	0.299103	0.4487	0.156	0.1557	1.8681	0.2930	3.5148
676	0.299214	0.4488	0.156	0.1557	1.8681	0.2932	3.5168
676.2	0.299326	0.4490	0.156	0.1557	1.8681	0.2933	3.5188
676.4	0.299437	0.4492	0.156	0.1557	1.8681	0.2935	3.5208
676.6	0.299549	0.4493	0.156	0.1557	1.8681	0.2937	3.5228
676.8	0.299661	0.4495	0.156	0.1557	1.8681	0.2938	3.5248
677	0.299772	0.4497	0.156	0.1557	1.8681	0.2940	3.5268
677.2	0.299884	0.4498	0.156	0.1557	1.8681	0.2942	3.5288
677.4	0.299996	0.4500	0.156	0.1557	1.8681	0.2943	3.5309
677.6	0.300107	0.4502	0.156	0.1557	1.8681	0.2945	3.5329
677.8	0.300219	0.4503	0.156	0.1557	1.8681	0.2947	3.5349
678	0.300331	0.4505	0.156	0.1557	1.8681	0.2948	3.5369
678.2	0.300442	0.4507	0.156	0.1557	1.8681	0.2950	3.5389
678.4	0.300554	0.4508	0.156	0.1557	1.8681	0.2952	3.5409
678.6	0.300666	0.4510	0.156	0.1557	1.8681	0.2953	3.5429
678.8	0.300778	0.4512	0.156	0.1557	1.8681	0.2955	3.5449
679	0.30089	0.4513	0.156	0.1557	1.8681	0.2957	3.5470
679.2	0.301002	0.4515	0.156	0.1557	1.8681	0.2958	3.5490
679.4	0.301113	0.4517	0.156	0.1557	1.8681	0.2960	3.5510
679.6	0.301225	0.4518	0.156	0.1557	1.8681	0.2962	3.5530
679.8	0.301337	0.4520	0.156	0.1557	1.8681	0.2963	3.5550
680	0.301449	0.4522	0.156	0.1557	1.8681	0.2965	3.5570
680.2	0.301561	0.4523	0.156	0.1557	1.8681	0.2967	3.5590
680.4	0.301673	0.4525	0.156	0.1557	1.8681	0.2968	3.5611
680.6	0.301785	0.4527	0.156	0.1557	1.8681	0.2970	3.5631
680.8	0.301897	0.4528	0.156	0.1557	1.8681	0.2972	3.5651
681	0.302009	0.4530	0.156	0.1557	1.8681	0.2973	3.5671
681.2	0.302121	0.4532	0.156	0.1557	1.8681	0.2975	3.5691
681.4	0.302233	0.4534	0.156	0.1557	1.8681	0.2977	3.5711
681.6	0.302346	0.4535	0.156	0.1557	1.8681	0.2978	3.5732
681.8	0.302458	0.4537	0.156	0.1557	1.8681	0.2980	3.5752
682	0.30257	0.4539	0.156	0.1557	1.8681	0.2982	3.5772
682.2	0.302682	0.4540	0.156	0.1557	1.8681	0.2984	3.5792
682.4	0.302794	0.4542	0.156	0.1557	1.8681	0.2985	3.5812
682.6	0.302907	0.4544	0.156	0.1557	1.8681	0.2987	3.5833
682.8	0.303019	0.4545	0.156	0.1557	1.8681	0.2989	3.5853
683	0.303131	0.4547	0.156	0.1557	1.8681	0.2990	3.5873
683.2	0.303243	0.4549	0.156	0.1557	1.8681	0.2992	3.5893
683.4	0.303356	0.4550	0.156	0.1557	1.8681	0.2994	3.5913
683.6	0.303468	0.4552	0.156	0.1557	1.8681	0.2995	3.5934
683.8	0.303581	0.4554	0.156	0.1557	1.8681	0.2997	3.5954
684	0.303693	0.4555	0.156	0.1557	1.8681	0.2999	3.5974
684.2	0.303805	0.4557	0.156	0.1557	1.8681	0.3000	3.5994
684.4	0.303918	0.4559	0.156	0.1557	1.8681	0.3002	3.6015
684.6	0.30403	0.4560	0.156	0.1557	1.8681	0.3004	3.6035

684.8	0.304143	0.4562	0.156	0.1557	1.8681	0.3005	3.6055
685	0.304255	0.4564	0.156	0.1557	1.8681	0.3007	3.6075
685.2	0.304368	0.4566	0.156	0.1557	1.8681	0.3009	3.6096
685.4	0.30448	0.4567	0.156	0.1557	1.8681	0.3010	3.6116
685.6	0.304593	0.4569	0.156	0.1557	1.8681	0.3012	3.6136
685.8	0.304706	0.4571	0.156	0.1557	1.8681	0.3014	3.6156
686	0.304818	0.4572	0.156	0.1557	1.8681	0.3016	3.6177
686.2	0.304931	0.4574	0.156	0.1557	1.8681	0.3017	3.6197
686.4	0.305043	0.4576	0.156	0.1557	1.8681	0.3019	3.6217
686.6	0.305156	0.4577	0.156	0.1557	1.8681	0.3021	3.6237
686.8	0.305269	0.4579	0.156	0.1557	1.8681	0.3022	3.6258
687	0.305382	0.4581	0.156	0.1557	1.8681	0.3024	3.6278
687.2	0.305494	0.4582	0.156	0.1557	1.8681	0.3026	3.6298
687.4	0.305607	0.4584	0.156	0.1557	1.8681	0.3027	3.6319
687.6	0.30572	0.4586	0.156	0.1557	1.8681	0.3029	3.6339
687.8	0.305833	0.4587	0.156	0.1557	1.8681	0.3031	3.6359
688	0.305946	0.4589	0.156	0.1557	1.8681	0.3032	3.6380
688.2	0.306059	0.4591	0.156	0.1557	1.8681	0.3034	3.6400
688.4	0.306171	0.4593	0.156	0.1557	1.8681	0.3036	3.6420
688.6	0.306284	0.4594	0.156	0.1557	1.8681	0.3038	3.6440
688.8	0.306397	0.4596	0.156	0.1557	1.8681	0.3039	3.6461
689	0.30651	0.4598	0.156	0.1557	1.8681	0.3041	3.6481
689.2	0.306623	0.4599	0.156	0.1557	1.8681	0.3043	3.6501
689.4	0.306736	0.4601	0.156	0.1557	1.8681	0.3044	3.6522
689.6	0.306849	0.4603	0.156	0.1557	1.8681	0.3046	3.6542
689.8	0.306962	0.4604	0.156	0.1557	1.8681	0.3048	3.6563
690	0.307075	0.4606	0.156	0.1557	1.8681	0.3049	3.6583
690.2	0.307189	0.4608	0.156	0.1557	1.8681	0.3051	3.6603
690.4	0.307302	0.4610	0.156	0.1557	1.8681	0.3053	3.6624
690.6	0.307415	0.4611	0.156	0.1557	1.8681	0.3055	3.6644
690.8	0.307528	0.4613	0.156	0.1557	1.8681	0.3056	3.6664
691	0.307641	0.4615	0.156	0.1557	1.8681	0.3058	3.6685
691.2	0.307754	0.4616	0.156	0.1557	1.8681	0.3060	3.6705
691.4	0.307868	0.4618	0.156	0.1557	1.8681	0.3061	3.6725
691.6	0.307981	0.4620	0.156	0.1557	1.8681	0.3063	3.6746
691.8	0.308094	0.4621	0.156	0.1557	1.8681	0.3065	3.6766
692	0.308208	0.4623	0.156	0.1557	1.8681	0.3066	3.6787
692.2	0.308321	0.4625	0.156	0.1557	1.8681	0.3068	3.6807
692.4	0.308434	0.4627	0.156	0.1557	1.8681	0.3070	3.6827
692.6	0.308548	0.4628	0.156	0.1557	1.8681	0.3072	3.6848
692.8	0.308661	0.4630	0.156	0.1557	1.8681	0.3073	3.6868
693	0.308775	0.4632	0.156	0.1557	1.8681	0.3075	3.6889
693.2	0.308888	0.4633	0.156	0.1557	1.8681	0.3077	3.6909
693.4	0.309001	0.4635	0.156	0.1557	1.8681	0.3078	3.6929
693.6	0.309115	0.4637	0.156	0.1557	1.8681	0.3080	3.6950
693.8	0.309228	0.4638	0.156	0.1557	1.8681	0.3082	3.6970
694	0.309342	0.4640	0.156	0.1557	1.8681	0.3083	3.6991

694.2	0.309456	0.4642	0.156	0.1557	1.8681	0.3085	3.7011
694.4	0.309569	0.4644	0.156	0.1557	1.8681	0.3087	3.7032
694.6	0.309683	0.4645	0.156	0.1557	1.8681	0.3089	3.7052
694.8	0.309796	0.4647	0.156	0.1557	1.8681	0.3090	3.7073
695	0.30991	0.4649	0.156	0.1557	1.8681	0.3092	3.7093
695.2	0.310024	0.4650	0.156	0.1557	1.8681	0.3094	3.7113
695.4	0.310137	0.4652	0.156	0.1557	1.8681	0.3095	3.7134
695.6	0.310251	0.4654	0.156	0.1557	1.8681	0.3097	3.7154
695.8	0.310365	0.4655	0.156	0.1557	1.8681	0.3099	3.7175
696	0.310479	0.4657	0.156	0.1557	1.8681	0.3100	3.7195
696.2	0.310593	0.4659	0.156	0.1557	1.8681	0.3102	3.7216
696.4	0.310706	0.4661	0.156	0.1557	1.8681	0.3104	3.7236
696.6	0.31082	0.4662	0.156	0.1557	1.8681	0.3106	3.7257
696.8	0.310934	0.4664	0.156	0.1557	1.8681	0.3107	3.7277
697	0.311048	0.4666	0.156	0.1557	1.8681	0.3109	3.7298
697.2	0.311162	0.4667	0.156	0.1557	1.8681	0.3111	3.7318
697.4	0.311276	0.4669	0.156	0.1557	1.8681	0.3112	3.7339
697.6	0.31139	0.4671	0.156	0.1557	1.8681	0.3114	3.7359
697.8	0.311504	0.4673	0.156	0.1557	1.8681	0.3116	3.7380
698	0.311618	0.4674	0.156	0.1557	1.8681	0.3118	3.7400
698.2	0.311732	0.4676	0.156	0.1557	1.8681	0.3119	3.7421
698.4	0.311846	0.4678	0.156	0.1557	1.8681	0.3121	3.7441
698.6	0.31196	0.4679	0.156	0.1557	1.8681	0.3123	3.7462
698.8	0.312074	0.4681	0.156	0.1557	1.8681	0.3124	3.7483
699	0.312188	0.4683	0.156	0.1557	1.8681	0.3126	3.7503
699.2	0.312302	0.4685	0.156	0.1557	1.8681	0.3128	3.7524
699.4	0.312417	0.4686	0.156	0.1557	1.8681	0.3130	3.7544
699.6	0.312531	0.4688	0.156	0.1557	1.8681	0.3131	3.7565
699.8	0.312645	0.4690	0.156	0.1557	1.8681	0.3133	3.7585
700	0.312759	0.4691	0.156	0.1557	1.8681	0.3135	3.7606
700.2	0.312874	0.4693	0.156	0.1557	1.8681	0.3136	3.7626
700.4	0.312988	0.4695	0.156	0.1557	1.8681	0.3138	3.7647
700.6	0.313102	0.4697	0.156	0.1557	1.8681	0.3140	3.7668
700.8	0.313217	0.4698	0.156	0.1557	1.8681	0.3142	3.7688
701	0.313331	0.4700	0.156	0.1557	1.8681	0.3143	3.7709
701.2	0.313445	0.4702	0.156	0.1557	1.8681	0.3145	3.7729
701.4	0.31356	0.4703	0.156	0.1557	1.8681	0.3147	3.7750
701.6	0.313674	0.4705	0.156	0.1557	1.8681	0.3148	3.7770
701.8	0.313789	0.4707	0.156	0.1557	1.8681	0.3150	3.7791
702	0.313903	0.4709	0.156	0.1557	1.8681	0.3152	3.7812
702.2	0.314018	0.4710	0.156	0.1557	1.8681	0.3154	3.7832
702.4	0.314132	0.4712	0.156	0.1557	1.8681	0.3155	3.7853
702.6	0.314247	0.4714	0.156	0.1557	1.8681	0.3157	3.7874
702.8	0.314361	0.4715	0.156	0.1557	1.8681	0.3159	3.7894
703	0.314476	0.4717	0.156	0.1557	1.8681	0.3160	3.7915
703.2	0.314591	0.4719	0.156	0.1557	1.8681	0.3162	3.7935
703.4	0.314705	0.4721	0.156	0.1557	1.8681	0.3164	3.7956

703.6	0.31482	0.4722	0.156	0.1557	1.8681	0.3166	3.7977
703.8	0.314935	0.4724	0.156	0.1557	1.8681	0.3167	3.7997
704	0.315049	0.4726	0.156	0.1557	1.8681	0.3169	3.8018
704.2	0.315164	0.4727	0.156	0.1557	1.8681	0.3171	3.8039
704.4	0.315279	0.4729	0.156	0.1557	1.8681	0.3172	3.8059
704.6	0.315394	0.4731	0.156	0.1557	1.8681	0.3174	3.8080
704.8	0.315509	0.4733	0.156	0.1557	1.8681	0.3176	3.8101
705	0.315623	0.4734	0.156	0.1557	1.8681	0.3178	3.8121
705.2	0.315738	0.4736	0.156	0.1557	1.8681	0.3179	3.8142
705.4	0.315853	0.4738	0.156	0.1557	1.8681	0.3181	3.8163
705.6	0.315968	0.4740	0.156	0.1557	1.8681	0.3183	3.8183
705.8	0.316083	0.4741	0.156	0.1557	1.8681	0.3185	3.8204
706	0.316198	0.4743	0.156	0.1557	1.8681	0.3186	3.8225
706.2	0.316313	0.4745	0.156	0.1557	1.8681	0.3188	3.8245
706.4	0.316428	0.4746	0.156	0.1557	1.8681	0.3190	3.8266
706.6	0.316543	0.4748	0.156	0.1557	1.8681	0.3191	3.8287
706.8	0.316658	0.4750	0.156	0.1557	1.8681	0.3193	3.8308
707	0.316773	0.4752	0.156	0.1557	1.8681	0.3195	3.8328
707.2	0.316888	0.4753	0.156	0.1557	1.8681	0.3197	3.8349
707.4	0.317003	0.4755	0.156	0.1557	1.8681	0.3198	3.8370
707.6	0.317119	0.4757	0.156	0.1557	1.8681	0.3200	3.8390
707.8	0.317234	0.4759	0.156	0.1557	1.8681	0.3202	3.8411
708	0.317349	0.4760	0.156	0.1557	1.8681	0.3204	3.8432
708.2	0.317464	0.4762	0.156	0.1557	1.8681	0.3205	3.8453
708.4	0.31758	0.4764	0.156	0.1557	1.8681	0.3207	3.8473
708.6	0.317695	0.4765	0.156	0.1557	1.8681	0.3209	3.8494
708.8	0.31781	0.4767	0.156	0.1557	1.8681	0.3210	3.8515
709	0.317926	0.4769	0.156	0.1557	1.8681	0.3212	3.8536
709.2	0.318041	0.4771	0.156	0.1557	1.8681	0.3214	3.8556
709.4	0.318156	0.4772	0.156	0.1557	1.8681	0.3216	3.8577
709.6	0.318272	0.4774	0.156	0.1557	1.8681	0.3217	3.8598
709.8	0.318387	0.4776	0.156	0.1557	1.8681	0.3219	3.8619
710	0.318503	0.4778	0.156	0.1557	1.8681	0.3221	3.8640
710.2	0.318618	0.4779	0.156	0.1557	1.8681	0.3223	3.8660
710.4	0.318734	0.4781	0.156	0.1557	1.8681	0.3224	3.8681
710.6	0.318849	0.4783	0.156	0.1557	1.8681	0.3226	3.8702
710.8	0.318965	0.4784	0.156	0.1557	1.8681	0.3228	3.8723
711	0.31908	0.4786	0.156	0.1557	1.8681	0.3229	3.8743
711.2	0.319196	0.4788	0.156	0.1557	1.8681	0.3231	3.8764
711.4	0.319311	0.4790	0.156	0.1557	1.8681	0.3233	3.8785
711.6	0.319427	0.4791	0.156	0.1557	1.8681	0.3235	3.8806
711.8	0.319543	0.4793	0.156	0.1557	1.8681	0.3236	3.8827
712	0.319659	0.4795	0.156	0.1557	1.8681	0.3238	3.8848
712.2	0.319774	0.4797	0.156	0.1557	1.8681	0.3240	3.8868
712.4	0.31989	0.4798	0.156	0.1557	1.8681	0.3242	3.8889
712.6	0.320006	0.4800	0.156	0.1557	1.8681	0.3243	3.8910
712.8	0.320122	0.4802	0.156	0.1557	1.8681	0.3245	3.8931

713	0.320237	0.4804	0.156	0.1557	1.8681	0.3247	3.8952
713.2	0.320353	0.4805	0.156	0.1557	1.8681	0.3249	3.8973
713.4	0.320469	0.4807	0.156	0.1557	1.8681	0.3250	3.8993
713.6	0.320585	0.4809	0.156	0.1557	1.8681	0.3252	3.9014
713.8	0.320701	0.4811	0.156	0.1557	1.8681	0.3254	3.9035
714	0.320817	0.4812	0.156	0.1557	1.8681	0.3256	3.9056
714.2	0.320933	0.4814	0.156	0.1557	1.8681	0.3257	3.9077
714.4	0.321049	0.4816	0.156	0.1557	1.8681	0.3259	3.9098
714.6	0.321165	0.4817	0.156	0.1557	1.8681	0.3261	3.9119
714.8	0.321281	0.4819	0.156	0.1557	1.8681	0.3263	3.9140
715	0.321397	0.4821	0.156	0.1557	1.8681	0.3264	3.9160
715.2	0.321513	0.4823	0.156	0.1557	1.8681	0.3266	3.9181
715.4	0.321629	0.4824	0.156	0.1557	1.8681	0.3268	3.9202
715.6	0.321745	0.4826	0.156	0.1557	1.8681	0.3269	3.9223
715.8	0.321862	0.4828	0.156	0.1557	1.8681	0.3271	3.9244
716	0.321978	0.4830	0.156	0.1557	1.8681	0.3273	3.9265
716.2	0.322094	0.4831	0.156	0.1557	1.8681	0.3275	3.9286
716.4	0.32221	0.4833	0.156	0.1557	1.8681	0.3276	3.9307
716.6	0.322327	0.4835	0.156	0.1557	1.8681	0.3278	3.9328
716.8	0.322443	0.4837	0.156	0.1557	1.8681	0.3280	3.9349
717	0.322559	0.4838	0.156	0.1557	1.8681	0.3282	3.9370
717.2	0.322676	0.4840	0.156	0.1557	1.8681	0.3283	3.9391
717.4	0.322792	0.4842	0.156	0.1557	1.8681	0.3285	3.9412
717.6	0.322908	0.4844	0.156	0.1557	1.8681	0.3287	3.9432
717.8	0.323025	0.4845	0.156	0.1557	1.8681	0.3289	3.9453
718	0.323141	0.4847	0.156	0.1557	1.8681	0.3290	3.9474
718.2	0.323258	0.4849	0.156	0.1557	1.8681	0.3292	3.9495
718.4	0.323374	0.4851	0.156	0.1557	1.8681	0.3294	3.9516
718.6	0.323491	0.4852	0.156	0.1557	1.8681	0.3296	3.9537
718.8	0.323607	0.4854	0.156	0.1557	1.8681	0.3297	3.9558
719	0.323724	0.4856	0.156	0.1557	1.8681	0.3299	3.9579
719.2	0.323841	0.4858	0.156	0.1557	1.8681	0.3301	3.9600
719.4	0.323957	0.4859	0.156	0.1557	1.8681	0.3303	3.9621
719.6	0.324074	0.4861	0.156	0.1557	1.8681	0.3304	3.9642
719.8	0.324191	0.4863	0.156	0.1557	1.8681	0.3306	3.9663
720	0.324307	0.4865	0.156	0.1557	1.8681	0.3308	3.9684
720.2	0.324424	0.4866	0.156	0.1557	1.8681	0.3310	3.9705
720.4	0.324541	0.4868	0.156	0.1557	1.8681	0.3311	3.9726
720.6	0.324657	0.4870	0.156	0.1557	1.8681	0.3313	3.9747
720.8	0.324774	0.4872	0.156	0.1557	1.8681	0.3315	3.9768
721	0.324891	0.4873	0.156	0.1557	1.8681	0.3317	3.9789
721.2	0.325008	0.4875	0.156	0.1557	1.8681	0.3318	3.9810
721.4	0.325125	0.4877	0.156	0.1557	1.8681	0.3320	3.9831
721.6	0.325242	0.4879	0.156	0.1557	1.8681	0.3322	3.9852
721.8	0.325359	0.4880	0.156	0.1557	1.8681	0.3324	3.9873
722	0.325476	0.4882	0.156	0.1557	1.8681	0.3325	3.9895
722.2	0.325593	0.4884	0.156	0.1557	1.8681	0.3327	3.9916

722.4	0.32571	0.4886	0.156	0.1557	1.8681	0.3329	3.9937
722.6	0.325827	0.4887	0.156	0.1557	1.8681	0.3331	3.9958
722.8	0.325944	0.4889	0.156	0.1557	1.8681	0.3332	3.9979
723	0.326061	0.4891	0.156	0.1557	1.8681	0.3334	4.0000
723.2	0.326178	0.4893	0.156	0.1557	1.8681	0.3336	4.0021
723.4	0.326295	0.4894	0.156	0.1557	1.8681	0.3338	4.0042
723.6	0.326412	0.4896	0.156	0.1557	1.8681	0.3339	4.0063
723.8	0.32653	0.4898	0.156	0.1557	1.8681	0.3341	4.0084
724	0.326647	0.4900	0.156	0.1557	1.8681	0.3343	4.0105
724.2	0.326764	0.4901	0.156	0.1557	1.8681	0.3345	4.0126
724.4	0.326881	0.4903	0.156	0.1557	1.8681	0.3347	4.0148
724.6	0.326999	0.4905	0.156	0.1557	1.8681	0.3348	4.0169
724.8	0.327116	0.4907	0.156	0.1557	1.8681	0.3350	4.0190
725	0.327233	0.4908	0.156	0.1557	1.8681	0.3352	4.0211
725.2	0.327351	0.4910	0.156	0.1557	1.8681	0.3354	4.0232
725.4	0.327468	0.4912	0.156	0.1557	1.8681	0.3355	4.0253
725.6	0.327585	0.4914	0.156	0.1557	1.8681	0.3357	4.0274
725.8	0.327703	0.4916	0.156	0.1557	1.8681	0.3359	4.0295
726	0.32782	0.4917	0.156	0.1557	1.8681	0.3361	4.0317
726.2	0.327938	0.4919	0.156	0.1557	1.8681	0.3362	4.0338
726.4	0.328055	0.4921	0.156	0.1557	1.8681	0.3364	4.0359
726.6	0.328173	0.4923	0.156	0.1557	1.8681	0.3366	4.0380
726.8	0.328291	0.4924	0.156	0.1557	1.8681	0.3368	4.0401
727	0.328408	0.4926	0.156	0.1557	1.8681	0.3369	4.0422
727.2	0.328526	0.4928	0.156	0.1557	1.8681	0.3371	4.0443
727.4	0.328643	0.4930	0.156	0.1557	1.8681	0.3373	4.0465
727.6	0.328761	0.4931	0.156	0.1557	1.8681	0.3375	4.0486
727.8	0.328879	0.4933	0.156	0.1557	1.8681	0.3376	4.0507
728	0.328997	0.4935	0.156	0.1557	1.8681	0.3378	4.0528
728.2	0.329114	0.4937	0.156	0.1557	1.8681	0.3380	4.0549
728.4	0.329232	0.4938	0.156	0.1557	1.8681	0.3382	4.0571
728.6	0.32935	0.4940	0.156	0.1557	1.8681	0.3384	4.0592
728.8	0.329468	0.4942	0.156	0.1557	1.8681	0.3385	4.0613
729	0.329586	0.4944	0.156	0.1557	1.8681	0.3387	4.0634
729.2	0.329704	0.4946	0.156	0.1557	1.8681	0.3389	4.0655
729.4	0.329821	0.4947	0.156	0.1557	1.8681	0.3391	4.0677
729.6	0.329939	0.4949	0.156	0.1557	1.8681	0.3392	4.0698
729.8	0.330057	0.4951	0.156	0.1557	1.8681	0.3394	4.0719
730	0.330175	0.4953	0.156	0.1557	1.8681	0.3396	4.0740
730.2	0.330293	0.4954	0.156	0.1557	1.8681	0.3398	4.0762
730.4	0.330411	0.4956	0.156	0.1557	1.8681	0.3399	4.0783
730.6	0.33053	0.4958	0.156	0.1557	1.8681	0.3401	4.0804
730.8	0.330648	0.4960	0.156	0.1557	1.8681	0.3403	4.0825
731	0.330766	0.4961	0.156	0.1557	1.8681	0.3405	4.0847
731.2	0.330884	0.4963	0.156	0.1557	1.8681	0.3407	4.0868
731.4	0.331002	0.4965	0.156	0.1557	1.8681	0.3408	4.0889
731.6	0.33112	0.4967	0.156	0.1557	1.8681	0.3410	4.0910

731.8	0.331239	0.4969	0.156	0.1557	1.8681	0.3412	4.0932
732	0.331357	0.4970	0.156	0.1557	1.8681	0.3414	4.0953
732.2	0.331475	0.4972	0.156	0.1557	1.8681	0.3415	4.0974
732.4	0.331593	0.4974	0.156	0.1557	1.8681	0.3417	4.0996
732.6	0.331712	0.4976	0.156	0.1557	1.8681	0.3419	4.1017
732.8	0.33183	0.4977	0.156	0.1557	1.8681	0.3421	4.1038
733	0.331949	0.4979	0.156	0.1557	1.8681	0.3423	4.1060
733.2	0.332067	0.4981	0.156	0.1557	1.8681	0.3424	4.1081
733.4	0.332185	0.4983	0.156	0.1557	1.8681	0.3426	4.1102
733.6	0.332304	0.4985	0.156	0.1557	1.8681	0.3428	4.1123
733.8	0.332422	0.4986	0.156	0.1557	1.8681	0.3430	4.1145
734	0.332541	0.4988	0.156	0.1557	1.8681	0.3431	4.1166
734.2	0.332659	0.4990	0.156	0.1557	1.8681	0.3433	4.1187
734.4	0.332778	0.4992	0.156	0.1557	1.8681	0.3435	4.1209
734.6	0.332897	0.4993	0.156	0.1557	1.8681	0.3437	4.1230
734.8	0.333015	0.4995	0.156	0.1557	1.8681	0.3439	4.1252
735	0.333134	0.4997	0.156	0.1557	1.8681	0.3440	4.1273
735.2	0.333253	0.4999	0.156	0.1557	1.8681	0.3442	4.1294
735.4	0.333371	0.5001	0.156	0.1557	1.8681	0.3444	4.1316
735.6	0.33349	0.5002	0.156	0.1557	1.8681	0.3446	4.1337
735.8	0.333609	0.5004	0.156	0.1557	1.8681	0.3447	4.1358
736	0.333728	0.5006	0.156	0.1557	1.8681	0.3449	4.1380
736.2	0.333846	0.5008	0.156	0.1557	1.8681	0.3451	4.1401
736.4	0.333965	0.5009	0.156	0.1557	1.8681	0.3453	4.1423
736.6	0.334084	0.5011	0.156	0.1557	1.8681	0.3455	4.1444
736.8	0.334203	0.5013	0.156	0.1557	1.8681	0.3456	4.1465
737	0.334322	0.5015	0.156	0.1557	1.8681	0.3458	4.1487
737.2	0.334441	0.5017	0.156	0.1557	1.8681	0.3460	4.1508
737.4	0.33456	0.5018	0.156	0.1557	1.8681	0.3462	4.1530
737.6	0.334679	0.5020	0.156	0.1557	1.8681	0.3463	4.1551
737.8	0.334798	0.5022	0.156	0.1557	1.8681	0.3465	4.1572
738	0.334917	0.5024	0.156	0.1557	1.8681	0.3467	4.1594
738.2	0.335036	0.5026	0.156	0.1557	1.8681	0.3469	4.1615
738.4	0.335155	0.5027	0.156	0.1557	1.8681	0.3471	4.1637
738.6	0.335274	0.5029	0.156	0.1557	1.8681	0.3472	4.1658
738.8	0.335394	0.5031	0.156	0.1557	1.8681	0.3474	4.1680
739	0.335513	0.5033	0.156	0.1557	1.8681	0.3476	4.1701
739.2	0.335632	0.5034	0.156	0.1557	1.8681	0.3478	4.1722
739.4	0.335751	0.5036	0.156	0.1557	1.8681	0.3480	4.1744
739.6	0.335871	0.5038	0.156	0.1557	1.8681	0.3481	4.1765
739.8	0.33599	0.5040	0.156	0.1557	1.8681	0.3483	4.1787
740	0.336109	0.5042	0.156	0.1557	1.8681	0.3485	4.1808
740.2	0.336229	0.5043	0.156	0.1557	1.8681	0.3487	4.1830
740.4	0.336348	0.5045	0.156	0.1557	1.8681	0.3489	4.1851
740.6	0.336467	0.5047	0.156	0.1557	1.8681	0.3490	4.1873
740.8	0.336587	0.5049	0.156	0.1557	1.8681	0.3492	4.1894
741	0.336706	0.5051	0.156	0.1557	1.8681	0.3494	4.1916

741.2	0.336826	0.5052	0.156	0.1557	1.8681	0.3496	4.1937
741.4	0.336945	0.5054	0.156	0.1557	1.8681	0.3497	4.1959
741.6	0.337065	0.5056	0.156	0.1557	1.8681	0.3499	4.1980
741.8	0.337185	0.5058	0.156	0.1557	1.8681	0.3501	4.2002
742	0.337304	0.5060	0.156	0.1557	1.8681	0.3503	4.2023
742.2	0.337424	0.5061	0.156	0.1557	1.8681	0.3505	4.2045
742.4	0.337543	0.5063	0.156	0.1557	1.8681	0.3506	4.2066
742.6	0.337663	0.5065	0.156	0.1557	1.8681	0.3508	4.2088
742.8	0.337783	0.5067	0.156	0.1557	1.8681	0.3510	4.2110
743	0.337903	0.5069	0.156	0.1557	1.8681	0.3512	4.2131
743.2	0.338022	0.5070	0.156	0.1557	1.8681	0.3514	4.2153
743.4	0.338142	0.5072	0.156	0.1557	1.8681	0.3515	4.2174
743.6	0.338262	0.5074	0.156	0.1557	1.8681	0.3517	4.2196
743.8	0.338382	0.5076	0.156	0.1557	1.8681	0.3519	4.2217
744	0.338502	0.5078	0.156	0.1557	1.8681	0.3521	4.2239
744.2	0.338622	0.5079	0.156	0.1557	1.8681	0.3523	4.2261
744.4	0.338742	0.5081	0.156	0.1557	1.8681	0.3524	4.2282
744.6	0.338862	0.5083	0.156	0.1557	1.8681	0.3526	4.2304
744.8	0.338982	0.5085	0.156	0.1557	1.8681	0.3528	4.2325
745	0.339102	0.5087	0.156	0.1557	1.8681	0.3530	4.2347
745.2	0.339222	0.5088	0.156	0.1557	1.8681	0.3532	4.2369
745.4	0.339342	0.5090	0.156	0.1557	1.8681	0.3533	4.2390
745.6	0.339462	0.5092	0.156	0.1557	1.8681	0.3535	4.2412
745.8	0.339582	0.5094	0.156	0.1557	1.8681	0.3537	4.2433
746	0.339702	0.5096	0.156	0.1557	1.8681	0.3539	4.2455
746.2	0.339822	0.5097	0.156	0.1557	1.8681	0.3541	4.2477
746.4	0.339943	0.5099	0.156	0.1557	1.8681	0.3542	4.2498
746.6	0.340063	0.5101	0.156	0.1557	1.8681	0.3544	4.2520
746.8	0.340183	0.5103	0.156	0.1557	1.8681	0.3546	4.2542
747	0.340303	0.5105	0.156	0.1557	1.8681	0.3548	4.2563
747.2	0.340424	0.5106	0.156	0.1557	1.8681	0.3550	4.2585
747.4	0.340544	0.5108	0.156	0.1557	1.8681	0.3551	4.2607
747.6	0.340664	0.5110	0.156	0.1557	1.8681	0.3553	4.2628
747.8	0.340785	0.5112	0.156	0.1557	1.8681	0.3555	4.2650
748	0.340905	0.5114	0.156	0.1557	1.8681	0.3557	4.2672
748.2	0.341026	0.5115	0.156	0.1557	1.8681	0.3559	4.2693
748.4	0.341146	0.5117	0.156	0.1557	1.8681	0.3560	4.2715
748.6	0.341267	0.5119	0.156	0.1557	1.8681	0.3562	4.2737
748.8	0.341387	0.5121	0.156	0.1557	1.8681	0.3564	4.2758
749	0.341508	0.5123	0.156	0.1557	1.8681	0.3566	4.2780
749.2	0.341629	0.5124	0.156	0.1557	1.8681	0.3568	4.2802
749.4	0.341749	0.5126	0.156	0.1557	1.8681	0.3570	4.2823
749.6	0.34187	0.5128	0.156	0.1557	1.8681	0.3571	4.2845
749.8	0.341991	0.5130	0.156	0.1557	1.8681	0.3573	4.2867
750	0.342111	0.5132	0.156	0.1557	1.8681	0.3575	4.2889
750.2	0.342232	0.5133	0.156	0.1557	1.8681	0.3577	4.2910
750.4	0.342353	0.5135	0.156	0.1557	1.8681	0.3579	4.2932

750.6	0.342474	0.5137	0.156	0.1557	1.8681	0.3580	4.2954
750.8	0.342594	0.5139	0.156	0.1557	1.8681	0.3582	4.2976
751	0.342715	0.5141	0.156	0.1557	1.8681	0.3584	4.2997
751.2	0.342836	0.5143	0.156	0.1557	1.8681	0.3586	4.3019
751.4	0.342957	0.5144	0.156	0.1557	1.8681	0.3588	4.3041
751.6	0.343078	0.5146	0.156	0.1557	1.8681	0.3589	4.3063
751.8	0.343199	0.5148	0.156	0.1557	1.8681	0.3591	4.3084
752	0.34332	0.5150	0.156	0.1557	1.8681	0.3593	4.3106
752.2	0.343441	0.5152	0.156	0.1557	1.8681	0.3595	4.3128
752.4	0.343562	0.5153	0.156	0.1557	1.8681	0.3597	4.3150
752.6	0.343683	0.5155	0.156	0.1557	1.8681	0.3599	4.3172
752.8	0.343804	0.5157	0.156	0.1557	1.8681	0.3600	4.3193
753	0.343925	0.5159	0.156	0.1557	1.8681	0.3602	4.3215
753.2	0.344047	0.5161	0.156	0.1557	1.8681	0.3604	4.3237
753.4	0.344168	0.5163	0.156	0.1557	1.8681	0.3606	4.3259
753.6	0.344289	0.5164	0.156	0.1557	1.8681	0.3608	4.3281
753.8	0.34441	0.5166	0.156	0.1557	1.8681	0.3609	4.3302
754	0.344532	0.5168	0.156	0.1557	1.8681	0.3611	4.3324
754.2	0.344653	0.5170	0.156	0.1557	1.8681	0.3613	4.3346
754.4	0.344774	0.5172	0.156	0.1557	1.8681	0.3615	4.3368
754.6	0.344896	0.5173	0.156	0.1557	1.8681	0.3617	4.3390
754.8	0.345017	0.5175	0.156	0.1557	1.8681	0.3619	4.3412
755	0.345139	0.5177	0.156	0.1557	1.8681	0.3620	4.3433
755.2	0.34526	0.5179	0.156	0.1557	1.8681	0.3622	4.3455
755.4	0.345381	0.5181	0.156	0.1557	1.8681	0.3624	4.3477
755.6	0.345503	0.5183	0.156	0.1557	1.8681	0.3626	4.3499
755.8	0.345625	0.5184	0.156	0.1557	1.8681	0.3628	4.3521
756	0.345746	0.5186	0.156	0.1557	1.8681	0.3629	4.3543
756.2	0.345868	0.5188	0.156	0.1557	1.8681	0.3631	4.3565
756.4	0.345989	0.5190	0.156	0.1557	1.8681	0.3633	4.3587
756.6	0.346111	0.5192	0.156	0.1557	1.8681	0.3635	4.3608
756.8	0.346233	0.5193	0.156	0.1557	1.8681	0.3637	4.3630
757	0.346354	0.5195	0.156	0.1557	1.8681	0.3639	4.3652
757.2	0.346476	0.5197	0.156	0.1557	1.8681	0.3640	4.3674
757.4	0.346598	0.5199	0.156	0.1557	1.8681	0.3642	4.3696
757.6	0.34672	0.5201	0.156	0.1557	1.8681	0.3644	4.3718
757.8	0.346842	0.5203	0.156	0.1557	1.8681	0.3646	4.3740
758	0.346964	0.5204	0.156	0.1557	1.8681	0.3648	4.3762
758.2	0.347085	0.5206	0.156	0.1557	1.8681	0.3650	4.3784
758.4	0.347207	0.5208	0.156	0.1557	1.8681	0.3651	4.3806
758.6	0.347329	0.5210	0.156	0.1557	1.8681	0.3653	4.3828
758.8	0.347451	0.5212	0.156	0.1557	1.8681	0.3655	4.3850
759	0.347573	0.5214	0.156	0.1557	1.8681	0.3657	4.3872
759.2	0.347695	0.5215	0.156	0.1557	1.8681	0.3659	4.3894
759.4	0.347817	0.5217	0.156	0.1557	1.8681	0.3661	4.3916
759.6	0.34794	0.5219	0.156	0.1557	1.8681	0.3662	4.3938
759.8	0.348062	0.5221	0.156	0.1557	1.8681	0.3664	4.3960

760	0.348184	0.5223	0.156	0.1557	1.8681	0.3666	4.3982
760.2	0.348306	0.5225	0.156	0.1557	1.8681	0.3668	4.4004
760.4	0.348428	0.5226	0.156	0.1557	1.8681	0.3670	4.4026
760.6	0.34855	0.5228	0.156	0.1557	1.8681	0.3672	4.4048
760.8	0.348673	0.5230	0.156	0.1557	1.8681	0.3673	4.4070
761	0.348795	0.5232	0.156	0.1557	1.8681	0.3675	4.4092
761.2	0.348917	0.5234	0.156	0.1557	1.8681	0.3677	4.4114
761.4	0.34904	0.5236	0.156	0.1557	1.8681	0.3679	4.4136
761.6	0.349162	0.5237	0.156	0.1557	1.8681	0.3681	4.4158
761.8	0.349285	0.5239	0.156	0.1557	1.8681	0.3683	4.4180
762	0.349407	0.5241	0.156	0.1557	1.8681	0.3684	4.4202
762.2	0.34953	0.5243	0.156	0.1557	1.8681	0.3686	4.4224
762.4	0.349652	0.5245	0.156	0.1557	1.8681	0.3688	4.4246
762.6	0.349775	0.5247	0.156	0.1557	1.8681	0.3690	4.4268
762.8	0.349897	0.5248	0.156	0.1557	1.8681	0.3692	4.4290
763	0.35002	0.5250	0.156	0.1557	1.8681	0.3694	4.4312
763.2	0.350142	0.5252	0.156	0.1557	1.8681	0.3695	4.4334
763.4	0.350265	0.5254	0.156	0.1557	1.8681	0.3697	4.4356
763.6	0.350388	0.5256	0.156	0.1557	1.8681	0.3699	4.4378
763.8	0.35051	0.5258	0.156	0.1557	1.8681	0.3701	4.4400
764	0.350633	0.5259	0.156	0.1557	1.8681	0.3703	4.4422
764.2	0.350756	0.5261	0.156	0.1557	1.8681	0.3705	4.4444
764.4	0.350879	0.5263	0.156	0.1557	1.8681	0.3706	4.4467
764.6	0.351002	0.5265	0.156	0.1557	1.8681	0.3708	4.4489
764.8	0.351124	0.5267	0.156	0.1557	1.8681	0.3710	4.4511
765	0.351247	0.5269	0.156	0.1557	1.8681	0.3712	4.4533
765.2	0.35137	0.5271	0.156	0.1557	1.8681	0.3714	4.4555
765.4	0.351493	0.5272	0.156	0.1557	1.8681	0.3716	4.4577
765.6	0.351616	0.5274	0.156	0.1557	1.8681	0.3718	4.4599
765.8	0.351739	0.5276	0.156	0.1557	1.8681	0.3719	4.4621
766	0.351862	0.5278	0.156	0.1557	1.8681	0.3721	4.4644
766.2	0.351985	0.5280	0.156	0.1557	1.8681	0.3723	4.4666
766.4	0.352109	0.5282	0.156	0.1557	1.8681	0.3725	4.4688
766.6	0.352232	0.5283	0.156	0.1557	1.8681	0.3727	4.4710
766.8	0.352355	0.5285	0.156	0.1557	1.8681	0.3729	4.4732
767	0.352478	0.5287	0.156	0.1557	1.8681	0.3730	4.4754
767.2	0.352601	0.5289	0.156	0.1557	1.8681	0.3732	4.4777
767.4	0.352725	0.5291	0.156	0.1557	1.8681	0.3734	4.4799
767.6	0.352848	0.5293	0.156	0.1557	1.8681	0.3736	4.4821
767.8	0.352971	0.5295	0.156	0.1557	1.8681	0.3738	4.4843
768	0.353094	0.5296	0.156	0.1557	1.8681	0.3740	4.4865
768.2	0.353218	0.5298	0.156	0.1557	1.8681	0.3742	4.4888
768.4	0.353341	0.5300	0.156	0.1557	1.8681	0.3743	4.4910
768.6	0.353465	0.5302	0.156	0.1557	1.8681	0.3745	4.4932
768.8	0.353588	0.5304	0.156	0.1557	1.8681	0.3747	4.4954
769	0.353712	0.5306	0.156	0.1557	1.8681	0.3749	4.4976
769.2	0.353835	0.5308	0.156	0.1557	1.8681	0.3751	4.4999

769.4	0.353959	0.5309	0.156	0.1557	1.8681	0.3753	4.5021
769.6	0.354082	0.5311	0.156	0.1557	1.8681	0.3755	4.5043
769.8	0.354206	0.5313	0.156	0.1557	1.8681	0.3756	4.5065
770	0.35433	0.5315	0.156	0.1557	1.8681	0.3758	4.5088
770.2	0.354453	0.5317	0.156	0.1557	1.8681	0.3760	4.5110
770.4	0.354577	0.5319	0.156	0.1557	1.8681	0.3762	4.5132
770.6	0.354701	0.5321	0.156	0.1557	1.8681	0.3764	4.5154
770.8	0.354825	0.5322	0.156	0.1557	1.8681	0.3766	4.5177
771	0.354948	0.5324	0.156	0.1557	1.8681	0.3768	4.5199
771.2	0.355072	0.5326	0.156	0.1557	1.8681	0.3769	4.5221
771.4	0.355196	0.5328	0.156	0.1557	1.8681	0.3771	4.5244
771.6	0.35532	0.5330	0.156	0.1557	1.8681	0.3773	4.5266
771.8	0.355444	0.5332	0.156	0.1557	1.8681	0.3775	4.5288
772	0.355568	0.5334	0.156	0.1557	1.8681	0.3777	4.5310
772.2	0.355692	0.5335	0.156	0.1557	1.8681	0.3779	4.5333
772.4	0.355816	0.5337	0.156	0.1557	1.8681	0.3781	4.5355
772.6	0.35594	0.5339	0.156	0.1557	1.8681	0.3782	4.5377
772.8	0.356064	0.5341	0.156	0.1557	1.8681	0.3784	4.5400
773	0.356188	0.5343	0.156	0.1557	1.8681	0.3786	4.5422
773.2	0.356312	0.5345	0.156	0.1557	1.8681	0.3788	4.5444
773.4	0.356436	0.5347	0.156	0.1557	1.8681	0.3790	4.5467
773.6	0.356561	0.5348	0.156	0.1557	1.8681	0.3792	4.5489
773.8	0.356685	0.5350	0.156	0.1557	1.8681	0.3794	4.5512
774	0.356809	0.5352	0.156	0.1557	1.8681	0.3795	4.5534
774.2	0.356933	0.5354	0.156	0.1557	1.8681	0.3797	4.5556
774.4	0.357058	0.5356	0.156	0.1557	1.8681	0.3799	4.5579
774.6	0.357182	0.5358	0.156	0.1557	1.8681	0.3801	4.5601
774.8	0.357306	0.5360	0.156	0.1557	1.8681	0.3803	4.5623
775	0.357431	0.5361	0.156	0.1557	1.8681	0.3805	4.5646
775.2	0.357555	0.5363	0.156	0.1557	1.8681	0.3807	4.5668
775.4	0.35768	0.5365	0.156	0.1557	1.8681	0.3808	4.5691
775.6	0.357804	0.5367	0.156	0.1557	1.8681	0.3810	4.5713
775.8	0.357929	0.5369	0.156	0.1557	1.8681	0.3812	4.5735
776	0.358053	0.5371	0.156	0.1557	1.8681	0.3814	4.5758
776.2	0.358178	0.5373	0.156	0.1557	1.8681	0.3816	4.5780
776.4	0.358303	0.5375	0.156	0.1557	1.8681	0.3818	4.5803
776.6	0.358427	0.5376	0.156	0.1557	1.8681	0.3820	4.5825
776.8	0.358552	0.5378	0.156	0.1557	1.8681	0.3822	4.5848
777	0.358677	0.5380	0.156	0.1557	1.8681	0.3823	4.5870
777.2	0.358802	0.5382	0.156	0.1557	1.8681	0.3825	4.5892
777.4	0.358926	0.5384	0.156	0.1557	1.8681	0.3827	4.5915
777.6	0.359051	0.5386	0.156	0.1557	1.8681	0.3829	4.5937
777.8	0.359176	0.5388	0.156	0.1557	1.8681	0.3831	4.5960
778	0.359301	0.5390	0.156	0.1557	1.8681	0.3833	4.5982
778.2	0.359426	0.5391	0.156	0.1557	1.8681	0.3835	4.6005
778.4	0.359551	0.5393	0.156	0.1557	1.8681	0.3837	4.6027
778.6	0.359676	0.5395	0.156	0.1557	1.8681	0.3838	4.6050

778.8	0.359801	0.5397	0.156	0.1557	1.8681	0.3840	4.6072
779	0.359926	0.5399	0.156	0.1557	1.8681	0.3842	4.6095
779.2	0.360051	0.5401	0.156	0.1557	1.8681	0.3844	4.6117
779.4	0.360176	0.5403	0.156	0.1557	1.8681	0.3846	4.6140
779.6	0.360301	0.5405	0.156	0.1557	1.8681	0.3848	4.6162
779.8	0.360426	0.5406	0.156	0.1557	1.8681	0.3850	4.6185
780	0.360552	0.5408	0.156	0.1557	1.8681	0.3852	4.6207
780.2	0.360677	0.5410	0.156	0.1557	1.8681	0.3853	4.6230
780.4	0.360802	0.5412	0.156	0.1557	1.8681	0.3855	4.6253
780.6	0.360927	0.5414	0.156	0.1557	1.8681	0.3857	4.6275
780.8	0.361053	0.5416	0.156	0.1557	1.8681	0.3859	4.6298
781	0.361178	0.5418	0.156	0.1557	1.8681	0.3861	4.6320
781.2	0.361303	0.5420	0.156	0.1557	1.8681	0.3863	4.6343
781.4	0.361429	0.5421	0.156	0.1557	1.8681	0.3865	4.6365
781.6	0.361554	0.5423	0.156	0.1557	1.8681	0.3867	4.6388
781.8	0.36168	0.5425	0.156	0.1557	1.8681	0.3868	4.6411
782	0.361805	0.5427	0.156	0.1557	1.8681	0.3870	4.6433
782.2	0.361931	0.5429	0.156	0.1557	1.8681	0.3872	4.6456
782.4	0.362056	0.5431	0.156	0.1557	1.8681	0.3874	4.6478
782.6	0.362182	0.5433	0.156	0.1557	1.8681	0.3876	4.6501
782.8	0.362308	0.5435	0.156	0.1557	1.8681	0.3878	4.6524
783	0.362433	0.5437	0.156	0.1557	1.8681	0.3880	4.6546
783.2	0.362559	0.5438	0.156	0.1557	1.8681	0.3882	4.6569
783.4	0.362685	0.5440	0.156	0.1557	1.8681	0.3884	4.6591
783.6	0.362811	0.5442	0.156	0.1557	1.8681	0.3885	4.6614
783.8	0.362936	0.5444	0.156	0.1557	1.8681	0.3887	4.6637
784	0.363062	0.5446	0.156	0.1557	1.8681	0.3889	4.6659
784.2	0.363188	0.5448	0.156	0.1557	1.8681	0.3891	4.6682
784.4	0.363314	0.5450	0.156	0.1557	1.8681	0.3893	4.6705
784.6	0.36344	0.5452	0.156	0.1557	1.8681	0.3895	4.6727
784.8	0.363566	0.5453	0.156	0.1557	1.8681	0.3897	4.6750
785	0.363692	0.5455	0.156	0.1557	1.8681	0.3899	4.6773
785.2	0.363818	0.5457	0.156	0.1557	1.8681	0.3901	4.6795
785.4	0.363944	0.5459	0.156	0.1557	1.8681	0.3902	4.6818
785.6	0.36407	0.5461	0.156	0.1557	1.8681	0.3904	4.6841
785.8	0.364196	0.5463	0.156	0.1557	1.8681	0.3906	4.6863
786	0.364322	0.5465	0.156	0.1557	1.8681	0.3908	4.6886
786.2	0.364449	0.5467	0.156	0.1557	1.8681	0.3910	4.6909
786.4	0.364575	0.5469	0.156	0.1557	1.8681	0.3912	4.6932
786.6	0.364701	0.5471	0.156	0.1557	1.8681	0.3914	4.6954
786.8	0.364827	0.5472	0.156	0.1557	1.8681	0.3916	4.6977
787	0.364954	0.5474	0.156	0.1557	1.8681	0.3918	4.7000
787.2	0.36508	0.5476	0.156	0.1557	1.8681	0.3919	4.7022
787.4	0.365207	0.5478	0.156	0.1557	1.8681	0.3921	4.7045
787.6	0.365333	0.5480	0.156	0.1557	1.8681	0.3923	4.7068
787.8	0.365459	0.5482	0.156	0.1557	1.8681	0.3925	4.7091
788	0.365586	0.5484	0.156	0.1557	1.8681	0.3927	4.7114

788.2	0.365712	0.5486	0.156	0.1557	1.8681	0.3929	4.7136
788.4	0.365839	0.5488	0.156	0.1557	1.8681	0.3931	4.7159
788.6	0.365966	0.5489	0.156	0.1557	1.8681	0.3933	4.7182
788.8	0.366092	0.5491	0.156	0.1557	1.8681	0.3935	4.7205
789	0.366219	0.5493	0.156	0.1557	1.8681	0.3937	4.7227
789.2	0.366346	0.5495	0.156	0.1557	1.8681	0.3938	4.7250
789.4	0.366472	0.5497	0.156	0.1557	1.8681	0.3940	4.7273
789.6	0.366599	0.5499	0.156	0.1557	1.8681	0.3942	4.7296
789.8	0.366726	0.5501	0.156	0.1557	1.8681	0.3944	4.7319
790	0.366853	0.5503	0.156	0.1557	1.8681	0.3946	4.7341
790.2	0.366979	0.5505	0.156	0.1557	1.8681	0.3948	4.7364
790.4	0.367106	0.5507	0.156	0.1557	1.8681	0.3950	4.7387
790.6	0.367233	0.5508	0.156	0.1557	1.8681	0.3952	4.7410
790.8	0.36736	0.5510	0.156	0.1557	1.8681	0.3954	4.7433
791	0.367487	0.5512	0.156	0.1557	1.8681	0.3956	4.7456
791.2	0.367614	0.5514	0.156	0.1557	1.8681	0.3957	4.7479
791.4	0.367741	0.5516	0.156	0.1557	1.8681	0.3959	4.7501
791.6	0.367868	0.5518	0.156	0.1557	1.8681	0.3961	4.7524
791.8	0.367995	0.5520	0.156	0.1557	1.8681	0.3963	4.7547
792	0.368123	0.5522	0.156	0.1557	1.8681	0.3965	4.7570
792.2	0.36825	0.5524	0.156	0.1557	1.8681	0.3967	4.7593
792.4	0.368377	0.5526	0.156	0.1557	1.8681	0.3969	4.7616
792.6	0.368504	0.5528	0.156	0.1557	1.8681	0.3971	4.7639
792.8	0.368632	0.5529	0.156	0.1557	1.8681	0.3973	4.7662
793	0.368759	0.5531	0.156	0.1557	1.8681	0.3975	4.7685
793.2	0.368886	0.5533	0.156	0.1557	1.8681	0.3977	4.7707
793.4	0.369014	0.5535	0.156	0.1557	1.8681	0.3978	4.7730
793.6	0.369141	0.5537	0.156	0.1557	1.8681	0.3980	4.7753
793.8	0.369268	0.5539	0.156	0.1557	1.8681	0.3982	4.7776
794	0.369396	0.5541	0.156	0.1557	1.8681	0.3984	4.7799
794.2	0.369523	0.5543	0.156	0.1557	1.8681	0.3986	4.7822
794.4	0.369651	0.5545	0.156	0.1557	1.8681	0.3988	4.7845
794.6	0.369779	0.5547	0.156	0.1557	1.8681	0.3990	4.7868
794.8	0.369906	0.5549	0.156	0.1557	1.8681	0.3992	4.7891
795	0.370034	0.5551	0.156	0.1557	1.8681	0.3994	4.7914
795.2	0.370161	0.5552	0.156	0.1557	1.8681	0.3996	4.7937
795.4	0.370289	0.5554	0.156	0.1557	1.8681	0.3998	4.7960
795.6	0.370417	0.5556	0.156	0.1557	1.8681	0.4000	4.7983
795.8	0.370545	0.5558	0.156	0.1557	1.8681	0.4001	4.8006
796	0.370673	0.5560	0.156	0.1557	1.8681	0.4003	4.8029
796.2	0.3708	0.5562	0.156	0.1557	1.8681	0.4005	4.8052
796.4	0.370928	0.5564	0.156	0.1557	1.8681	0.4007	4.8075
796.6	0.371056	0.5566	0.156	0.1557	1.8681	0.4009	4.8098
796.8	0.371184	0.5568	0.156	0.1557	1.8681	0.4011	4.8121
797	0.371312	0.5570	0.156	0.1557	1.8681	0.4013	4.8144
797.2	0.37144	0.5572	0.156	0.1557	1.8681	0.4015	4.8167
797.4	0.371568	0.5574	0.156	0.1557	1.8681	0.4017	4.8190

797.6	0.371696	0.5575	0.156	0.1557	1.8681	0.4019	4.8213
797.8	0.371824	0.5577	0.156	0.1557	1.8681	0.4021	4.8236
798	0.371953	0.5579	0.156	0.1557	1.8681	0.4023	4.8259
798.2	0.372081	0.5581	0.156	0.1557	1.8681	0.4024	4.8282
798.4	0.372209	0.5583	0.156	0.1557	1.8681	0.4026	4.8306
798.6	0.372337	0.5585	0.156	0.1557	1.8681	0.4028	4.8329
798.8	0.372466	0.5587	0.156	0.1557	1.8681	0.4030	4.8352
799	0.372594	0.5589	0.156	0.1557	1.8681	0.4032	4.8375
799.2	0.372722	0.5591	0.156	0.1557	1.8681	0.4034	4.8398
799.4	0.372851	0.5593	0.156	0.1557	1.8681	0.4036	4.8421
799.6	0.372979	0.5595	0.156	0.1557	1.8681	0.4038	4.8444
799.8	0.373107	0.5597	0.156	0.1557	1.8681	0.4040	4.8467
800	0.373236	0.5599	0.156	0.1557	1.8681	0.4042	4.8490
800.2	0.373365	0.5600	0.156	0.1557	1.8681	0.4044	4.8513
800.4	0.373493	0.5602	0.156	0.1557	1.8681	0.4046	4.8537
800.6	0.373622	0.5604	0.156	0.1557	1.8681	0.4048	4.8560
800.8	0.37375	0.5606	0.156	0.1557	1.8681	0.4050	4.8583
801	0.373879	0.5608	0.156	0.1557	1.8681	0.4051	4.8606
801.2	0.374008	0.5610	0.156	0.1557	1.8681	0.4053	4.8629
801.4	0.374136	0.5612	0.156	0.1557	1.8681	0.4055	4.8652
801.6	0.374265	0.5614	0.156	0.1557	1.8681	0.4057	4.8676
801.8	0.374394	0.5616	0.156	0.1557	1.8681	0.4059	4.8699
802	0.374523	0.5618	0.156	0.1557	1.8681	0.4061	4.8722
802.2	0.374652	0.5620	0.156	0.1557	1.8681	0.4063	4.8745
802.4	0.374781	0.5622	0.156	0.1557	1.8681	0.4065	4.8768
802.6	0.37491	0.5624	0.156	0.1557	1.8681	0.4067	4.8792
802.8	0.375039	0.5626	0.156	0.1557	1.8681	0.4069	4.8815
803	0.375168	0.5628	0.156	0.1557	1.8681	0.4071	4.8838
803.2	0.375297	0.5629	0.156	0.1557	1.8681	0.4073	4.8861
803.4	0.375426	0.5631	0.156	0.1557	1.8681	0.4075	4.8884
803.6	0.375555	0.5633	0.156	0.1557	1.8681	0.4077	4.8908
803.8	0.375684	0.5635	0.156	0.1557	1.8681	0.4079	4.8931
804	0.375813	0.5637	0.156	0.1557	1.8681	0.4080	4.8954
804.2	0.375942	0.5639	0.156	0.1557	1.8681	0.4082	4.8977
804.4	0.376072	0.5641	0.156	0.1557	1.8681	0.4084	4.9001
804.6	0.376201	0.5643	0.156	0.1557	1.8681	0.4086	4.9024
804.8	0.37633	0.5645	0.156	0.1557	1.8681	0.4088	4.9047
805	0.37646	0.5647	0.156	0.1557	1.8681	0.4090	4.9071
805.2	0.376589	0.5649	0.156	0.1557	1.8681	0.4092	4.9094
805.4	0.376718	0.5651	0.156	0.1557	1.8681	0.4094	4.9117
805.6	0.376848	0.5653	0.156	0.1557	1.8681	0.4096	4.9140
805.8	0.376977	0.5655	0.156	0.1557	1.8681	0.4098	4.9164
806	0.377107	0.5657	0.156	0.1557	1.8681	0.4100	4.9187
806.2	0.377237	0.5659	0.156	0.1557	1.8681	0.4102	4.9210
806.4	0.377366	0.5660	0.156	0.1557	1.8681	0.4104	4.9234
806.6	0.377496	0.5662	0.156	0.1557	1.8681	0.4106	4.9257
806.8	0.377626	0.5664	0.156	0.1557	1.8681	0.4108	4.9280

807	0.377755	0.5666	0.156	0.1557	1.8681	0.4110	4.9304
807.2	0.377885	0.5668	0.156	0.1557	1.8681	0.4112	4.9327
807.4	0.378015	0.5670	0.156	0.1557	1.8681	0.4114	4.9350
807.6	0.378145	0.5672	0.156	0.1557	1.8681	0.4115	4.9374
807.8	0.378274	0.5674	0.156	0.1557	1.8681	0.4117	4.9397
808	0.378404	0.5676	0.156	0.1557	1.8681	0.4119	4.9421
808.2	0.378534	0.5678	0.156	0.1557	1.8681	0.4121	4.9444
808.4	0.378664	0.5680	0.156	0.1557	1.8681	0.4123	4.9467
808.6	0.378794	0.5682	0.156	0.1557	1.8681	0.4125	4.9491
808.8	0.378924	0.5684	0.156	0.1557	1.8681	0.4127	4.9514
809	0.379054	0.5686	0.156	0.1557	1.8681	0.4129	4.9538
809.2	0.379184	0.5688	0.156	0.1557	1.8681	0.4131	4.9561
809.4	0.379315	0.5690	0.156	0.1557	1.8681	0.4133	4.9584
809.6	0.379445	0.5692	0.156	0.1557	1.8681	0.4135	4.9608
809.8	0.379575	0.5694	0.156	0.1557	1.8681	0.4137	4.9631
810	0.379705	0.5696	0.156	0.1557	1.8681	0.4139	4.9655
810.2	0.379835	0.5698	0.156	0.1557	1.8681	0.4141	4.9678
810.4	0.379966	0.5699	0.156	0.1557	1.8681	0.4143	4.9702
810.6	0.380096	0.5701	0.156	0.1557	1.8681	0.4145	4.9725
810.8	0.380227	0.5703	0.156	0.1557	1.8681	0.4147	4.9748
811	0.380357	0.5705	0.156	0.1557	1.8681	0.4149	4.9772
811.2	0.380487	0.5707	0.156	0.1557	1.8681	0.4151	4.9795
811.4	0.380618	0.5709	0.156	0.1557	1.8681	0.4153	4.9819
811.6	0.380748	0.5711	0.156	0.1557	1.8681	0.4155	4.9842
811.8	0.380879	0.5713	0.156	0.1557	1.8681	0.4156	4.9866
812	0.38101	0.5715	0.156	0.1557	1.8681	0.4158	4.9889
812.2	0.38114	0.5717	0.156	0.1557	1.8681	0.4160	4.9913
812.4	0.381271	0.5719	0.156	0.1557	1.8681	0.4162	4.9936
812.6	0.381402	0.5721	0.156	0.1557	1.8681	0.4164	4.9960
812.8	0.381532	0.5723	0.156	0.1557	1.8681	0.4166	4.9984
813	0.381663	0.5725	0.156	0.1557	1.8681	0.4168	5.0007
813.2	0.381794	0.5727	0.156	0.1557	1.8681	0.4170	5.0031
813.4	0.381925	0.5729	0.156	0.1557	1.8681	0.4172	5.0054
813.6	0.382056	0.5731	0.156	0.1557	1.8681	0.4174	5.0078
813.8	0.382187	0.5733	0.156	0.1557	1.8681	0.4176	5.0101
814	0.382318	0.5735	0.156	0.1557	1.8681	0.4178	5.0125
814.2	0.382449	0.5737	0.156	0.1557	1.8681	0.4180	5.0148
814.4	0.38258	0.5739	0.156	0.1557	1.8681	0.4182	5.0172
814.6	0.382711	0.5741	0.156	0.1557	1.8681	0.4184	5.0196
814.8	0.382842	0.5743	0.156	0.1557	1.8681	0.4186	5.0219
815	0.382973	0.5745	0.156	0.1557	1.8681	0.4188	5.0243
815.2	0.383104	0.5747	0.156	0.1557	1.8681	0.4190	5.0266
815.4	0.383236	0.5749	0.156	0.1557	1.8681	0.4192	5.0290
815.6	0.383367	0.5751	0.156	0.1557	1.8681	0.4194	5.0314
815.8	0.383498	0.5752	0.156	0.1557	1.8681	0.4196	5.0337
816	0.383629	0.5754	0.156	0.1557	1.8681	0.4198	5.0361
816.2	0.383761	0.5756	0.156	0.1557	1.8681	0.4200	5.0385

816.4	0.383892	0.5758	0.156	0.1557	1.8681	0.4202	5.0408
816.6	0.384024	0.5760	0.156	0.1557	1.8681	0.4204	5.0432
816.8	0.384155	0.5762	0.156	0.1557	1.8681	0.4206	5.0456
817	0.384287	0.5764	0.156	0.1557	1.8681	0.4208	5.0479
817.2	0.384418	0.5766	0.156	0.1557	1.8681	0.4210	5.0503
817.4	0.38455	0.5768	0.156	0.1557	1.8681	0.4212	5.0527
817.6	0.384681	0.5770	0.156	0.1557	1.8681	0.4214	5.0550
817.8	0.384813	0.5772	0.156	0.1557	1.8681	0.4215	5.0574
818	0.384945	0.5774	0.156	0.1557	1.8681	0.4217	5.0598
818.2	0.385077	0.5776	0.156	0.1557	1.8681	0.4219	5.0621
818.4	0.385208	0.5778	0.156	0.1557	1.8681	0.4221	5.0645
818.6	0.38534	0.5780	0.156	0.1557	1.8681	0.4223	5.0669
818.8	0.385472	0.5782	0.156	0.1557	1.8681	0.4225	5.0693
819	0.385604	0.5784	0.156	0.1557	1.8681	0.4227	5.0716
819.2	0.385736	0.5786	0.156	0.1557	1.8681	0.4229	5.0740
819.4	0.385868	0.5788	0.156	0.1557	1.8681	0.4231	5.0764
819.6	0.386	0.5790	0.156	0.1557	1.8681	0.4233	5.0788
819.8	0.386132	0.5792	0.156	0.1557	1.8681	0.4235	5.0811
820	0.386264	0.5794	0.156	0.1557	1.8681	0.4237	5.0835
820.2	0.386396	0.5796	0.156	0.1557	1.8681	0.4239	5.0859
820.4	0.386528	0.5798	0.156	0.1557	1.8681	0.4241	5.0883
820.6	0.38666	0.5800	0.156	0.1557	1.8681	0.4243	5.0906
820.8	0.386793	0.5802	0.156	0.1557	1.8681	0.4245	5.0930
821	0.386925	0.5804	0.156	0.1557	1.8681	0.4247	5.0954
821.2	0.387057	0.5806	0.156	0.1557	1.8681	0.4249	5.0978
821.4	0.38719	0.5808	0.156	0.1557	1.8681	0.4251	5.1002
821.6	0.387322	0.5810	0.156	0.1557	1.8681	0.4253	5.1025
821.8	0.387454	0.5812	0.156	0.1557	1.8681	0.4255	5.1049
822	0.387587	0.5814	0.156	0.1557	1.8681	0.4257	5.1073
822.2	0.387719	0.5816	0.156	0.1557	1.8681	0.4259	5.1097
822.4	0.387852	0.5818	0.156	0.1557	1.8681	0.4261	5.1121
822.6	0.387984	0.5820	0.156	0.1557	1.8681	0.4263	5.1145
822.8	0.388117	0.5822	0.156	0.1557	1.8681	0.4265	5.1169
823	0.38825	0.5824	0.156	0.1557	1.8681	0.4267	5.1192
823.2	0.388382	0.5826	0.156	0.1557	1.8681	0.4269	5.1216
823.4	0.388515	0.5828	0.156	0.1557	1.8681	0.4271	5.1240
823.6	0.388648	0.5830	0.156	0.1557	1.8681	0.4273	5.1264
823.8	0.388781	0.5832	0.156	0.1557	1.8681	0.4275	5.1288
824	0.388913	0.5834	0.156	0.1557	1.8681	0.4277	5.1312
824.2	0.389046	0.5836	0.156	0.1557	1.8681	0.4279	5.1336
824.4	0.389179	0.5838	0.156	0.1557	1.8681	0.4281	5.1360
824.6	0.389312	0.5840	0.156	0.1557	1.8681	0.4283	5.1384
824.8	0.389445	0.5842	0.156	0.1557	1.8681	0.4285	5.1408
825	0.389578	0.5844	0.156	0.1557	1.8681	0.4287	5.1432
825.2	0.389711	0.5846	0.156	0.1557	1.8681	0.4289	5.1455
825.4	0.389844	0.5848	0.156	0.1557	1.8681	0.4291	5.1479
825.6	0.389977	0.5850	0.156	0.1557	1.8681	0.4293	5.1503

825.8	0.390111	0.5852	0.156	0.1557	1.8681	0.4295	5.1527
826	0.390244	0.5854	0.156	0.1557	1.8681	0.4297	5.1551
826.2	0.390377	0.5856	0.156	0.1557	1.8681	0.4299	5.1575
826.4	0.39051	0.5858	0.156	0.1557	1.8681	0.4301	5.1599
826.6	0.390644	0.5860	0.156	0.1557	1.8681	0.4303	5.1623
826.8	0.390777	0.5862	0.156	0.1557	1.8681	0.4305	5.1647
827	0.39091	0.5864	0.156	0.1557	1.8681	0.4307	5.1671
827.2	0.391044	0.5866	0.156	0.1557	1.8681	0.4309	5.1695
827.4	0.391177	0.5868	0.156	0.1557	1.8681	0.4311	5.1719
827.6	0.391311	0.5870	0.156	0.1557	1.8681	0.4313	5.1743
827.8	0.391444	0.5872	0.156	0.1557	1.8681	0.4315	5.1767
828	0.391578	0.5874	0.156	0.1557	1.8681	0.4317	5.1791
828.2	0.391712	0.5876	0.156	0.1557	1.8681	0.4319	5.1816
828.4	0.391845	0.5878	0.156	0.1557	1.8681	0.4321	5.1840
828.6	0.391979	0.5880	0.156	0.1557	1.8681	0.4323	5.1864
828.8	0.392113	0.5882	0.156	0.1557	1.8681	0.4325	5.1888
829	0.392247	0.5884	0.156	0.1557	1.8681	0.4327	5.1912
829.2	0.392381	0.5886	0.156	0.1557	1.8681	0.4329	5.1936
829.4	0.392514	0.5888	0.156	0.1557	1.8681	0.4331	5.1960
829.6	0.392648	0.5890	0.156	0.1557	1.8681	0.4333	5.1984
829.8	0.392782	0.5892	0.156	0.1557	1.8681	0.4335	5.2008
830	0.392916	0.5894	0.156	0.1557	1.8681	0.4337	5.2032
830.2	0.39305	0.5896	0.156	0.1557	1.8681	0.4339	5.2056
830.4	0.393184	0.5898	0.156	0.1557	1.8681	0.4341	5.2081
830.6	0.393318	0.5900	0.156	0.1557	1.8681	0.4343	5.2105
830.8	0.393453	0.5902	0.156	0.1557	1.8681	0.4345	5.2129
831	0.393587	0.5904	0.156	0.1557	1.8681	0.4347	5.2153
831.2	0.393721	0.5906	0.156	0.1557	1.8681	0.4349	5.2177
831.4	0.393855	0.5908	0.156	0.1557	1.8681	0.4351	5.2201
831.6	0.39399	0.5910	0.156	0.1557	1.8681	0.4353	5.2225
831.8	0.394124	0.5912	0.156	0.1557	1.8681	0.4355	5.2250
832	0.394258	0.5914	0.156	0.1557	1.8681	0.4357	5.2274
832.2	0.394393	0.5916	0.156	0.1557	1.8681	0.4359	5.2298
832.4	0.394527	0.5918	0.156	0.1557	1.8681	0.4361	5.2322
832.6	0.394662	0.5920	0.156	0.1557	1.8681	0.4363	5.2346
832.8	0.394796	0.5922	0.156	0.1557	1.8681	0.4365	5.2371
833	0.394931	0.5924	0.156	0.1557	1.8681	0.4367	5.2395
833.2	0.395065	0.5926	0.156	0.1557	1.8681	0.4369	5.2419
833.4	0.3952	0.5928	0.156	0.1557	1.8681	0.4371	5.2443
833.6	0.395335	0.5930	0.156	0.1557	1.8681	0.4373	5.2468
833.8	0.39547	0.5932	0.156	0.1557	1.8681	0.4375	5.2492
834	0.395604	0.5934	0.156	0.1557	1.8681	0.4377	5.2516
834.2	0.395739	0.5936	0.156	0.1557	1.8681	0.4379	5.2540
834.4	0.395874	0.5938	0.156	0.1557	1.8681	0.4381	5.2565
834.6	0.396009	0.5940	0.156	0.1557	1.8681	0.4383	5.2589
834.8	0.396144	0.5942	0.156	0.1557	1.8681	0.4385	5.2613
835	0.396279	0.5944	0.156	0.1557	1.8681	0.4387	5.2637

835.2	0.396414	0.5946	0.156	0.1557	1.8681	0.4389	5.2662
835.4	0.396549	0.5948	0.156	0.1557	1.8681	0.4392	5.2686
835.6	0.396684	0.5950	0.156	0.1557	1.8681	0.4394	5.2710
835.8	0.396819	0.5952	0.156	0.1557	1.8681	0.4396	5.2735
836	0.396954	0.5954	0.156	0.1557	1.8681	0.4398	5.2759
836.2	0.397089	0.5956	0.156	0.1557	1.8681	0.4400	5.2783
836.4	0.397225	0.5958	0.156	0.1557	1.8681	0.4402	5.2808
836.6	0.39736	0.5960	0.156	0.1557	1.8681	0.4404	5.2832
836.8	0.397495	0.5962	0.156	0.1557	1.8681	0.4406	5.2856
837	0.397631	0.5964	0.156	0.1557	1.8681	0.4408	5.2881
837.2	0.397766	0.5966	0.156	0.1557	1.8681	0.4410	5.2905
837.4	0.397902	0.5969	0.156	0.1557	1.8681	0.4412	5.2930
837.6	0.398037	0.5971	0.156	0.1557	1.8681	0.4414	5.2954
837.8	0.398173	0.5973	0.156	0.1557	1.8681	0.4416	5.2978
838	0.398308	0.5975	0.156	0.1557	1.8681	0.4418	5.3003
838.2	0.398444	0.5977	0.156	0.1557	1.8681	0.4420	5.3027
838.4	0.39858	0.5979	0.156	0.1557	1.8681	0.4422	5.3052
838.6	0.398715	0.5981	0.156	0.1557	1.8681	0.4424	5.3076
838.8	0.398851	0.5983	0.156	0.1557	1.8681	0.4426	5.3100
839	0.398987	0.5985	0.156	0.1557	1.8681	0.4428	5.3125
839.2	0.399123	0.5987	0.156	0.1557	1.8681	0.4430	5.3149
839.4	0.399258	0.5989	0.156	0.1557	1.8681	0.4432	5.3174
839.6	0.399394	0.5991	0.156	0.1557	1.8681	0.4434	5.3198
839.8	0.39953	0.5993	0.156	0.1557	1.8681	0.4436	5.3223
840	0.399666	0.5995	0.156	0.1557	1.8681	0.4438	5.3247
840.2	0.399802	0.5997	0.156	0.1557	1.8681	0.4440	5.3272
840.4	0.399938	0.5999	0.156	0.1557	1.8681	0.4442	5.3296
840.6	0.400075	0.6001	0.156	0.1557	1.8681	0.4444	5.3321
840.8	0.400211	0.6003	0.156	0.1557	1.8681	0.4446	5.3345
841	0.400347	0.6005	0.156	0.1557	1.8681	0.4448	5.3370
841.2	0.400483	0.6007	0.156	0.1557	1.8681	0.4451	5.3394
841.4	0.400619	0.6009	0.156	0.1557	1.8681	0.4453	5.3419
841.6	0.400756	0.6011	0.156	0.1557	1.8681	0.4455	5.3443
841.8	0.400892	0.6013	0.156	0.1557	1.8681	0.4457	5.3468
842	0.401029	0.6015	0.156	0.1557	1.8681	0.4459	5.3492
842.2	0.401165	0.6017	0.156	0.1557	1.8681	0.4461	5.3517
842.4	0.401301	0.6020	0.156	0.1557	1.8681	0.4463	5.3541
842.6	0.401438	0.6022	0.156	0.1557	1.8681	0.4465	5.3566
842.8	0.401575	0.6024	0.156	0.1557	1.8681	0.4467	5.3591
843	0.401711	0.6026	0.156	0.1557	1.8681	0.4469	5.3615
843.2	0.401848	0.6028	0.156	0.1557	1.8681	0.4471	5.3640
843.4	0.401984	0.6030	0.156	0.1557	1.8681	0.4473	5.3664
843.6	0.402121	0.6032	0.156	0.1557	1.8681	0.4475	5.3689
843.8	0.402258	0.6034	0.156	0.1557	1.8681	0.4477	5.3714
844	0.402395	0.6036	0.156	0.1557	1.8681	0.4479	5.3738
844.2	0.402532	0.6038	0.156	0.1557	1.8681	0.4481	5.3763
844.4	0.402669	0.6040	0.156	0.1557	1.8681	0.4483	5.3787

844.6	0.402806	0.6042	0.156	0.1557	1.8681	0.4485	5.3812
844.8	0.402942	0.6044	0.156	0.1557	1.8681	0.4487	5.3837
845	0.40308	0.6046	0.156	0.1557	1.8681	0.4489	5.3861
845.2	0.403217	0.6048	0.156	0.1557	1.8681	0.4492	5.3886
845.4	0.403354	0.6050	0.156	0.1557	1.8681	0.4494	5.3911
845.6	0.403491	0.6052	0.156	0.1557	1.8681	0.4496	5.3935
845.8	0.403628	0.6054	0.156	0.1557	1.8681	0.4498	5.3960
846	0.403765	0.6056	0.156	0.1557	1.8681	0.4500	5.3985
846.2	0.403903	0.6059	0.156	0.1557	1.8681	0.4502	5.4010
846.4	0.40404	0.6061	0.156	0.1557	1.8681	0.4504	5.4034
846.6	0.404177	0.6063	0.156	0.1557	1.8681	0.4506	5.4059
846.8	0.404315	0.6065	0.156	0.1557	1.8681	0.4508	5.4084
847	0.404452	0.6067	0.156	0.1557	1.8681	0.4510	5.4108
847.2	0.40459	0.6069	0.156	0.1557	1.8681	0.4512	5.4133
847.4	0.404727	0.6071	0.156	0.1557	1.8681	0.4514	5.4158
847.6	0.404865	0.6073	0.156	0.1557	1.8681	0.4516	5.4183
847.8	0.405002	0.6075	0.156	0.1557	1.8681	0.4518	5.4207
848	0.40514	0.6077	0.156	0.1557	1.8681	0.4520	5.4232
848.2	0.405278	0.6079	0.156	0.1557	1.8681	0.4522	5.4257
848.4	0.405415	0.6081	0.156	0.1557	1.8681	0.4525	5.4282
848.6	0.405553	0.6083	0.156	0.1557	1.8681	0.4527	5.4307
848.8	0.405691	0.6085	0.156	0.1557	1.8681	0.4529	5.4331
849	0.405829	0.6087	0.156	0.1557	1.8681	0.4531	5.4356
849.2	0.405967	0.6090	0.156	0.1557	1.8681	0.4533	5.4381
849.4	0.406105	0.6092	0.156	0.1557	1.8681	0.4535	5.4406
849.6	0.406243	0.6094	0.156	0.1557	1.8681	0.4537	5.4431
849.8	0.406381	0.6096	0.156	0.1557	1.8681	0.4539	5.4456
850	0.406519	0.6098	0.156	0.1557	1.8681	0.4541	5.4480
850.2	0.406657	0.6100	0.156	0.1557	1.8681	0.4543	5.4505
850.4	0.406795	0.6102	0.156	0.1557	1.8681	0.4545	5.4530
850.6	0.406933	0.6104	0.156	0.1557	1.8681	0.4547	5.4555
850.8	0.407072	0.6106	0.156	0.1557	1.8681	0.4549	5.4580
851	0.40721	0.6108	0.156	0.1557	1.8681	0.4551	5.4605
851.2	0.407348	0.6110	0.156	0.1557	1.8681	0.4554	5.4630
851.4	0.407487	0.6112	0.156	0.1557	1.8681	0.4556	5.4655
851.6	0.407625	0.6114	0.156	0.1557	1.8681	0.4558	5.4680
851.8	0.407764	0.6116	0.156	0.1557	1.8681	0.4560	5.4704
852	0.407902	0.6119	0.156	0.1557	1.8681	0.4562	5.4729
852.2	0.408041	0.6121	0.156	0.1557	1.8681	0.4564	5.4754
852.4	0.408179	0.6123	0.156	0.1557	1.8681	0.4566	5.4779
852.6	0.408318	0.6125	0.156	0.1557	1.8681	0.4568	5.4804
852.8	0.408457	0.6127	0.156	0.1557	1.8681	0.4570	5.4829
853	0.408595	0.6129	0.156	0.1557	1.8681	0.4572	5.4854
853.2	0.408734	0.6131	0.156	0.1557	1.8681	0.4574	5.4879
853.4	0.408873	0.6133	0.156	0.1557	1.8681	0.4576	5.4904
853.6	0.409012	0.6135	0.156	0.1557	1.8681	0.4578	5.4929
853.8	0.409151	0.6137	0.156	0.1557	1.8681	0.4581	5.4954

854	0.40929	0.6139	0.156	0.1557	1.8681	0.4583	5.4979
854.2	0.409429	0.6141	0.156	0.1557	1.8681	0.4585	5.5004
854.4	0.409568	0.6144	0.156	0.1557	1.8681	0.4587	5.5029
854.6	0.409707	0.6146	0.156	0.1557	1.8681	0.4589	5.5054
854.8	0.409846	0.6148	0.156	0.1557	1.8681	0.4591	5.5079
855	0.409985	0.6150	0.156	0.1557	1.8681	0.4593	5.5104
855.2	0.410124	0.6152	0.156	0.1557	1.8681	0.4595	5.5129
855.4	0.410264	0.6154	0.156	0.1557	1.8681	0.4597	5.5154
855.6	0.410403	0.6156	0.156	0.1557	1.8681	0.4599	5.5179
855.8	0.410542	0.6158	0.156	0.1557	1.8681	0.4601	5.5205
856	0.410682	0.6160	0.156	0.1557	1.8681	0.4604	5.5230
856.2	0.410821	0.6162	0.156	0.1557	1.8681	0.4606	5.5255
856.4	0.410961	0.6164	0.156	0.1557	1.8681	0.4608	5.5280
856.6	0.4111	0.6167	0.156	0.1557	1.8681	0.4610	5.5305
856.8	0.41124	0.6169	0.156	0.1557	1.8681	0.4612	5.5330
857	0.411379	0.6171	0.156	0.1557	1.8681	0.4614	5.5355
857.2	0.411519	0.6173	0.156	0.1557	1.8681	0.4616	5.5380
857.4	0.411659	0.6175	0.156	0.1557	1.8681	0.4618	5.5405
857.6	0.411798	0.6177	0.156	0.1557	1.8681	0.4620	5.5431
857.8	0.411938	0.6179	0.156	0.1557	1.8681	0.4622	5.5456
858	0.412078	0.6181	0.156	0.1557	1.8681	0.4624	5.5481
858.2	0.412218	0.6183	0.156	0.1557	1.8681	0.4627	5.5506
858.4	0.412358	0.6185	0.156	0.1557	1.8681	0.4629	5.5531
858.6	0.412498	0.6187	0.156	0.1557	1.8681	0.4631	5.5556
858.8	0.412638	0.6190	0.156	0.1557	1.8681	0.4633	5.5582
859	0.412778	0.6192	0.156	0.1557	1.8681	0.4635	5.5607
859.2	0.412918	0.6194	0.156	0.1557	1.8681	0.4637	5.5632
859.4	0.413058	0.6196	0.156	0.1557	1.8681	0.4639	5.5657
859.6	0.413198	0.6198	0.156	0.1557	1.8681	0.4641	5.5683
859.8	0.413339	0.6200	0.156	0.1557	1.8681	0.4643	5.5708
860	0.413479	0.6202	0.156	0.1557	1.8681	0.4645	5.5733
860.2	0.413619	0.6204	0.156	0.1557	1.8681	0.4648	5.5758
860.4	0.41376	0.6206	0.156	0.1557	1.8681	0.4650	5.5784
860.6	0.4139	0.6209	0.156	0.1557	1.8681	0.4652	5.5809
860.8	0.414041	0.6211	0.156	0.1557	1.8681	0.4654	5.5834
861	0.414181	0.6213	0.156	0.1557	1.8681	0.4656	5.5859
861.2	0.414322	0.6215	0.156	0.1557	1.8681	0.4658	5.5885
861.4	0.414462	0.6217	0.156	0.1557	1.8681	0.4660	5.5910
861.6	0.414603	0.6219	0.156	0.1557	1.8681	0.4662	5.5935
861.8	0.414744	0.6221	0.156	0.1557	1.8681	0.4664	5.5961
862	0.414884	0.6223	0.156	0.1557	1.8681	0.4667	5.5986
862.2	0.415025	0.6225	0.156	0.1557	1.8681	0.4669	5.6011
862.4	0.415166	0.6227	0.156	0.1557	1.8681	0.4671	5.6037
862.6	0.415307	0.6230	0.156	0.1557	1.8681	0.4673	5.6062
862.8	0.415448	0.6232	0.156	0.1557	1.8681	0.4675	5.6087
863	0.415589	0.6234	0.156	0.1557	1.8681	0.4677	5.6113
863.2	0.41573	0.6236	0.156	0.1557	1.8681	0.4679	5.6138

863.4	0.415871	0.6238	0.156	0.1557	1.8681	0.4681	5.6164
863.6	0.416012	0.6240	0.156	0.1557	1.8681	0.4683	5.6189
863.8	0.416153	0.6242	0.156	0.1557	1.8681	0.4686	5.6214
864	0.416294	0.6244	0.156	0.1557	1.8681	0.4688	5.6240
864.2	0.416436	0.6247	0.156	0.1557	1.8681	0.4690	5.6265
864.4	0.416577	0.6249	0.156	0.1557	1.8681	0.4692	5.6291
864.6	0.416718	0.6251	0.156	0.1557	1.8681	0.4694	5.6316
864.8	0.41686	0.6253	0.156	0.1557	1.8681	0.4696	5.6341
865	0.417001	0.6255	0.156	0.1557	1.8681	0.4698	5.6367
865.2	0.417143	0.6257	0.156	0.1557	1.8681	0.4700	5.6392
865.4	0.417284	0.6259	0.156	0.1557	1.8681	0.4703	5.6418
865.6	0.417426	0.6261	0.156	0.1557	1.8681	0.4705	5.6443
865.8	0.417567	0.6264	0.156	0.1557	1.8681	0.4707	5.6469
866	0.417709	0.6266	0.156	0.1557	1.8681	0.4709	5.6494
866.2	0.417851	0.6268	0.156	0.1557	1.8681	0.4711	5.6520
866.4	0.417992	0.6270	0.156	0.1557	1.8681	0.4713	5.6545
866.6	0.418134	0.6272	0.156	0.1557	1.8681	0.4715	5.6571
866.8	0.418276	0.6274	0.156	0.1557	1.8681	0.4717	5.6596
867	0.418418	0.6276	0.156	0.1557	1.8681	0.4720	5.6622
867.2	0.41856	0.6278	0.156	0.1557	1.8681	0.4722	5.6647
867.4	0.418702	0.6281	0.156	0.1557	1.8681	0.4724	5.6673
867.6	0.418844	0.6283	0.156	0.1557	1.8681	0.4726	5.6699
867.8	0.418986	0.6285	0.156	0.1557	1.8681	0.4728	5.6724
868	0.419128	0.6287	0.156	0.1557	1.8681	0.4730	5.6750
868.2	0.41927	0.6289	0.156	0.1557	1.8681	0.4732	5.6775
868.4	0.419413	0.6291	0.156	0.1557	1.8681	0.4734	5.6801
868.6	0.419555	0.6293	0.156	0.1557	1.8681	0.4737	5.6827
868.8	0.419697	0.6295	0.156	0.1557	1.8681	0.4739	5.6852
869	0.41984	0.6298	0.156	0.1557	1.8681	0.4741	5.6878
869.2	0.419982	0.6300	0.156	0.1557	1.8681	0.4743	5.6903
869.4	0.420124	0.6302	0.156	0.1557	1.8681	0.4745	5.6929
869.6	0.420267	0.6304	0.156	0.1557	1.8681	0.4747	5.6955
869.8	0.420409	0.6306	0.156	0.1557	1.8681	0.4749	5.6980
870	0.420552	0.6308	0.156	0.1557	1.8681	0.4752	5.7006
870.2	0.420695	0.6310	0.156	0.1557	1.8681	0.4754	5.7032
870.4	0.420837	0.6313	0.156	0.1557	1.8681	0.4756	5.7057
870.6	0.42098	0.6315	0.156	0.1557	1.8681	0.4758	5.7083
870.8	0.421123	0.6317	0.156	0.1557	1.8681	0.4760	5.7109
871	0.421266	0.6319	0.156	0.1557	1.8681	0.4762	5.7134
871.2	0.421409	0.6321	0.156	0.1557	1.8681	0.4764	5.7160
871.4	0.421552	0.6323	0.156	0.1557	1.8681	0.4767	5.7186
871.6	0.421695	0.6325	0.156	0.1557	1.8681	0.4769	5.7212
871.8	0.421838	0.6328	0.156	0.1557	1.8681	0.4771	5.7237
872	0.421981	0.6330	0.156	0.1557	1.8681	0.4773	5.7263
872.2	0.422124	0.6332	0.156	0.1557	1.8681	0.4775	5.7289
872.4	0.422267	0.6334	0.156	0.1557	1.8681	0.4777	5.7315
872.6	0.42241	0.6336	0.156	0.1557	1.8681	0.4779	5.7340

872.8	0.422554	0.6338	0.156	0.1557	1.8681	0.4782	5.7366
873	0.422697	0.6340	0.156	0.1557	1.8681	0.4784	5.7392
873.2	0.42284	0.6343	0.156	0.1557	1.8681	0.4786	5.7418
873.4	0.422984	0.6345	0.156	0.1557	1.8681	0.4788	5.7444
873.6	0.423127	0.6347	0.156	0.1557	1.8681	0.4790	5.7469
873.8	0.423271	0.6349	0.156	0.1557	1.8681	0.4792	5.7495
874	0.423414	0.6351	0.156	0.1557	1.8681	0.4795	5.7521
874.2	0.423558	0.6353	0.156	0.1557	1.8681	0.4797	5.7547
874.4	0.423701	0.6356	0.156	0.1557	1.8681	0.4799	5.7573
874.6	0.423845	0.6358	0.156	0.1557	1.8681	0.4801	5.7599
874.8	0.423989	0.6360	0.156	0.1557	1.8681	0.4803	5.7625
875	0.424133	0.6362	0.156	0.1557	1.8681	0.4805	5.7650
875.2	0.424277	0.6364	0.156	0.1557	1.8681	0.4807	5.7676
875.4	0.424421	0.6366	0.156	0.1557	1.8681	0.4810	5.7702
875.6	0.424565	0.6368	0.156	0.1557	1.8681	0.4812	5.7728
875.8	0.424709	0.6371	0.156	0.1557	1.8681	0.4814	5.7754
876	0.424853	0.6373	0.156	0.1557	1.8681	0.4816	5.7780
876.2	0.424997	0.6375	0.156	0.1557	1.8681	0.4818	5.7806
876.4	0.425141	0.6377	0.156	0.1557	1.8681	0.4820	5.7832
876.6	0.425285	0.6379	0.156	0.1557	1.8681	0.4823	5.7858
876.8	0.425429	0.6381	0.156	0.1557	1.8681	0.4825	5.7884
877	0.425574	0.6384	0.156	0.1557	1.8681	0.4827	5.7910
877.2	0.425718	0.6386	0.156	0.1557	1.8681	0.4829	5.7936
877.4	0.425862	0.6388	0.156	0.1557	1.8681	0.4831	5.7962
877.6	0.426007	0.6390	0.156	0.1557	1.8681	0.4833	5.7988
877.8	0.426151	0.6392	0.156	0.1557	1.8681	0.4836	5.8014
878	0.426296	0.6394	0.156	0.1557	1.8681	0.4838	5.8040
878.2	0.42644	0.6397	0.156	0.1557	1.8681	0.4840	5.8066
878.4	0.426585	0.6399	0.156	0.1557	1.8681	0.4842	5.8092
878.6	0.42673	0.6401	0.156	0.1557	1.8681	0.4844	5.8118
878.8	0.426874	0.6403	0.156	0.1557	1.8681	0.4846	5.8144
879	0.427019	0.6405	0.156	0.1557	1.8681	0.4849	5.8170
879.2	0.427164	0.6407	0.156	0.1557	1.8681	0.4851	5.8196
879.4	0.427309	0.6410	0.156	0.1557	1.8681	0.4853	5.8222
879.6	0.427454	0.6412	0.156	0.1557	1.8681	0.4855	5.8248
879.8	0.427599	0.6414	0.156	0.1557	1.8681	0.4857	5.8274
880	0.427744	0.6416	0.156	0.1557	1.8681	0.4859	5.8300
880.2	0.427889	0.6418	0.156	0.1557	1.8681	0.4862	5.8326
880.4	0.428034	0.6421	0.156	0.1557	1.8681	0.4864	5.8353
880.6	0.428179	0.6423	0.156	0.1557	1.8681	0.4866	5.8379
880.8	0.428325	0.6425	0.156	0.1557	1.8681	0.4868	5.8405
881	0.42847	0.6427	0.156	0.1557	1.8681	0.4870	5.8431
881.2	0.428615	0.6429	0.156	0.1557	1.8681	0.4873	5.8457
881.4	0.428761	0.6431	0.156	0.1557	1.8681	0.4875	5.8483
881.6	0.428906	0.6434	0.156	0.1557	1.8681	0.4877	5.8509
881.8	0.429052	0.6436	0.156	0.1557	1.8681	0.4879	5.8536
882	0.429197	0.6438	0.156	0.1557	1.8681	0.4881	5.8562

882.2	0.429343	0.6440	0.156	0.1557	1.8681	0.4883	5.8588
882.4	0.429488	0.6442	0.156	0.1557	1.8681	0.4886	5.8614
882.6	0.429634	0.6445	0.156	0.1557	1.8681	0.4888	5.8640
882.8	0.42978	0.6447	0.156	0.1557	1.8681	0.4890	5.8667
883	0.429926	0.6449	0.156	0.1557	1.8681	0.4892	5.8693
883.2	0.430072	0.6451	0.156	0.1557	1.8681	0.4894	5.8719
883.4	0.430217	0.6453	0.156	0.1557	1.8681	0.4897	5.8745
883.6	0.430363	0.6455	0.156	0.1557	1.8681	0.4899	5.8772
883.8	0.430509	0.6458	0.156	0.1557	1.8681	0.4901	5.8798
884	0.430656	0.6460	0.156	0.1557	1.8681	0.4903	5.8824
884.2	0.430802	0.6462	0.156	0.1557	1.8681	0.4905	5.8851
884.4	0.430948	0.6464	0.156	0.1557	1.8681	0.4908	5.8877
884.6	0.431094	0.6466	0.156	0.1557	1.8681	0.4910	5.8903
884.8	0.43124	0.6469	0.156	0.1557	1.8681	0.4912	5.8930
885	0.431387	0.6471	0.156	0.1557	1.8681	0.4914	5.8956
885.2	0.431533	0.6473	0.156	0.1557	1.8681	0.4916	5.8982
885.4	0.431679	0.6475	0.156	0.1557	1.8681	0.4918	5.9009
885.6	0.431826	0.6477	0.156	0.1557	1.8681	0.4921	5.9035
885.8	0.431972	0.6480	0.156	0.1557	1.8681	0.4923	5.9061
886	0.432119	0.6482	0.156	0.1557	1.8681	0.4925	5.9088
886.2	0.432266	0.6484	0.156	0.1557	1.8681	0.4927	5.9114
886.4	0.432412	0.6486	0.156	0.1557	1.8681	0.4929	5.9140
886.6	0.432559	0.6488	0.156	0.1557	1.8681	0.4932	5.9167
886.8	0.432706	0.6491	0.156	0.1557	1.8681	0.4934	5.9193
887	0.432853	0.6493	0.156	0.1557	1.8681	0.4936	5.9220
887.2	0.432999	0.6495	0.156	0.1557	1.8681	0.4938	5.9246
887.4	0.433146	0.6497	0.156	0.1557	1.8681	0.4940	5.9273
887.6	0.433293	0.6499	0.156	0.1557	1.8681	0.4943	5.9299
887.8	0.43344	0.6502	0.156	0.1557	1.8681	0.4945	5.9325
888	0.433588	0.6504	0.156	0.1557	1.8681	0.4947	5.9352
888.2	0.433735	0.6506	0.156	0.1557	1.8681	0.4949	5.9378
888.4	0.433882	0.6508	0.156	0.1557	1.8681	0.4952	5.9405
888.6	0.434029	0.6510	0.156	0.1557	1.8681	0.4954	5.9431
888.8	0.434176	0.6513	0.156	0.1557	1.8681	0.4956	5.9458
889	0.434324	0.6515	0.156	0.1557	1.8681	0.4958	5.9484
889.2	0.434471	0.6517	0.156	0.1557	1.8681	0.4960	5.9511
889.4	0.434619	0.6519	0.156	0.1557	1.8681	0.4963	5.9538
889.6	0.434766	0.6521	0.156	0.1557	1.8681	0.4965	5.9564
889.8	0.434914	0.6524	0.156	0.1557	1.8681	0.4967	5.9591
890	0.435061	0.6526	0.156	0.1557	1.8681	0.4969	5.9617
890.2	0.435209	0.6528	0.156	0.1557	1.8681	0.4971	5.9644
890.4	0.435357	0.6530	0.156	0.1557	1.8681	0.4974	5.9670
890.6	0.435505	0.6533	0.156	0.1557	1.8681	0.4976	5.9697
890.8	0.435652	0.6535	0.156	0.1557	1.8681	0.4978	5.9724
891	0.4358	0.6537	0.156	0.1557	1.8681	0.4980	5.9750
891.2	0.435948	0.6539	0.156	0.1557	1.8681	0.4983	5.9777
891.4	0.436096	0.6541	0.156	0.1557	1.8681	0.4985	5.9803

891.6	0.436244	0.6544	0.156	0.1557	1.8681	0.4987	5.9830
891.8	0.436392	0.6546	0.156	0.1557	1.8681	0.4989	5.9857
892	0.43654	0.6548	0.156	0.1557	1.8681	0.4991	5.9883
892.2	0.436689	0.6550	0.156	0.1557	1.8681	0.4994	5.9910
892.4	0.436837	0.6553	0.156	0.1557	1.8681	0.4996	5.9937
892.6	0.436985	0.6555	0.156	0.1557	1.8681	0.4998	5.9963
892.8	0.437134	0.6557	0.156	0.1557	1.8681	0.5000	5.9990
893	0.437282	0.6559	0.156	0.1557	1.8681	0.5003	6.0017
893.2	0.437431	0.6561	0.156	0.1557	1.8681	0.5005	6.0044
893.4	0.437579	0.6564	0.156	0.1557	1.8681	0.5007	6.0070
893.6	0.437728	0.6566	0.156	0.1557	1.8681	0.5009	6.0097
893.8	0.437876	0.6568	0.156	0.1557	1.8681	0.5011	6.0124
894	0.438025	0.6570	0.156	0.1557	1.8681	0.5014	6.0151
894.2	0.438174	0.6573	0.156	0.1557	1.8681	0.5016	6.0177
894.4	0.438323	0.6575	0.156	0.1557	1.8681	0.5018	6.0204
894.6	0.438471	0.6577	0.156	0.1557	1.8681	0.5020	6.0231
894.8	0.43862	0.6579	0.156	0.1557	1.8681	0.5023	6.0258
895	0.438769	0.6582	0.156	0.1557	1.8681	0.5025	6.0285
895.2	0.438918	0.6584	0.156	0.1557	1.8681	0.5027	6.0311
895.4	0.439067	0.6586	0.156	0.1557	1.8681	0.5029	6.0338
895.6	0.439216	0.6588	0.156	0.1557	1.8681	0.5032	6.0365
895.8	0.439366	0.6590	0.156	0.1557	1.8681	0.5034	6.0392
896	0.439515	0.6593	0.156	0.1557	1.8681	0.5036	6.0419
896.2	0.439664	0.6595	0.156	0.1557	1.8681	0.5038	6.0446
896.4	0.439814	0.6597	0.156	0.1557	1.8681	0.5040	6.0472
896.6	0.439963	0.6599	0.156	0.1557	1.8681	0.5043	6.0499
896.8	0.440112	0.6602	0.156	0.1557	1.8681	0.5045	6.0526
897	0.440262	0.6604	0.156	0.1557	1.8681	0.5047	6.0553
897.2	0.440411	0.6606	0.156	0.1557	1.8681	0.5049	6.0580
897.4	0.440561	0.6608	0.156	0.1557	1.8681	0.5052	6.0607
897.6	0.440711	0.6611	0.156	0.1557	1.8681	0.5054	6.0634
897.8	0.44086	0.6613	0.156	0.1557	1.8681	0.5056	6.0661
898	0.44101	0.6615	0.156	0.1557	1.8681	0.5058	6.0688
898.2	0.44116	0.6617	0.156	0.1557	1.8681	0.5061	6.0715
898.4	0.44131	0.6620	0.156	0.1557	1.8681	0.5063	6.0742
898.6	0.44146	0.6622	0.156	0.1557	1.8681	0.5065	6.0769
898.8	0.44161	0.6624	0.156	0.1557	1.8681	0.5067	6.0796
899	0.44176	0.6626	0.156	0.1557	1.8681	0.5070	6.0823
899.2	0.44191	0.6629	0.156	0.1557	1.8681	0.5072	6.0850
899.4	0.44206	0.6631	0.156	0.1557	1.8681	0.5074	6.0877
899.6	0.442211	0.6633	0.156	0.1557	1.8681	0.5076	6.0904
899.8	0.442361	0.6635	0.156	0.1557	1.8681	0.5079	6.0931
900	0.442511	0.6638	0.156	0.1557	1.8681	0.5081	6.0958
900.2	0.442662	0.6640	0.156	0.1557	1.8681	0.5083	6.0985
900.4	0.442812	0.6642	0.156	0.1557	1.8681	0.5085	6.1012
900.6	0.442963	0.6644	0.156	0.1557	1.8681	0.5088	6.1039
900.8	0.443113	0.6647	0.156	0.1557	1.8681	0.5090	6.1066

901	0.443264	0.6649	0.156	0.1557	1.8681	0.5092	6.1093
901.2	0.443414	0.6651	0.156	0.1557	1.8681	0.5095	6.1120
901.4	0.443565	0.6653	0.156	0.1557	1.8681	0.5097	6.1148
901.6	0.443716	0.6656	0.156	0.1557	1.8681	0.5099	6.1175
901.8	0.443867	0.6658	0.156	0.1557	1.8681	0.5101	6.1202
902	0.444018	0.6660	0.156	0.1557	1.8681	0.5104	6.1229
902.2	0.444169	0.6663	0.156	0.1557	1.8681	0.5106	6.1256
902.4	0.44432	0.6665	0.156	0.1557	1.8681	0.5108	6.1283
902.6	0.444471	0.6667	0.156	0.1557	1.8681	0.5110	6.1311
902.8	0.444622	0.6669	0.156	0.1557	1.8681	0.5113	6.1338
903	0.444773	0.6672	0.156	0.1557	1.8681	0.5115	6.1365
903.2	0.444924	0.6674	0.156	0.1557	1.8681	0.5117	6.1392
903.4	0.445076	0.6676	0.156	0.1557	1.8681	0.5119	6.1419
903.6	0.445227	0.6678	0.156	0.1557	1.8681	0.5122	6.1447
903.8	0.445378	0.6681	0.156	0.1557	1.8681	0.5124	6.1474
904	0.44553	0.6683	0.156	0.1557	1.8681	0.5126	6.1501
904.2	0.445681	0.6685	0.156	0.1557	1.8681	0.5129	6.1528
904.4	0.445833	0.6687	0.156	0.1557	1.8681	0.5131	6.1556
904.6	0.445985	0.6690	0.156	0.1557	1.8681	0.5133	6.1583
904.8	0.446136	0.6692	0.156	0.1557	1.8681	0.5135	6.1610
905	0.446288	0.6694	0.156	0.1557	1.8681	0.5138	6.1638
905.2	0.44644	0.6697	0.156	0.1557	1.8681	0.5140	6.1665
905.4	0.446592	0.6699	0.156	0.1557	1.8681	0.5142	6.1692
905.6	0.446744	0.6701	0.156	0.1557	1.8681	0.5144	6.1720
905.8	0.446896	0.6703	0.156	0.1557	1.8681	0.5147	6.1747
906	0.447048	0.6706	0.156	0.1557	1.8681	0.5149	6.1774
906.2	0.4472	0.6708	0.156	0.1557	1.8681	0.5151	6.1802
906.4	0.447352	0.6710	0.156	0.1557	1.8681	0.5154	6.1829
906.6	0.447504	0.6713	0.156	0.1557	1.8681	0.5156	6.1857
906.8	0.447657	0.6715	0.156	0.1557	1.8681	0.5158	6.1884
907	0.447809	0.6717	0.156	0.1557	1.8681	0.5160	6.1911
907.2	0.447961	0.6719	0.156	0.1557	1.8681	0.5163	6.1939
907.4	0.448114	0.6722	0.156	0.1557	1.8681	0.5165	6.1966
907.6	0.448266	0.6724	0.156	0.1557	1.8681	0.5167	6.1994
907.8	0.448419	0.6726	0.156	0.1557	1.8681	0.5170	6.2021
908	0.448572	0.6729	0.156	0.1557	1.8681	0.5172	6.2049
908.2	0.448724	0.6731	0.156	0.1557	1.8681	0.5174	6.2076
908.4	0.448877	0.6733	0.156	0.1557	1.8681	0.5176	6.2104
908.6	0.44903	0.6735	0.156	0.1557	1.8681	0.5179	6.2131
908.8	0.449183	0.6738	0.156	0.1557	1.8681	0.5181	6.2159
909	0.449336	0.6740	0.156	0.1557	1.8681	0.5183	6.2186
909.2	0.449489	0.6742	0.156	0.1557	1.8681	0.5186	6.2214
909.4	0.449642	0.6745	0.156	0.1557	1.8681	0.5188	6.2241
909.6	0.449795	0.6747	0.156	0.1557	1.8681	0.5190	6.2269
909.8	0.449948	0.6749	0.156	0.1557	1.8681	0.5193	6.2296
910	0.450101	0.6752	0.156	0.1557	1.8681	0.5195	6.2324
910.2	0.450255	0.6754	0.156	0.1557	1.8681	0.5197	6.2351

910.4	0.450408	0.6756	0.156	0.1557	1.8681	0.5199	6.2379
910.6	0.450561	0.6758	0.156	0.1557	1.8681	0.5202	6.2407
910.8	0.450715	0.6761	0.156	0.1557	1.8681	0.5204	6.2434
911	0.450868	0.6763	0.156	0.1557	1.8681	0.5206	6.2462
911.2	0.451022	0.6765	0.156	0.1557	1.8681	0.5209	6.2490
911.4	0.451176	0.6768	0.156	0.1557	1.8681	0.5211	6.2517
911.6	0.451329	0.6770	0.156	0.1557	1.8681	0.5213	6.2545
911.8	0.451483	0.6772	0.156	0.1557	1.8681	0.5216	6.2573
912	0.451637	0.6775	0.156	0.1557	1.8681	0.5218	6.2600
912.2	0.451791	0.6777	0.156	0.1557	1.8681	0.5220	6.2628
912.4	0.451945	0.6779	0.156	0.1557	1.8681	0.5222	6.2656
912.6	0.452099	0.6781	0.156	0.1557	1.8681	0.5225	6.2683
912.8	0.452253	0.6784	0.156	0.1557	1.8681	0.5227	6.2711
913	0.452407	0.6786	0.156	0.1557	1.8681	0.5229	6.2739
913.2	0.452561	0.6788	0.156	0.1557	1.8681	0.5232	6.2767
913.4	0.452715	0.6791	0.156	0.1557	1.8681	0.5234	6.2794
913.6	0.45287	0.6793	0.156	0.1557	1.8681	0.5236	6.2822
913.8	0.453024	0.6795	0.156	0.1557	1.8681	0.5239	6.2850
914	0.453179	0.6798	0.156	0.1557	1.8681	0.5241	6.2878
914.2	0.453333	0.6800	0.156	0.1557	1.8681	0.5243	6.2905
914.4	0.453488	0.6802	0.156	0.1557	1.8681	0.5246	6.2933
914.6	0.453642	0.6805	0.156	0.1557	1.8681	0.5248	6.2961
914.8	0.453797	0.6807	0.156	0.1557	1.8681	0.5250	6.2989
915	0.453952	0.6809	0.156	0.1557	1.8681	0.5253	6.3017
915.2	0.454106	0.6812	0.156	0.1557	1.8681	0.5255	6.3045
915.4	0.454261	0.6814	0.156	0.1557	1.8681	0.5257	6.3073
915.6	0.454416	0.6816	0.156	0.1557	1.8681	0.5260	6.3100
915.8	0.454571	0.6819	0.156	0.1557	1.8681	0.5262	6.3128
916	0.454726	0.6821	0.156	0.1557	1.8681	0.5264	6.3156
916.2	0.454881	0.6823	0.156	0.1557	1.8681	0.5267	6.3184
916.4	0.455037	0.6826	0.156	0.1557	1.8681	0.5269	6.3212
916.6	0.455192	0.6828	0.156	0.1557	1.8681	0.5271	6.3240
916.8	0.455347	0.6830	0.156	0.1557	1.8681	0.5273	6.3268
917	0.455502	0.6833	0.156	0.1557	1.8681	0.5276	6.3296
917.2	0.455658	0.6835	0.156	0.1557	1.8681	0.5278	6.3324
917.4	0.455813	0.6837	0.156	0.1557	1.8681	0.5280	6.3352
917.6	0.455969	0.6840	0.156	0.1557	1.8681	0.5283	6.3380
917.8	0.456125	0.6842	0.156	0.1557	1.8681	0.5285	6.3408
918	0.45628	0.6844	0.156	0.1557	1.8681	0.5287	6.3436
918.2	0.456436	0.6847	0.156	0.1557	1.8681	0.5290	6.3464
918.4	0.456592	0.6849	0.156	0.1557	1.8681	0.5292	6.3492
918.6	0.456748	0.6851	0.156	0.1557	1.8681	0.5295	6.3520
918.8	0.456903	0.6854	0.156	0.1557	1.8681	0.5297	6.3548
919	0.457059	0.6856	0.156	0.1557	1.8681	0.5299	6.3576
919.2	0.457216	0.6858	0.156	0.1557	1.8681	0.5302	6.3604
919.4	0.457372	0.6861	0.156	0.1557	1.8681	0.5304	6.3632
919.6	0.457528	0.6863	0.156	0.1557	1.8681	0.5306	6.3660

919.8	0.457684	0.6865	0.156	0.1557	1.8681	0.5309	6.3689
920	0.45784	0.6868	0.156	0.1557	1.8681	0.5311	6.3717
920.2	0.457997	0.6870	0.156	0.1557	1.8681	0.5313	6.3745
920.4	0.458153	0.6872	0.156	0.1557	1.8681	0.5316	6.3773
920.6	0.45831	0.6875	0.156	0.1557	1.8681	0.5318	6.3801
920.8	0.458466	0.6877	0.156	0.1557	1.8681	0.5320	6.3829
921	0.458623	0.6879	0.156	0.1557	1.8681	0.5323	6.3857
921.2	0.458779	0.6882	0.156	0.1557	1.8681	0.5325	6.3886
921.4	0.458936	0.6884	0.156	0.1557	1.8681	0.5327	6.3914
921.6	0.459093	0.6886	0.156	0.1557	1.8681	0.5330	6.3942
921.8	0.45925	0.6889	0.156	0.1557	1.8681	0.5332	6.3970
922	0.459407	0.6891	0.156	0.1557	1.8681	0.5334	6.3999
922.2	0.459564	0.6893	0.156	0.1557	1.8681	0.5337	6.4027
922.4	0.459721	0.6896	0.156	0.1557	1.8681	0.5339	6.4055
922.6	0.459878	0.6898	0.156	0.1557	1.8681	0.5341	6.4083
922.8	0.460035	0.6901	0.156	0.1557	1.8681	0.5344	6.4112
923	0.460192	0.6903	0.156	0.1557	1.8681	0.5346	6.4140
923.2	0.46035	0.6905	0.156	0.1557	1.8681	0.5349	6.4168
923.4	0.460507	0.6908	0.156	0.1557	1.8681	0.5351	6.4197
923.6	0.460665	0.6910	0.156	0.1557	1.8681	0.5353	6.4225
923.8	0.460822	0.6912	0.156	0.1557	1.8681	0.5356	6.4253
924	0.46098	0.6915	0.156	0.1557	1.8681	0.5358	6.4282
924.2	0.461137	0.6917	0.156	0.1557	1.8681	0.5360	6.4310
924.4	0.461295	0.6919	0.156	0.1557	1.8681	0.5363	6.4338
924.6	0.461453	0.6922	0.156	0.1557	1.8681	0.5365	6.4367
924.8	0.461611	0.6924	0.156	0.1557	1.8681	0.5367	6.4395
925	0.461769	0.6927	0.156	0.1557	1.8681	0.5370	6.4424
925.2	0.461927	0.6929	0.156	0.1557	1.8681	0.5372	6.4452
925.4	0.462085	0.6931	0.156	0.1557	1.8681	0.5375	6.4480
925.6	0.462243	0.6934	0.156	0.1557	1.8681	0.5377	6.4509
925.8	0.462401	0.6936	0.156	0.1557	1.8681	0.5379	6.4537
926	0.462559	0.6938	0.156	0.1557	1.8681	0.5382	6.4566
926.2	0.462717	0.6941	0.156	0.1557	1.8681	0.5384	6.4594
926.4	0.462876	0.6943	0.156	0.1557	1.8681	0.5386	6.4623
926.6	0.463034	0.6946	0.156	0.1557	1.8681	0.5389	6.4651
926.8	0.463193	0.6948	0.156	0.1557	1.8681	0.5391	6.4680
927	0.463351	0.6950	0.156	0.1557	1.8681	0.5394	6.4708
927.2	0.46351	0.6953	0.156	0.1557	1.8681	0.5396	6.4737
927.4	0.463669	0.6955	0.156	0.1557	1.8681	0.5398	6.4766
927.6	0.463827	0.6957	0.156	0.1557	1.8681	0.5401	6.4794
927.8	0.463986	0.6960	0.156	0.1557	1.8681	0.5403	6.4823
928	0.464145	0.6962	0.156	0.1557	1.8681	0.5405	6.4851
928.2	0.464304	0.6965	0.156	0.1557	1.8681	0.5408	6.4880
928.4	0.464463	0.6967	0.156	0.1557	1.8681	0.5410	6.4908
928.6	0.464622	0.6969	0.156	0.1557	1.8681	0.5413	6.4937
928.8	0.464781	0.6972	0.156	0.1557	1.8681	0.5415	6.4966
929	0.464941	0.6974	0.156	0.1557	1.8681	0.5417	6.4994

929.2	0.4651	0.6976	0.156	0.1557	1.8681	0.5420	6.5023
929.4	0.465259	0.6979	0.156	0.1557	1.8681	0.5422	6.5052
929.6	0.465419	0.6981	0.156	0.1557	1.8681	0.5425	6.5080
929.8	0.465578	0.6984	0.156	0.1557	1.8681	0.5427	6.5109
930	0.465738	0.6986	0.156	0.1557	1.8681	0.5429	6.5138
930.2	0.465897	0.6988	0.156	0.1557	1.8681	0.5432	6.5167
930.4	0.466057	0.6991	0.156	0.1557	1.8681	0.5434	6.5195
930.6	0.466217	0.6993	0.156	0.1557	1.8681	0.5437	6.5224
930.8	0.466377	0.6996	0.156	0.1557	1.8681	0.5439	6.5253
931	0.466537	0.6998	0.156	0.1557	1.8681	0.5441	6.5282
931.2	0.466697	0.7000	0.156	0.1557	1.8681	0.5444	6.5310
931.4	0.466857	0.7003	0.156	0.1557	1.8681	0.5446	6.5339
931.6	0.467017	0.7005	0.156	0.1557	1.8681	0.5449	6.5368
931.8	0.467177	0.7008	0.156	0.1557	1.8681	0.5451	6.5397
932	0.467337	0.7010	0.156	0.1557	1.8681	0.5453	6.5426
932.2	0.467498	0.7012	0.156	0.1557	1.8681	0.5456	6.5455
932.4	0.467658	0.7015	0.156	0.1557	1.8681	0.5458	6.5483
932.6	0.467818	0.7017	0.156	0.1557	1.8681	0.5461	6.5512
932.8	0.467979	0.7020	0.156	0.1557	1.8681	0.5463	6.5541
933	0.46814	0.7022	0.156	0.1557	1.8681	0.5465	6.5570
933.2	0.4683	0.7025	0.156	0.1557	1.8681	0.5468	6.5599
933.4	0.468461	0.7027	0.156	0.1557	1.8681	0.5470	6.5628
933.6	0.468622	0.7029	0.156	0.1557	1.8681	0.5473	6.5657
933.8	0.468783	0.7032	0.156	0.1557	1.8681	0.5475	6.5686
934	0.468944	0.7034	0.156	0.1557	1.8681	0.5477	6.5715
934.2	0.469105	0.7037	0.156	0.1557	1.8681	0.5480	6.5744
934.4	0.469266	0.7039	0.156	0.1557	1.8681	0.5482	6.5773
934.6	0.469427	0.7041	0.156	0.1557	1.8681	0.5485	6.5802
934.8	0.469588	0.7044	0.156	0.1557	1.8681	0.5487	6.5831
935	0.469749	0.7046	0.156	0.1557	1.8681	0.5490	6.5860
935.2	0.469911	0.7049	0.156	0.1557	1.8681	0.5492	6.5889
935.4	0.470072	0.7051	0.156	0.1557	1.8681	0.5494	6.5918
935.6	0.470234	0.7054	0.156	0.1557	1.8681	0.5497	6.5947
935.8	0.470395	0.7056	0.156	0.1557	1.8681	0.5499	6.5976
936	0.470557	0.7058	0.156	0.1557	1.8681	0.5502	6.6005
936.2	0.470718	0.7061	0.156	0.1557	1.8681	0.5504	6.6034
936.4	0.47088	0.7063	0.156	0.1557	1.8681	0.5506	6.6063
936.6	0.471042	0.7066	0.156	0.1557	1.8681	0.5509	6.6092
936.8	0.471204	0.7068	0.156	0.1557	1.8681	0.5511	6.6122
937	0.471366	0.7070	0.156	0.1557	1.8681	0.5514	6.6151
937.2	0.471528	0.7073	0.156	0.1557	1.8681	0.5516	6.6180
937.4	0.47169	0.7075	0.156	0.1557	1.8681	0.5519	6.6209
937.6	0.471852	0.7078	0.156	0.1557	1.8681	0.5521	6.6238
937.8	0.472015	0.7080	0.156	0.1557	1.8681	0.5524	6.6267
938	0.472177	0.7083	0.156	0.1557	1.8681	0.5526	6.6297
938.2	0.472339	0.7085	0.156	0.1557	1.8681	0.5528	6.6326
938.4	0.472502	0.7088	0.156	0.1557	1.8681	0.5531	6.6355

938.6	0.472664	0.7090	0.156	0.1557	1.8681	0.5533	6.6384
938.8	0.472827	0.7092	0.156	0.1557	1.8681	0.5536	6.6414
939	0.47299	0.7095	0.156	0.1557	1.8681	0.5538	6.6443
939.2	0.473153	0.7097	0.156	0.1557	1.8681	0.5541	6.6472
939.4	0.473315	0.7100	0.156	0.1557	1.8681	0.5543	6.6502
939.6	0.473478	0.7102	0.156	0.1557	1.8681	0.5545	6.6531
939.8	0.473641	0.7105	0.156	0.1557	1.8681	0.5548	6.6560
940	0.473804	0.7107	0.156	0.1557	1.8681	0.5550	6.6590
940.2	0.473967	0.7110	0.156	0.1557	1.8681	0.5553	6.6619
940.4	0.474131	0.7112	0.156	0.1557	1.8681	0.5555	6.6648
940.6	0.474294	0.7114	0.156	0.1557	1.8681	0.5558	6.6678
940.8	0.474457	0.7117	0.156	0.1557	1.8681	0.5560	6.6707
941	0.474621	0.7119	0.156	0.1557	1.8681	0.5563	6.6736
941.2	0.474784	0.7122	0.156	0.1557	1.8681	0.5565	6.6766
941.4	0.474948	0.7124	0.156	0.1557	1.8681	0.5568	6.6795
941.6	0.475111	0.7127	0.156	0.1557	1.8681	0.5570	6.6825
941.8	0.475275	0.7129	0.156	0.1557	1.8681	0.5572	6.6854
942	0.475439	0.7132	0.156	0.1557	1.8681	0.5575	6.6884
942.2	0.475603	0.7134	0.156	0.1557	1.8681	0.5577	6.6913
942.4	0.475767	0.7137	0.156	0.1557	1.8681	0.5580	6.6943
942.6	0.475931	0.7139	0.156	0.1557	1.8681	0.5582	6.6972
942.8	0.476095	0.7141	0.156	0.1557	1.8681	0.5585	6.7002
943	0.476259	0.7144	0.156	0.1557	1.8681	0.5587	6.7031
943.2	0.476423	0.7146	0.156	0.1557	1.8681	0.5590	6.7061
943.4	0.476588	0.7149	0.156	0.1557	1.8681	0.5592	6.7090
943.6	0.476752	0.7151	0.156	0.1557	1.8681	0.5595	6.7120
943.8	0.476916	0.7154	0.156	0.1557	1.8681	0.5597	6.7150
944	0.477081	0.7156	0.156	0.1557	1.8681	0.5600	6.7179
944.2	0.477245	0.7159	0.156	0.1557	1.8681	0.5602	6.7209
944.4	0.47741	0.7161	0.156	0.1557	1.8681	0.5604	6.7238
944.6	0.477575	0.7164	0.156	0.1557	1.8681	0.5607	6.7268
944.8	0.47774	0.7166	0.156	0.1557	1.8681	0.5609	6.7298
945	0.477905	0.7169	0.156	0.1557	1.8681	0.5612	6.7327
945.2	0.47807	0.7171	0.156	0.1557	1.8681	0.5614	6.7357
945.4	0.478235	0.7174	0.156	0.1557	1.8681	0.5617	6.7387
945.6	0.4784	0.7176	0.156	0.1557	1.8681	0.5619	6.7417
945.8	0.478565	0.7178	0.156	0.1557	1.8681	0.5622	6.7446
946	0.47873	0.7181	0.156	0.1557	1.8681	0.5624	6.7476
946.2	0.478896	0.7183	0.156	0.1557	1.8681	0.5627	6.7506
946.4	0.479061	0.7186	0.156	0.1557	1.8681	0.5629	6.7536
946.6	0.479227	0.7188	0.156	0.1557	1.8681	0.5632	6.7565
946.8	0.479392	0.7191	0.156	0.1557	1.8681	0.5634	6.7595
947	0.479558	0.7193	0.156	0.1557	1.8681	0.5637	6.7625
947.2	0.479724	0.7196	0.156	0.1557	1.8681	0.5639	6.7655
947.4	0.479889	0.7198	0.156	0.1557	1.8681	0.5642	6.7685
947.6	0.480055	0.7201	0.156	0.1557	1.8681	0.5644	6.7714
947.8	0.480221	0.7203	0.156	0.1557	1.8681	0.5647	6.7744

948	0.480387	0.7206	0.156	0.1557	1.8681	0.5649	6.7774
948.2	0.480553	0.7208	0.156	0.1557	1.8681	0.5652	6.7804
948.4	0.48072	0.7211	0.156	0.1557	1.8681	0.5654	6.7834
948.6	0.480886	0.7213	0.156	0.1557	1.8681	0.5657	6.7864
948.8	0.481052	0.7216	0.156	0.1557	1.8681	0.5659	6.7894
949	0.481219	0.7218	0.156	0.1557	1.8681	0.5662	6.7924
949.2	0.481385	0.7221	0.156	0.1557	1.8681	0.5664	6.7954
949.4	0.481552	0.7223	0.156	0.1557	1.8681	0.5667	6.7984
949.6	0.481718	0.7226	0.156	0.1557	1.8681	0.5669	6.8014
949.8	0.481885	0.7228	0.156	0.1557	1.8681	0.5672	6.8044
950	0.482052	0.7231	0.156	0.1557	1.8681	0.5674	6.8074
950.2	0.482219	0.7233	0.156	0.1557	1.8681	0.5677	6.8104
950.4	0.482386	0.7236	0.156	0.1557	1.8681	0.5679	6.8134
950.6	0.482553	0.7238	0.156	0.1557	1.8681	0.5682	6.8164
950.8	0.48272	0.7241	0.156	0.1557	1.8681	0.5684	6.8194
951	0.482887	0.7243	0.156	0.1557	1.8681	0.5687	6.8224
951.2	0.483054	0.7246	0.156	0.1557	1.8681	0.5689	6.8254
951.4	0.483222	0.7248	0.156	0.1557	1.8681	0.5692	6.8284
951.6	0.483389	0.7251	0.156	0.1557	1.8681	0.5694	6.8314
951.8	0.483557	0.7253	0.156	0.1557	1.8681	0.5697	6.8345
952	0.483724	0.7256	0.156	0.1557	1.8681	0.5699	6.8375
952.2	0.483892	0.7258	0.156	0.1557	1.8681	0.5702	6.8405
952.4	0.48406	0.7261	0.156	0.1557	1.8681	0.5704	6.8435
952.6	0.484227	0.7263	0.156	0.1557	1.8681	0.5707	6.8465
952.8	0.484395	0.7266	0.156	0.1557	1.8681	0.5709	6.8495
953	0.484563	0.7268	0.156	0.1557	1.8681	0.5712	6.8526
953.2	0.484731	0.7271	0.156	0.1557	1.8681	0.5714	6.8556
953.4	0.484899	0.7273	0.156	0.1557	1.8681	0.5717	6.8586
953.6	0.485068	0.7276	0.156	0.1557	1.8681	0.5719	6.8616
953.8	0.485236	0.7279	0.156	0.1557	1.8681	0.5722	6.8647
954	0.485404	0.7281	0.156	0.1557	1.8681	0.5724	6.8677
954.2	0.485573	0.7284	0.156	0.1557	1.8681	0.5727	6.8707
954.4	0.485741	0.7286	0.156	0.1557	1.8681	0.5729	6.8738
954.6	0.48591	0.7289	0.156	0.1557	1.8681	0.5732	6.8768
954.8	0.486079	0.7291	0.156	0.1557	1.8681	0.5734	6.8798
955	0.486247	0.7294	0.156	0.1557	1.8681	0.5737	6.8829
955.2	0.486416	0.7296	0.156	0.1557	1.8681	0.5740	6.8859
955.4	0.486585	0.7299	0.156	0.1557	1.8681	0.5742	6.8890
955.6	0.486754	0.7301	0.156	0.1557	1.8681	0.5745	6.8920
955.8	0.486923	0.7304	0.156	0.1557	1.8681	0.5747	6.8950
956	0.487093	0.7306	0.156	0.1557	1.8681	0.5750	6.8981
956.2	0.487262	0.7309	0.156	0.1557	1.8681	0.5752	6.9011
956.4	0.487431	0.7311	0.156	0.1557	1.8681	0.5755	6.9042
956.6	0.487601	0.7314	0.156	0.1557	1.8681	0.5757	6.9072
956.8	0.48777	0.7317	0.156	0.1557	1.8681	0.5760	6.9103
957	0.48794	0.7319	0.156	0.1557	1.8681	0.5762	6.9133
957.2	0.488109	0.7322	0.156	0.1557	1.8681	0.5765	6.9164

957.4	0.488279	0.7324	0.156	0.1557	1.8681	0.5767	6.9194
957.6	0.488449	0.7327	0.156	0.1557	1.8681	0.5770	6.9225
957.8	0.488619	0.7329	0.156	0.1557	1.8681	0.5773	6.9256
958	0.488789	0.7332	0.156	0.1557	1.8681	0.5775	6.9286
958.2	0.488959	0.7334	0.156	0.1557	1.8681	0.5778	6.9317
958.4	0.489129	0.7337	0.156	0.1557	1.8681	0.5780	6.9347
958.6	0.489299	0.7339	0.156	0.1557	1.8681	0.5783	6.9378
958.8	0.48947	0.7342	0.156	0.1557	1.8681	0.5785	6.9409
959	0.48964	0.7345	0.156	0.1557	1.8681	0.5788	6.9439
959.2	0.489811	0.7347	0.156	0.1557	1.8681	0.5790	6.9470
959.4	0.489981	0.7350	0.156	0.1557	1.8681	0.5793	6.9501
959.6	0.490152	0.7352	0.156	0.1557	1.8681	0.5796	6.9531
959.8	0.490323	0.7355	0.156	0.1557	1.8681	0.5798	6.9562
960	0.490493	0.7357	0.156	0.1557	1.8681	0.5801	6.9593
960.2	0.490664	0.7360	0.156	0.1557	1.8681	0.5803	6.9624
960.4	0.490835	0.7363	0.156	0.1557	1.8681	0.5806	6.9654
960.6	0.491006	0.7365	0.156	0.1557	1.8681	0.5808	6.9685
960.8	0.491178	0.7368	0.156	0.1557	1.8681	0.5811	6.9716
961	0.491349	0.7370	0.156	0.1557	1.8681	0.5814	6.9747
961.2	0.49152	0.7373	0.156	0.1557	1.8681	0.5816	6.9778
961.4	0.491692	0.7375	0.156	0.1557	1.8681	0.5819	6.9809
961.6	0.491863	0.7378	0.156	0.1557	1.8681	0.5821	6.9839
961.8	0.492035	0.7381	0.156	0.1557	1.8681	0.5824	6.9870
962	0.492206	0.7383	0.156	0.1557	1.8681	0.5826	6.9901
962.2	0.492378	0.7386	0.156	0.1557	1.8681	0.5829	6.9932
962.4	0.49255	0.7388	0.156	0.1557	1.8681	0.5832	6.9963
962.6	0.492722	0.7391	0.156	0.1557	1.8681	0.5834	6.9994
962.8	0.492894	0.7393	0.156	0.1557	1.8681	0.5837	7.0025
963	0.493066	0.7396	0.156	0.1557	1.8681	0.5839	7.0056
963.2	0.493238	0.7399	0.156	0.1557	1.8681	0.5842	7.0087
963.4	0.493411	0.7401	0.156	0.1557	1.8681	0.5844	7.0118
963.6	0.493583	0.7404	0.156	0.1557	1.8681	0.5847	7.0149
963.8	0.493755	0.7406	0.156	0.1557	1.8681	0.5850	7.0180
964	0.493928	0.7409	0.156	0.1557	1.8681	0.5852	7.0211
964.2	0.4941	0.7412	0.156	0.1557	1.8681	0.5855	7.0242
964.4	0.494273	0.7414	0.156	0.1557	1.8681	0.5857	7.0273
964.6	0.494446	0.7417	0.156	0.1557	1.8681	0.5860	7.0304
964.8	0.494619	0.7419	0.156	0.1557	1.8681	0.5863	7.0335
965	0.494792	0.7422	0.156	0.1557	1.8681	0.5865	7.0366
965.2	0.494965	0.7424	0.156	0.1557	1.8681	0.5868	7.0398
965.4	0.495138	0.7427	0.156	0.1557	1.8681	0.5870	7.0429
965.6	0.495311	0.7430	0.156	0.1557	1.8681	0.5873	7.0460
965.8	0.495485	0.7432	0.156	0.1557	1.8681	0.5876	7.0491
966	0.495658	0.7435	0.156	0.1557	1.8681	0.5878	7.0522
966.2	0.495831	0.7437	0.156	0.1557	1.8681	0.5881	7.0553
966.4	0.496005	0.7440	0.156	0.1557	1.8681	0.5883	7.0585
966.6	0.496179	0.7443	0.156	0.1557	1.8681	0.5886	7.0616

966.8	0.496352	0.7445	0.156	0.1557	1.8681	0.5889	7.0647
967	0.496526	0.7448	0.156	0.1557	1.8681	0.5891	7.0679
967.2	0.4967	0.7451	0.156	0.1557	1.8681	0.5894	7.0710
967.4	0.496874	0.7453	0.156	0.1557	1.8681	0.5896	7.0741
967.6	0.497048	0.7456	0.156	0.1557	1.8681	0.5899	7.0772
967.8	0.497222	0.7458	0.156	0.1557	1.8681	0.5902	7.0804
968	0.497397	0.7461	0.156	0.1557	1.8681	0.5904	7.0835
968.2	0.497571	0.7464	0.156	0.1557	1.8681	0.5907	7.0867
968.4	0.497746	0.7466	0.156	0.1557	1.8681	0.5909	7.0898
968.6	0.49792	0.7469	0.156	0.1557	1.8681	0.5912	7.0929
968.8	0.498095	0.7471	0.156	0.1557	1.8681	0.5915	7.0961
969	0.498269	0.7474	0.156	0.1557	1.8681	0.5917	7.0992
969.2	0.498444	0.7477	0.156	0.1557	1.8681	0.5920	7.1024
969.4	0.498619	0.7479	0.156	0.1557	1.8681	0.5923	7.1055
969.6	0.498794	0.7482	0.156	0.1557	1.8681	0.5925	7.1087
969.8	0.498969	0.7485	0.156	0.1557	1.8681	0.5928	7.1118
970	0.499144	0.7487	0.156	0.1557	1.8681	0.5930	7.1150
970.2	0.49932	0.7490	0.156	0.1557	1.8681	0.5933	7.1181
970.4	0.499495	0.7492	0.156	0.1557	1.8681	0.5936	7.1213
970.6	0.499671	0.7495	0.156	0.1557	1.8681	0.5938	7.1244
970.8	0.499846	0.7498	0.156	0.1557	1.8681	0.5941	7.1276
971	0.500022	0.7500	0.156	0.1557	1.8681	0.5944	7.1308
971.2	0.500197	0.7503	0.156	0.1557	1.8681	0.5946	7.1339
971.4	0.500373	0.7506	0.156	0.1557	1.8681	0.5949	7.1371
971.6	0.500549	0.7508	0.156	0.1557	1.8681	0.5952	7.1402
971.8	0.500725	0.7511	0.156	0.1557	1.8681	0.5954	7.1434
972	0.500901	0.7514	0.156	0.1557	1.8681	0.5957	7.1466
972.2	0.501077	0.7516	0.156	0.1557	1.8681	0.5959	7.1498
972.4	0.501254	0.7519	0.156	0.1557	1.8681	0.5962	7.1529
972.6	0.50143	0.7521	0.156	0.1557	1.8681	0.5965	7.1561
972.8	0.501607	0.7524	0.156	0.1557	1.8681	0.5967	7.1593
973	0.501783	0.7527	0.156	0.1557	1.8681	0.5970	7.1625
973.2	0.50196	0.7529	0.156	0.1557	1.8681	0.5973	7.1656
973.4	0.502136	0.7532	0.156	0.1557	1.8681	0.5975	7.1688
973.6	0.502313	0.7535	0.156	0.1557	1.8681	0.5978	7.1720
973.8	0.50249	0.7537	0.156	0.1557	1.8681	0.5981	7.1752
974	0.502667	0.7540	0.156	0.1557	1.8681	0.5983	7.1784
974.2	0.502844	0.7543	0.156	0.1557	1.8681	0.5986	7.1815
974.4	0.503022	0.7545	0.156	0.1557	1.8681	0.5989	7.1847
974.6	0.503199	0.7548	0.156	0.1557	1.8681	0.5991	7.1879
974.8	0.503376	0.7551	0.156	0.1557	1.8681	0.5994	7.1911
975	0.503554	0.7553	0.156	0.1557	1.8681	0.5997	7.1943
975.2	0.503731	0.7556	0.156	0.1557	1.8681	0.5999	7.1975
975.4	0.503909	0.7559	0.156	0.1557	1.8681	0.6002	7.2007
975.6	0.504087	0.7561	0.156	0.1557	1.8681	0.6005	7.2039
975.8	0.504265	0.7564	0.156	0.1557	1.8681	0.6007	7.2071
976	0.504443	0.7567	0.156	0.1557	1.8681	0.6010	7.2103

976.2	0.504621	0.7569	0.156	0.1557	1.8681	0.6013	7.2135
976.4	0.504799	0.7572	0.156	0.1557	1.8681	0.6015	7.2167
976.6	0.504977	0.7575	0.156	0.1557	1.8681	0.6018	7.2199
976.8	0.505155	0.7577	0.156	0.1557	1.8681	0.6021	7.2231
977	0.505334	0.7580	0.156	0.1557	1.8681	0.6023	7.2263
977.2	0.505512	0.7583	0.156	0.1557	1.8681	0.6026	7.2296
977.4	0.505691	0.7585	0.156	0.1557	1.8681	0.6029	7.2328
977.6	0.50587	0.7588	0.156	0.1557	1.8681	0.6031	7.2360
977.8	0.506048	0.7591	0.156	0.1557	1.8681	0.6034	7.2392
978	0.506227	0.7593	0.156	0.1557	1.8681	0.6037	7.2424
978.2	0.506406	0.7596	0.156	0.1557	1.8681	0.6039	7.2456
978.4	0.506586	0.7599	0.156	0.1557	1.8681	0.6042	7.2489
978.6	0.506765	0.7601	0.156	0.1557	1.8681	0.6045	7.2521
978.8	0.506944	0.7604	0.156	0.1557	1.8681	0.6047	7.2553
979	0.507123	0.7607	0.156	0.1557	1.8681	0.6050	7.2586
979.2	0.507303	0.7610	0.156	0.1557	1.8681	0.6053	7.2618
979.4	0.507483	0.7612	0.156	0.1557	1.8681	0.6056	7.2650
979.6	0.507662	0.7615	0.156	0.1557	1.8681	0.6058	7.2682
979.8	0.507842	0.7618	0.156	0.1557	1.8681	0.6061	7.2715
980	0.508022	0.7620	0.156	0.1557	1.8681	0.6064	7.2747
980.2	0.508202	0.7623	0.156	0.1557	1.8681	0.6066	7.2780
980.4	0.508382	0.7626	0.156	0.1557	1.8681	0.6069	7.2812
980.6	0.508562	0.7628	0.156	0.1557	1.8681	0.6072	7.2844
980.8	0.508742	0.7631	0.156	0.1557	1.8681	0.6074	7.2877
981	0.508923	0.7634	0.156	0.1557	1.8681	0.6077	7.2909
981.2	0.509103	0.7637	0.156	0.1557	1.8681	0.6080	7.2942
981.4	0.509284	0.7639	0.156	0.1557	1.8681	0.6083	7.2974
981.6	0.509465	0.7642	0.156	0.1557	1.8681	0.6085	7.3007
981.8	0.509645	0.7645	0.156	0.1557	1.8681	0.6088	7.3039
982	0.509826	0.7647	0.156	0.1557	1.8681	0.6091	7.3072
982.2	0.510007	0.7650	0.156	0.1557	1.8681	0.6093	7.3104
982.4	0.510188	0.7653	0.156	0.1557	1.8681	0.6096	7.3137
982.6	0.51037	0.7656	0.156	0.1557	1.8681	0.6099	7.3170
982.8	0.510551	0.7658	0.156	0.1557	1.8681	0.6102	7.3202
983	0.510732	0.7661	0.156	0.1557	1.8681	0.6104	7.3235
983.2	0.510914	0.7664	0.156	0.1557	1.8681	0.6107	7.3268
983.4	0.511095	0.7666	0.156	0.1557	1.8681	0.6110	7.3300
983.6	0.511277	0.7669	0.156	0.1557	1.8681	0.6112	7.3333
983.8	0.511459	0.7672	0.156	0.1557	1.8681	0.6115	7.3366
984	0.511641	0.7675	0.156	0.1557	1.8681	0.6118	7.3398
984.2	0.511823	0.7677	0.156	0.1557	1.8681	0.6121	7.3431
984.4	0.512005	0.7680	0.156	0.1557	1.8681	0.6123	7.3464
984.6	0.512187	0.7683	0.156	0.1557	1.8681	0.6126	7.3497
984.8	0.512369	0.7686	0.156	0.1557	1.8681	0.6129	7.3529
985	0.512552	0.7688	0.156	0.1557	1.8681	0.6132	7.3562
985.2	0.512734	0.7691	0.156	0.1557	1.8681	0.6134	7.3595
985.4	0.512917	0.7694	0.156	0.1557	1.8681	0.6137	7.3628

985.6	0.513099	0.7696	0.156	0.1557	1.8681	0.6140	7.3661
985.8	0.513282	0.7699	0.156	0.1557	1.8681	0.6143	7.3694
986	0.513465	0.7702	0.156	0.1557	1.8681	0.6145	7.3727
986.2	0.513648	0.7705	0.156	0.1557	1.8681	0.6148	7.3760
986.4	0.513831	0.7707	0.156	0.1557	1.8681	0.6151	7.3793
986.6	0.514015	0.7710	0.156	0.1557	1.8681	0.6154	7.3826
986.8	0.514198	0.7713	0.156	0.1557	1.8681	0.6156	7.3859
987	0.514381	0.7716	0.156	0.1557	1.8681	0.6159	7.3892
987.2	0.514565	0.7718	0.156	0.1557	1.8681	0.6162	7.3925
987.4	0.514748	0.7721	0.156	0.1557	1.8681	0.6165	7.3958
987.6	0.514932	0.7724	0.156	0.1557	1.8681	0.6167	7.3991
987.8	0.515116	0.7727	0.156	0.1557	1.8681	0.6170	7.4024
988	0.5153	0.7730	0.156	0.1557	1.8681	0.6173	7.4057
988.2	0.515484	0.7732	0.156	0.1557	1.8681	0.6176	7.4090
988.4	0.515668	0.7735	0.156	0.1557	1.8681	0.6178	7.4123
988.6	0.515853	0.7738	0.156	0.1557	1.8681	0.6181	7.4156
988.8	0.516037	0.7741	0.156	0.1557	1.8681	0.6184	7.4189
989	0.516221	0.7743	0.156	0.1557	1.8681	0.6187	7.4223
989.2	0.516406	0.7746	0.156	0.1557	1.8681	0.6189	7.4256
989.4	0.516591	0.7749	0.156	0.1557	1.8681	0.6192	7.4289
989.6	0.516776	0.7752	0.156	0.1557	1.8681	0.6195	7.4322
989.8	0.51696	0.7754	0.156	0.1557	1.8681	0.6198	7.4356
990	0.517145	0.7757	0.156	0.1557	1.8681	0.6200	7.4389
990.2	0.517331	0.7760	0.156	0.1557	1.8681	0.6203	7.4422
990.4	0.517516	0.7763	0.156	0.1557	1.8681	0.6206	7.4456
990.6	0.517701	0.7766	0.156	0.1557	1.8681	0.6209	7.4489
990.8	0.517887	0.7768	0.156	0.1557	1.8681	0.6212	7.4522
991	0.518072	0.7771	0.156	0.1557	1.8681	0.6214	7.4556
991.2	0.518258	0.7774	0.156	0.1557	1.8681	0.6217	7.4589
991.4	0.518444	0.7777	0.156	0.1557	1.8681	0.6220	7.4623
991.6	0.51863	0.7779	0.156	0.1557	1.8681	0.6223	7.4656
991.8	0.518816	0.7782	0.156	0.1557	1.8681	0.6226	7.4690
992	0.519002	0.7785	0.156	0.1557	1.8681	0.6228	7.4723
992.2	0.519188	0.7788	0.156	0.1557	1.8681	0.6231	7.4757
992.4	0.519374	0.7791	0.156	0.1557	1.8681	0.6234	7.4790
992.6	0.519561	0.7793	0.156	0.1557	1.8681	0.6237	7.4824
992.8	0.519747	0.7796	0.156	0.1557	1.8681	0.6239	7.4857
993	0.519934	0.7799	0.156	0.1557	1.8681	0.6242	7.4891
993.2	0.520121	0.7802	0.156	0.1557	1.8681	0.6245	7.4924
993.4	0.520307	0.7805	0.156	0.1557	1.8681	0.6248	7.4958
993.6	0.520494	0.7807	0.156	0.1557	1.8681	0.6251	7.4992
993.8	0.520682	0.7810	0.156	0.1557	1.8681	0.6254	7.5025
994	0.520869	0.7813	0.156	0.1557	1.8681	0.6256	7.5059
994.2	0.521056	0.7816	0.156	0.1557	1.8681	0.6259	7.5093
994.4	0.521244	0.7819	0.156	0.1557	1.8681	0.6262	7.5126
994.6	0.521431	0.7821	0.156	0.1557	1.8681	0.6265	7.5160
994.8	0.521619	0.7824	0.156	0.1557	1.8681	0.6268	7.5194

995	0.521806	0.7827	0.156	0.1557	1.8681	0.6270	7.5228
995.2	0.521994	0.7830	0.156	0.1557	1.8681	0.6273	7.5262
995.4	0.522182	0.7833	0.156	0.1557	1.8681	0.6276	7.5295
995.6	0.52237	0.7836	0.156	0.1557	1.8681	0.6279	7.5329
995.8	0.522559	0.7838	0.156	0.1557	1.8681	0.6282	7.5363
996	0.522747	0.7841	0.156	0.1557	1.8681	0.6284	7.5397
996.2	0.522935	0.7844	0.156	0.1557	1.8681	0.6287	7.5431
996.4	0.523124	0.7847	0.156	0.1557	1.8681	0.6290	7.5465
996.6	0.523313	0.7850	0.156	0.1557	1.8681	0.6293	7.5499
996.8	0.523501	0.7853	0.156	0.1557	1.8681	0.6296	7.5533
997	0.52369	0.7855	0.156	0.1557	1.8681	0.6299	7.5567
997.2	0.523879	0.7858	0.156	0.1557	1.8681	0.6301	7.5601
997.4	0.524069	0.7861	0.156	0.1557	1.8681	0.6304	7.5635
997.6	0.524258	0.7864	0.156	0.1557	1.8681	0.6307	7.5669
997.8	0.524447	0.7867	0.156	0.1557	1.8681	0.6310	7.5703
998	0.524637	0.7870	0.156	0.1557	1.8681	0.6313	7.5737
998.2	0.524826	0.7872	0.156	0.1557	1.8681	0.6316	7.5771
998.4	0.525016	0.7875	0.156	0.1557	1.8681	0.6319	7.5805
998.6	0.525206	0.7878	0.156	0.1557	1.8681	0.6321	7.5839
998.8	0.525396	0.7881	0.156	0.1557	1.8681	0.6324	7.5874
999	0.525586	0.7884	0.156	0.1557	1.8681	0.6327	7.5908
999.2	0.525776	0.7887	0.156	0.1557	1.8681	0.6330	7.5942
999.4	0.525966	0.7889	0.156	0.1557	1.8681	0.6333	7.5976
999.6	0.526157	0.7892	0.156	0.1557	1.8681	0.6336	7.6011
999.8	0.526347	0.7895	0.156	0.1557	1.8681	0.6338	7.6045
1000	0.526538	0.7898	0.156	0.1557	1.8681	0.6341	7.6079
1000.2	0.526729	0.7901	0.156	0.1557	1.8681	0.6344	7.6113
1000.4	0.526919	0.7904	0.156	0.1557	1.8681	0.6347	7.6148
1000.6	0.52711	0.7907	0.156	0.1557	1.8681	0.6350	7.6182
1000.8	0.527302	0.7910	0.156	0.1557	1.8681	0.6353	7.6217
1001	0.527493	0.7912	0.156	0.1557	1.8681	0.6356	7.6251
1001.2	0.527684	0.7915	0.156	0.1557	1.8681	0.6359	7.6285
1001.4	0.527876	0.7918	0.156	0.1557	1.8681	0.6361	7.6320
1001.6	0.528067	0.7921	0.156	0.1557	1.8681	0.6364	7.6354
1001.8	0.528259	0.7924	0.156	0.1557	1.8681	0.6367	7.6389
1002	0.528451	0.7927	0.156	0.1557	1.8681	0.6370	7.6423
1002.2	0.528643	0.7930	0.156	0.1557	1.8681	0.6373	7.6458
1002.4	0.528835	0.7933	0.156	0.1557	1.8681	0.6376	7.6492
1002.6	0.529027	0.7935	0.156	0.1557	1.8681	0.6379	7.6527
1002.8	0.529219	0.7938	0.156	0.1557	1.8681	0.6382	7.6562
1003	0.529412	0.7941	0.156	0.1557	1.8681	0.6384	7.6596
1003.2	0.529604	0.7944	0.156	0.1557	1.8681	0.6387	7.6631
1003.4	0.529797	0.7947	0.156	0.1557	1.8681	0.6390	7.6666
1003.6	0.52999	0.7950	0.156	0.1557	1.8681	0.6393	7.6700
1003.8	0.530183	0.7953	0.156	0.1557	1.8681	0.6396	7.6735
1004	0.530376	0.7956	0.156	0.1557	1.8681	0.6399	7.6770
1004.2	0.530569	0.7959	0.156	0.1557	1.8681	0.6402	7.6804

1004.4	0.530762	0.7961	0.156	0.1557	1.8681	0.6405	7.6839
1004.6	0.530956	0.7964	0.156	0.1557	1.8681	0.6408	7.6874
1004.8	0.531149	0.7967	0.156	0.1557	1.8681	0.6411	7.6909
1005	0.531343	0.7970	0.156	0.1557	1.8681	0.6413	7.6944
1005.2	0.531537	0.7973	0.156	0.1557	1.8681	0.6416	7.6979
1005.4	0.531731	0.7976	0.156	0.1557	1.8681	0.6419	7.7013
1005.6	0.531925	0.7979	0.156	0.1557	1.8681	0.6422	7.7048
1005.8	0.532119	0.7982	0.156	0.1557	1.8681	0.6425	7.7083
1006	0.532313	0.7985	0.156	0.1557	1.8681	0.6428	7.7118
1006.2	0.532507	0.7988	0.156	0.1557	1.8681	0.6431	7.7153
1006.4	0.532702	0.7991	0.156	0.1557	1.8681	0.6434	7.7188
1006.6	0.532897	0.7993	0.156	0.1557	1.8681	0.6437	7.7223
1006.8	0.533091	0.7996	0.156	0.1557	1.8681	0.6440	7.7258
1007	0.533286	0.7999	0.156	0.1557	1.8681	0.6443	7.7293
1007.2	0.533481	0.8002	0.156	0.1557	1.8681	0.6446	7.7329
1007.4	0.533677	0.8005	0.156	0.1557	1.8681	0.6448	7.7364
1007.6	0.533872	0.8008	0.156	0.1557	1.8681	0.6451	7.7399
1007.8	0.534067	0.8011	0.156	0.1557	1.8681	0.6454	7.7434
1008	0.534263	0.8014	0.156	0.1557	1.8681	0.6457	7.7469
1008.2	0.534459	0.8017	0.156	0.1557	1.8681	0.6460	7.7504
1008.4	0.534654	0.8020	0.156	0.1557	1.8681	0.6463	7.7540
1008.6	0.53485	0.8023	0.156	0.1557	1.8681	0.6466	7.7575
1008.8	0.535046	0.8026	0.156	0.1557	1.8681	0.6469	7.7610
1009	0.535242	0.8029	0.156	0.1557	1.8681	0.6472	7.7645
1009.2	0.535439	0.8032	0.156	0.1557	1.8681	0.6475	7.7681
1009.4	0.535635	0.8035	0.156	0.1557	1.8681	0.6478	7.7716
1009.6	0.535832	0.8037	0.156	0.1557	1.8681	0.6481	7.7751
1009.8	0.536029	0.8040	0.156	0.1557	1.8681	0.6484	7.7787
1010	0.536225	0.8043	0.156	0.1557	1.8681	0.6487	7.7822
1010.2	0.536422	0.8046	0.156	0.1557	1.8681	0.6490	7.7858
1010.4	0.536619	0.8049	0.156	0.1557	1.8681	0.6493	7.7893
1010.6	0.536817	0.8052	0.156	0.1557	1.8681	0.6496	7.7929
1010.8	0.537014	0.8055	0.156	0.1557	1.8681	0.6498	7.7964
1011	0.537212	0.8058	0.156	0.1557	1.8681	0.6501	7.8000
1011.2	0.537409	0.8061	0.156	0.1557	1.8681	0.6504	7.8035
1011.4	0.537607	0.8064	0.156	0.1557	1.8681	0.6507	7.8071
1011.6	0.537805	0.8067	0.156	0.1557	1.8681	0.6510	7.8106
1011.8	0.538003	0.8070	0.156	0.1557	1.8681	0.6513	7.8142
1012	0.538201	0.8073	0.156	0.1557	1.8681	0.6516	7.8178
1012.2	0.538399	0.8076	0.156	0.1557	1.8681	0.6519	7.8213
1012.4	0.538598	0.8079	0.156	0.1557	1.8681	0.6522	7.8249
1012.6	0.538796	0.8082	0.156	0.1557	1.8681	0.6525	7.8285
1012.8	0.538995	0.8085	0.156	0.1557	1.8681	0.6528	7.8321
1013	0.539194	0.8088	0.156	0.1557	1.8681	0.6531	7.8356
1013.2	0.539393	0.8091	0.156	0.1557	1.8681	0.6534	7.8392
1013.4	0.539592	0.8094	0.156	0.1557	1.8681	0.6537	7.8428
1013.6	0.539791	0.8097	0.156	0.1557	1.8681	0.6540	7.8464

1013.8	0.53999	0.8100	0.156	0.1557	1.8681	0.6543	7.8500
1014	0.54019	0.8103	0.156	0.1557	1.8681	0.6546	7.8536
1014.2	0.540389	0.8106	0.156	0.1557	1.8681	0.6549	7.8572
1014.4	0.540589	0.8109	0.156	0.1557	1.8681	0.6552	7.8608
1014.6	0.540789	0.8112	0.156	0.1557	1.8681	0.6555	7.8644
1014.8	0.540989	0.8115	0.156	0.1557	1.8681	0.6558	7.8679
1015	0.541189	0.8118	0.156	0.1557	1.8681	0.6561	7.8716
1015.2	0.54139	0.8121	0.156	0.1557	1.8681	0.6564	7.8752
1015.4	0.54159	0.8124	0.156	0.1557	1.8681	0.6567	7.8788
1015.6	0.541791	0.8127	0.156	0.1557	1.8681	0.6570	7.8824
1015.8	0.541991	0.8130	0.156	0.1557	1.8681	0.6573	7.8860
1016	0.542192	0.8133	0.156	0.1557	1.8681	0.6576	7.8896
1016.2	0.542393	0.8136	0.156	0.1557	1.8681	0.6579	7.8932
1016.4	0.542595	0.8139	0.156	0.1557	1.8681	0.6582	7.8968
1016.6	0.542796	0.8142	0.156	0.1557	1.8681	0.6585	7.9005
1016.8	0.542997	0.8145	0.156	0.1557	1.8681	0.6588	7.9041
1017	0.543199	0.8148	0.156	0.1557	1.8681	0.6591	7.9077
1017.2	0.5434	0.8151	0.156	0.1557	1.8681	0.6594	7.9113
1017.4	0.543602	0.8154	0.156	0.1557	1.8681	0.6597	7.9150
1017.6	0.543804	0.8157	0.156	0.1557	1.8681	0.6600	7.9186
1017.8	0.544006	0.8160	0.156	0.1557	1.8681	0.6603	7.9222
1018	0.544209	0.8163	0.156	0.1557	1.8681	0.6606	7.9259
1018.2	0.544411	0.8166	0.156	0.1557	1.8681	0.6609	7.9295
1018.4	0.544614	0.8169	0.156	0.1557	1.8681	0.6612	7.9332
1018.6	0.544816	0.8172	0.156	0.1557	1.8681	0.6616	7.9368
1018.8	0.545019	0.8175	0.156	0.1557	1.8681	0.6619	7.9405
1019	0.545222	0.8178	0.156	0.1557	1.8681	0.6622	7.9441
1019.2	0.545425	0.8181	0.156	0.1557	1.8681	0.6625	7.9478
1019.4	0.545629	0.8184	0.156	0.1557	1.8681	0.6628	7.9514
1019.6	0.545832	0.8187	0.156	0.1557	1.8681	0.6631	7.9551
1019.8	0.546036	0.8191	0.156	0.1557	1.8681	0.6634	7.9588
1020	0.546239	0.8194	0.156	0.1557	1.8681	0.6637	7.9624
1020.2	0.546443	0.8197	0.156	0.1557	1.8681	0.6640	7.9661
1020.4	0.546647	0.8200	0.156	0.1557	1.8681	0.6643	7.9698
1020.6	0.546851	0.8203	0.156	0.1557	1.8681	0.6646	7.9734
1020.8	0.547056	0.8206	0.156	0.1557	1.8681	0.6649	7.9771
1021	0.54726	0.8209	0.156	0.1557	1.8681	0.6652	7.9808
1021.2	0.547465	0.8212	0.156	0.1557	1.8681	0.6655	7.9845
1021.4	0.547669	0.8215	0.156	0.1557	1.8681	0.6658	7.9881
1021.6	0.547874	0.8218	0.156	0.1557	1.8681	0.6661	7.9918
1021.8	0.548079	0.8221	0.156	0.1557	1.8681	0.6664	7.9955
1022	0.548284	0.8224	0.156	0.1557	1.8681	0.6668	7.9992
1022.2	0.54849	0.8227	0.156	0.1557	1.8681	0.6671	8.0029
1022.4	0.548695	0.8230	0.156	0.1557	1.8681	0.6674	8.0066
1022.6	0.548901	0.8234	0.156	0.1557	1.8681	0.6677	8.0103
1022.8	0.549107	0.8237	0.156	0.1557	1.8681	0.6680	8.0140
1023	0.549312	0.8240	0.156	0.1557	1.8681	0.6683	8.0177

1023.2	0.549519	0.8243	0.156	0.1557	1.8681	0.6686	8.0214
1023.4	0.549725	0.8246	0.156	0.1557	1.8681	0.6689	8.0251
1023.6	0.549931	0.8249	0.156	0.1557	1.8681	0.6692	8.0288
1023.8	0.550138	0.8252	0.156	0.1557	1.8681	0.6695	8.0326
1024	0.550344	0.8255	0.156	0.1557	1.8681	0.6698	8.0363
1024.2	0.550551	0.8258	0.156	0.1557	1.8681	0.6702	8.0400
1024.4	0.550758	0.8261	0.156	0.1557	1.8681	0.6705	8.0437
1024.6	0.550965	0.8264	0.156	0.1557	1.8681	0.6708	8.0475
1024.8	0.551173	0.8268	0.156	0.1557	1.8681	0.6711	8.0512
1025	0.55138	0.8271	0.156	0.1557	1.8681	0.6714	8.0549
1025.2	0.551588	0.8274	0.156	0.1557	1.8681	0.6717	8.0587
1025.4	0.551795	0.8277	0.156	0.1557	1.8681	0.6720	8.0624
1025.6	0.552003	0.8280	0.156	0.1557	1.8681	0.6723	8.0661
1025.8	0.552211	0.8283	0.156	0.1557	1.8681	0.6726	8.0699
1026	0.552419	0.8286	0.156	0.1557	1.8681	0.6730	8.0736
1026.2	0.552628	0.8289	0.156	0.1557	1.8681	0.6733	8.0774
1026.4	0.552836	0.8293	0.156	0.1557	1.8681	0.6736	8.0811
1026.6	0.553045	0.8296	0.156	0.1557	1.8681	0.6739	8.0849
1026.8	0.553254	0.8299	0.156	0.1557	1.8681	0.6742	8.0886
1027	0.553463	0.8302	0.156	0.1557	1.8681	0.6745	8.0924
1027.2	0.553672	0.8305	0.156	0.1557	1.8681	0.6748	8.0962
1027.4	0.553881	0.8308	0.156	0.1557	1.8681	0.6752	8.0999
1027.6	0.554091	0.8311	0.156	0.1557	1.8681	0.6755	8.1037
1027.8	0.5543	0.8315	0.156	0.1557	1.8681	0.6758	8.1075
1028	0.55451	0.8318	0.156	0.1557	1.8681	0.6761	8.1112
1028.2	0.55472	0.8321	0.156	0.1557	1.8681	0.6764	8.1150
1028.4	0.55493	0.8324	0.156	0.1557	1.8681	0.6767	8.1188
1028.6	0.55514	0.8327	0.156	0.1557	1.8681	0.6770	8.1226
1028.8	0.555351	0.8330	0.156	0.1557	1.8681	0.6774	8.1264
1029	0.555561	0.8333	0.156	0.1557	1.8681	0.6777	8.1302
1029.2	0.555772	0.8337	0.156	0.1557	1.8681	0.6780	8.1339
1029.4	0.555983	0.8340	0.156	0.1557	1.8681	0.6783	8.1377
1029.6	0.556194	0.8343	0.156	0.1557	1.8681	0.6786	8.1415
1029.8	0.556405	0.8346	0.156	0.1557	1.8681	0.6789	8.1453
1030	0.556617	0.8349	0.156	0.1557	1.8681	0.6793	8.1491
1030.2	0.556828	0.8352	0.156	0.1557	1.8681	0.6796	8.1529
1030.4	0.55704	0.8356	0.156	0.1557	1.8681	0.6799	8.1568
1030.6	0.557252	0.8359	0.156	0.1557	1.8681	0.6802	8.1606
1030.8	0.557464	0.8362	0.156	0.1557	1.8681	0.6805	8.1644
1031	0.557676	0.8365	0.156	0.1557	1.8681	0.6808	8.1682
1031.2	0.557888	0.8368	0.156	0.1557	1.8681	0.6812	8.1720
1031.4	0.558101	0.8372	0.156	0.1557	1.8681	0.6815	8.1758
1031.6	0.558314	0.8375	0.156	0.1557	1.8681	0.6818	8.1797
1031.8	0.558526	0.8378	0.156	0.1557	1.8681	0.6821	8.1835
1032	0.558739	0.8381	0.156	0.1557	1.8681	0.6824	8.1873
1032.2	0.558953	0.8384	0.156	0.1557	1.8681	0.6828	8.1912
1032.4	0.559166	0.8387	0.156	0.1557	1.8681	0.6831	8.1950

1032.6	0.55938	0.8391	0.156	0.1557	1.8681	0.6834	8.1989
1032.8	0.559593	0.8394	0.156	0.1557	1.8681	0.6837	8.2027
1033	0.559807	0.8397	0.156	0.1557	1.8681	0.6840	8.2065
1033.2	0.560021	0.8400	0.156	0.1557	1.8681	0.6844	8.2104
1033.4	0.560235	0.8404	0.156	0.1557	1.8681	0.6847	8.2143
1033.6	0.56045	0.8407	0.156	0.1557	1.8681	0.6850	8.2181
1033.8	0.560664	0.8410	0.156	0.1557	1.8681	0.6853	8.2220
1034	0.560879	0.8413	0.156	0.1557	1.8681	0.6856	8.2258
1034.2	0.561094	0.8416	0.156	0.1557	1.8681	0.6860	8.2297
1034.4	0.561309	0.8420	0.156	0.1557	1.8681	0.6863	8.2336
1034.6	0.561524	0.8423	0.156	0.1557	1.8681	0.6866	8.2374
1034.8	0.56174	0.8426	0.156	0.1557	1.8681	0.6869	8.2413
1035	0.561955	0.8429	0.156	0.1557	1.8681	0.6873	8.2452
1035.2	0.562171	0.8433	0.156	0.1557	1.8681	0.6876	8.2491
1035.4	0.562387	0.8436	0.156	0.1557	1.8681	0.6879	8.2530
1035.6	0.562603	0.8439	0.156	0.1557	1.8681	0.6882	8.2569
1035.8	0.562819	0.8442	0.156	0.1557	1.8681	0.6886	8.2607
1036	0.563036	0.8446	0.156	0.1557	1.8681	0.6889	8.2646
1036.2	0.563252	0.8449	0.156	0.1557	1.8681	0.6892	8.2685
1036.4	0.563469	0.8452	0.156	0.1557	1.8681	0.6895	8.2724
1036.6	0.563686	0.8455	0.156	0.1557	1.8681	0.6899	8.2763
1036.8	0.563903	0.8459	0.156	0.1557	1.8681	0.6902	8.2802
1037	0.564121	0.8462	0.156	0.1557	1.8681	0.6905	8.2842
1037.2	0.564338	0.8465	0.156	0.1557	1.8681	0.6908	8.2881
1037.4	0.564556	0.8468	0.156	0.1557	1.8681	0.6912	8.2920
1037.6	0.564774	0.8472	0.156	0.1557	1.8681	0.6915	8.2959
1037.8	0.564992	0.8475	0.156	0.1557	1.8681	0.6918	8.2998
1038	0.56521	0.8478	0.156	0.1557	1.8681	0.6921	8.3038
1038.2	0.565428	0.8481	0.156	0.1557	1.8681	0.6925	8.3077
1038.4	0.565647	0.8485	0.156	0.1557	1.8681	0.6928	8.3116
1038.6	0.565866	0.8488	0.156	0.1557	1.8681	0.6931	8.3156
1038.8	0.566085	0.8491	0.156	0.1557	1.8681	0.6935	8.3195
1039	0.566304	0.8495	0.156	0.1557	1.8681	0.6938	8.3234
1039.2	0.566523	0.8498	0.156	0.1557	1.8681	0.6941	8.3274
1039.4	0.566743	0.8501	0.156	0.1557	1.8681	0.6944	8.3313
1039.6	0.566962	0.8504	0.156	0.1557	1.8681	0.6948	8.3353
1039.8	0.567182	0.8508	0.156	0.1557	1.8681	0.6951	8.3392
1040	0.567402	0.8511	0.156	0.1557	1.8681	0.6954	8.3432
1040.2	0.567622	0.8514	0.156	0.1557	1.8681	0.6958	8.3472
1040.4	0.567843	0.8518	0.156	0.1557	1.8681	0.6961	8.3511
1040.6	0.568063	0.8521	0.156	0.1557	1.8681	0.6964	8.3551
1040.8	0.568284	0.8524	0.156	0.1557	1.8681	0.6968	8.3591
1041	0.568505	0.8528	0.156	0.1557	1.8681	0.6971	8.3630
1041.2	0.568726	0.8531	0.156	0.1557	1.8681	0.6974	8.3670
1041.4	0.568948	0.8534	0.156	0.1557	1.8681	0.6978	8.3710
1041.6	0.569169	0.8538	0.156	0.1557	1.8681	0.6981	8.3750
1041.8	0.569391	0.8541	0.156	0.1557	1.8681	0.6984	8.3790

1042	0.569613	0.8544	0.156	0.1557	1.8681	0.6987	8.3830
1042.2	0.569835	0.8548	0.156	0.1557	1.8681	0.6991	8.3870
1042.4	0.570057	0.8551	0.156	0.1557	1.8681	0.6994	8.3910
1042.6	0.57028	0.8554	0.156	0.1557	1.8681	0.6997	8.3950
1042.8	0.570502	0.8558	0.156	0.1557	1.8681	0.7001	8.3990
1043	0.570725	0.8561	0.156	0.1557	1.8681	0.7004	8.4030
1043.2	0.570948	0.8564	0.156	0.1557	1.8681	0.7008	8.4070
1043.4	0.571172	0.8568	0.156	0.1557	1.8681	0.7011	8.4110
1043.6	0.571395	0.8571	0.156	0.1557	1.8681	0.7014	8.4150
1043.8	0.571619	0.8574	0.156	0.1557	1.8681	0.7018	8.4191
1044	0.571842	0.8578	0.156	0.1557	1.8681	0.7021	8.4231
1044.2	0.572067	0.8581	0.156	0.1557	1.8681	0.7024	8.4271
1044.4	0.572291	0.8584	0.156	0.1557	1.8681	0.7028	8.4312
1044.6	0.572515	0.8588	0.156	0.1557	1.8681	0.7031	8.4352
1044.8	0.57274	0.8591	0.156	0.1557	1.8681	0.7034	8.4392
1045	0.572965	0.8594	0.156	0.1557	1.8681	0.7038	8.4433
1045.2	0.57319	0.8598	0.156	0.1557	1.8681	0.7041	8.4473
1045.4	0.573415	0.8601	0.156	0.1557	1.8681	0.7045	8.4514
1045.6	0.57364	0.8605	0.156	0.1557	1.8681	0.7048	8.4554
1045.8	0.573866	0.8608	0.156	0.1557	1.8681	0.7051	8.4595
1046	0.574092	0.8611	0.156	0.1557	1.8681	0.7055	8.4636
1046.2	0.574318	0.8615	0.156	0.1557	1.8681	0.7058	8.4676
1046.4	0.574544	0.8618	0.156	0.1557	1.8681	0.7061	8.4717
1046.6	0.57477	0.8622	0.156	0.1557	1.8681	0.7065	8.4758
1046.8	0.574997	0.8625	0.156	0.1557	1.8681	0.7068	8.4798
1047	0.575224	0.8628	0.156	0.1557	1.8681	0.7072	8.4839
1047.2	0.575451	0.8632	0.156	0.1557	1.8681	0.7075	8.4880
1047.4	0.575678	0.8635	0.156	0.1557	1.8681	0.7078	8.4921
1047.6	0.575905	0.8639	0.156	0.1557	1.8681	0.7082	8.4962
1047.8	0.576133	0.8642	0.156	0.1557	1.8681	0.7085	8.5003
1048	0.576361	0.8645	0.156	0.1557	1.8681	0.7089	8.5044
1048.2	0.576589	0.8649	0.156	0.1557	1.8681	0.7092	8.5085
1048.4	0.576817	0.8652	0.156	0.1557	1.8681	0.7096	8.5126
1048.6	0.577046	0.8656	0.156	0.1557	1.8681	0.7099	8.5167
1048.8	0.577274	0.8659	0.156	0.1557	1.8681	0.7102	8.5208
1049	0.577503	0.8663	0.156	0.1557	1.8681	0.7106	8.5249
1049.2	0.577732	0.8666	0.156	0.1557	1.8681	0.7109	8.5291
1049.4	0.577962	0.8669	0.156	0.1557	1.8681	0.7113	8.5332
1049.6	0.578191	0.8673	0.156	0.1557	1.8681	0.7116	8.5373
1049.8	0.578421	0.8676	0.156	0.1557	1.8681	0.7120	8.5414
1050	0.578651	0.8680	0.156	0.1557	1.8681	0.7123	8.5456
1050.2	0.578881	0.8683	0.156	0.1557	1.8681	0.7126	8.5497
1050.4	0.579111	0.8687	0.156	0.1557	1.8681	0.7130	8.5539
1050.6	0.579342	0.8690	0.156	0.1557	1.8681	0.7133	8.5580
1050.8	0.579572	0.8694	0.156	0.1557	1.8681	0.7137	8.5622
1051	0.579803	0.8697	0.156	0.1557	1.8681	0.7140	8.5663
1051.2	0.580035	0.8701	0.156	0.1557	1.8681	0.7144	8.5705

1051.4	0.580266	0.8704	0.156	0.1557	1.8681	0.7147	8.5747
1051.6	0.580498	0.8707	0.156	0.1557	1.8681	0.7151	8.5788
1051.8	0.58073	0.8711	0.156	0.1557	1.8681	0.7154	8.5830
1052	0.580962	0.8714	0.156	0.1557	1.8681	0.7158	8.5872
1052.2	0.581194	0.8718	0.156	0.1557	1.8681	0.7161	8.5913
1052.4	0.581426	0.8721	0.156	0.1557	1.8681	0.7165	8.5955
1052.6	0.581659	0.8725	0.156	0.1557	1.8681	0.7168	8.5997
1052.8	0.581892	0.8728	0.156	0.1557	1.8681	0.7172	8.6039
1053	0.582125	0.8732	0.156	0.1557	1.8681	0.7175	8.6081
1053.2	0.582359	0.8735	0.156	0.1557	1.8681	0.7179	8.6123
1053.4	0.582592	0.8739	0.156	0.1557	1.8681	0.7182	8.6165
1053.6	0.582826	0.8742	0.156	0.1557	1.8681	0.7186	8.6207
1053.8	0.58306	0.8746	0.156	0.1557	1.8681	0.7189	8.6249
1054	0.583294	0.8749	0.156	0.1557	1.8681	0.7193	8.6291
1054.2	0.583529	0.8753	0.156	0.1557	1.8681	0.7196	8.6334
1054.4	0.583764	0.8756	0.156	0.1557	1.8681	0.7200	8.6376
1054.6	0.583999	0.8760	0.156	0.1557	1.8681	0.7203	8.6418
1054.8	0.584234	0.8764	0.156	0.1557	1.8681	0.7207	8.6460
1055	0.584469	0.8767	0.156	0.1557	1.8681	0.7210	8.6503
1055.2	0.584705	0.8771	0.156	0.1557	1.8681	0.7214	8.6545
1055.4	0.584941	0.8774	0.156	0.1557	1.8681	0.7217	8.6588
1055.6	0.585177	0.8778	0.156	0.1557	1.8681	0.7221	8.6630
1055.8	0.585413	0.8781	0.156	0.1557	1.8681	0.7224	8.6673
1056	0.58565	0.8785	0.156	0.1557	1.8681	0.7228	8.6715
1056.2	0.585887	0.8788	0.156	0.1557	1.8681	0.7232	8.6758
1056.4	0.586124	0.8792	0.156	0.1557	1.8681	0.7235	8.6800
1056.6	0.586361	0.8795	0.156	0.1557	1.8681	0.7239	8.6843
1056.8	0.586598	0.8799	0.156	0.1557	1.8681	0.7242	8.6886
1057	0.586836	0.8803	0.156	0.1557	1.8681	0.7246	8.6929
1057.2	0.587074	0.8806	0.156	0.1557	1.8681	0.7249	8.6971
1057.4	0.587312	0.8810	0.156	0.1557	1.8681	0.7253	8.7014
1057.6	0.587551	0.8813	0.156	0.1557	1.8681	0.7257	8.7057
1057.8	0.587789	0.8817	0.156	0.1557	1.8681	0.7260	8.7100
1058	0.588028	0.8820	0.156	0.1557	1.8681	0.7264	8.7143
1058.2	0.588267	0.8824	0.156	0.1557	1.8681	0.7267	8.7186
1058.4	0.588507	0.8828	0.156	0.1557	1.8681	0.7271	8.7229
1058.6	0.588746	0.8831	0.156	0.1557	1.8681	0.7274	8.7272
1058.8	0.588986	0.8835	0.156	0.1557	1.8681	0.7278	8.7315
1059	0.589226	0.8838	0.156	0.1557	1.8681	0.7282	8.7359
1059.2	0.589467	0.8842	0.156	0.1557	1.8681	0.7285	8.7402
1059.4	0.589707	0.8846	0.156	0.1557	1.8681	0.7289	8.7445
1059.6	0.589948	0.8849	0.156	0.1557	1.8681	0.7293	8.7488
1059.8	0.590189	0.8853	0.156	0.1557	1.8681	0.7296	8.7532
1060	0.590431	0.8856	0.156	0.1557	1.8681	0.7300	8.7575
1060.2	0.590672	0.8860	0.156	0.1557	1.8681	0.7303	8.7619
1060.4	0.590914	0.8864	0.156	0.1557	1.8681	0.7307	8.7662
1060.6	0.591156	0.8867	0.156	0.1557	1.8681	0.7311	8.7706

1060.8	0.591398	0.8871	0.156	0.1557	1.8681	0.7314	8.7749
1061	0.591641	0.8875	0.156	0.1557	1.8681	0.7318	8.7793
1061.2	0.591884	0.8878	0.156	0.1557	1.8681	0.7322	8.7837
1061.4	0.592127	0.8882	0.156	0.1557	1.8681	0.7325	8.7880
1061.6	0.59237	0.8886	0.156	0.1557	1.8681	0.7329	8.7924
1061.8	0.592614	0.8889	0.156	0.1557	1.8681	0.7332	8.7968
1062	0.592858	0.8893	0.156	0.1557	1.8681	0.7336	8.8012
1062.2	0.593102	0.8897	0.156	0.1557	1.8681	0.7340	8.8056
1062.4	0.593346	0.8900	0.156	0.1557	1.8681	0.7343	8.8100
1062.6	0.593591	0.8904	0.156	0.1557	1.8681	0.7347	8.8144
1062.8	0.593836	0.8908	0.156	0.1557	1.8681	0.7351	8.8188
1063	0.594081	0.8911	0.156	0.1557	1.8681	0.7354	8.8232
1063.2	0.594326	0.8915	0.156	0.1557	1.8681	0.7358	8.8276
1063.4	0.594572	0.8919	0.156	0.1557	1.8681	0.7362	8.8320
1063.6	0.594818	0.8922	0.156	0.1557	1.8681	0.7366	8.8365
1063.8	0.595064	0.8926	0.156	0.1557	1.8681	0.7369	8.8409
1064	0.59531	0.8930	0.156	0.1557	1.8681	0.7373	8.8453
1064.2	0.595557	0.8933	0.156	0.1557	1.8681	0.7377	8.8498
1064.4	0.595804	0.8937	0.156	0.1557	1.8681	0.7380	8.8542
1064.6	0.596051	0.8941	0.156	0.1557	1.8681	0.7384	8.8586
1064.8	0.596299	0.8944	0.156	0.1557	1.8681	0.7388	8.8631
1065	0.596546	0.8948	0.156	0.1557	1.8681	0.7391	8.8675
1065.2	0.596794	0.8952	0.156	0.1557	1.8681	0.7395	8.8720
1065.4	0.597043	0.8956	0.156	0.1557	1.8681	0.7399	8.8765
1065.6	0.597291	0.8959	0.156	0.1557	1.8681	0.7403	8.8810
1065.8	0.59754	0.8963	0.156	0.1557	1.8681	0.7406	8.8854
1066	0.597789	0.8967	0.156	0.1557	1.8681	0.7410	8.8899
1066.2	0.598039	0.8971	0.156	0.1557	1.8681	0.7414	8.8944
1066.4	0.598288	0.8974	0.156	0.1557	1.8681	0.7418	8.8989
1066.6	0.598538	0.8978	0.156	0.1557	1.8681	0.7421	8.9034
1066.8	0.598788	0.8982	0.156	0.1557	1.8681	0.7425	8.9079
1067	0.599039	0.8986	0.156	0.1557	1.8681	0.7429	8.9124
1067.2	0.59929	0.8989	0.156	0.1557	1.8681	0.7433	8.9169
1067.4	0.599541	0.8993	0.156	0.1557	1.8681	0.7436	8.9214
1067.6	0.599792	0.8997	0.156	0.1557	1.8681	0.7440	8.9259
1067.8	0.600043	0.9001	0.156	0.1557	1.8681	0.7444	8.9305
1068	0.600295	0.9004	0.156	0.1557	1.8681	0.7448	8.9350
1068.2	0.600547	0.9008	0.156	0.1557	1.8681	0.7451	8.9395
1068.4	0.6008	0.9012	0.156	0.1557	1.8681	0.7455	8.9441
1068.6	0.601053	0.9016	0.156	0.1557	1.8681	0.7459	8.9486
1068.8	0.601306	0.9020	0.156	0.1557	1.8681	0.7463	8.9532
1069	0.601559	0.9023	0.156	0.1557	1.8681	0.7467	8.9577
1069.2	0.601813	0.9027	0.156	0.1557	1.8681	0.7470	8.9623
1069.4	0.602066	0.9031	0.156	0.1557	1.8681	0.7474	8.9669
1069.6	0.602321	0.9035	0.156	0.1557	1.8681	0.7478	8.9714
1069.8	0.602575	0.9039	0.156	0.1557	1.8681	0.7482	8.9760
1070	0.60283	0.9042	0.156	0.1557	1.8681	0.7486	8.9806

1070.2	0.603085	0.9046	0.156	0.1557	1.8681	0.7490	8.9852
1070.4	0.60334	0.9050	0.156	0.1557	1.8681	0.7493	8.9898
1070.6	0.603596	0.9054	0.156	0.1557	1.8681	0.7497	8.9944
1070.8	0.603852	0.9058	0.156	0.1557	1.8681	0.7501	8.9990
1071	0.604108	0.9062	0.156	0.1557	1.8681	0.7505	9.0036
1071.2	0.604364	0.9065	0.156	0.1557	1.8681	0.7509	9.0082
1071.4	0.604621	0.9069	0.156	0.1557	1.8681	0.7513	9.0128
1071.6	0.604878	0.9073	0.156	0.1557	1.8681	0.7516	9.0174
1071.8	0.605136	0.9077	0.156	0.1557	1.8681	0.7520	9.0221
1072	0.605393	0.9081	0.156	0.1557	1.8681	0.7524	9.0267
1072.2	0.605651	0.9085	0.156	0.1557	1.8681	0.7528	9.0313
1072.4	0.60591	0.9089	0.156	0.1557	1.8681	0.7532	9.0360
1072.6	0.606168	0.9093	0.156	0.1557	1.8681	0.7536	9.0406
1072.8	0.606427	0.9096	0.156	0.1557	1.8681	0.7540	9.0453
1073	0.606686	0.9100	0.156	0.1557	1.8681	0.7544	9.0500
1073.2	0.606946	0.9104	0.156	0.1557	1.8681	0.7547	9.0546
1073.4	0.607206	0.9108	0.156	0.1557	1.8681	0.7551	9.0593
1073.6	0.607466	0.9112	0.156	0.1557	1.8681	0.7555	9.0640
1073.8	0.607726	0.9116	0.156	0.1557	1.8681	0.7559	9.0687
1074	0.607987	0.9120	0.156	0.1557	1.8681	0.7563	9.0734
1074.2	0.608248	0.9124	0.156	0.1557	1.8681	0.7567	9.0781
1074.4	0.60851	0.9128	0.156	0.1557	1.8681	0.7571	9.0828
1074.6	0.608771	0.9132	0.156	0.1557	1.8681	0.7575	9.0875
1074.8	0.609033	0.9136	0.156	0.1557	1.8681	0.7579	9.0922
1075	0.609296	0.9139	0.156	0.1557	1.8681	0.7583	9.0969
1075.2	0.609558	0.9143	0.156	0.1557	1.8681	0.7587	9.1016
1075.4	0.609821	0.9147	0.156	0.1557	1.8681	0.7591	9.1064
1075.6	0.610085	0.9151	0.156	0.1557	1.8681	0.7595	9.1111
1075.8	0.610348	0.9155	0.156	0.1557	1.8681	0.7599	9.1158
1076	0.610612	0.9159	0.156	0.1557	1.8681	0.7602	9.1206
1076.2	0.610877	0.9163	0.156	0.1557	1.8681	0.7606	9.1253
1076.4	0.611141	0.9167	0.156	0.1557	1.8681	0.7610	9.1301
1076.6	0.611406	0.9171	0.156	0.1557	1.8681	0.7614	9.1349
1076.8	0.611672	0.9175	0.156	0.1557	1.8681	0.7618	9.1396
1077	0.611937	0.9179	0.156	0.1557	1.8681	0.7622	9.1444
1077.2	0.612203	0.9183	0.156	0.1557	1.8681	0.7626	9.1492
1077.4	0.61247	0.9187	0.156	0.1557	1.8681	0.7630	9.1540
1077.6	0.612736	0.9191	0.156	0.1557	1.8681	0.7634	9.1588
1077.8	0.613003	0.9195	0.156	0.1557	1.8681	0.7638	9.1636
1078	0.61327	0.9199	0.156	0.1557	1.8681	0.7642	9.1684
1078.2	0.613538	0.9203	0.156	0.1557	1.8681	0.7646	9.1732
1078.4	0.613806	0.9207	0.156	0.1557	1.8681	0.7650	9.1780
1078.6	0.614074	0.9211	0.156	0.1557	1.8681	0.7654	9.1829
1078.8	0.614343	0.9215	0.156	0.1557	1.8681	0.7658	9.1877
1079	0.614612	0.9219	0.156	0.1557	1.8681	0.7662	9.1925
1079.2	0.614882	0.9223	0.156	0.1557	1.8681	0.7667	9.1974
1079.4	0.615151	0.9227	0.156	0.1557	1.8681	0.7671	9.2022

1079.6	0.615421	0.9231	0.156	0.1557	1.8681	0.7675	9.2071
1079.8	0.615692	0.9235	0.156	0.1557	1.8681	0.7679	9.2120
1080	0.615962	0.9239	0.156	0.1557	1.8681	0.7683	9.2168
1080.2	0.616234	0.9244	0.156	0.1557	1.8681	0.7687	9.2217
1080.4	0.616505	0.9248	0.156	0.1557	1.8681	0.7691	9.2266
1080.6	0.616777	0.9252	0.156	0.1557	1.8681	0.7695	9.2315
1080.8	0.617049	0.9256	0.156	0.1557	1.8681	0.7699	9.2364
1081	0.617322	0.9260	0.156	0.1557	1.8681	0.7703	9.2413
1081.2	0.617595	0.9264	0.156	0.1557	1.8681	0.7707	9.2462
1081.4	0.617868	0.9268	0.156	0.1557	1.8681	0.7711	9.2511
1081.6	0.618141	0.9272	0.156	0.1557	1.8681	0.7715	9.2560
1081.8	0.618415	0.9276	0.156	0.1557	1.8681	0.7720	9.2610
1082	0.61869	0.9280	0.156	0.1557	1.8681	0.7724	9.2659
1082.2	0.618965	0.9284	0.156	0.1557	1.8681	0.7728	9.2708
1082.4	0.61924	0.9289	0.156	0.1557	1.8681	0.7732	9.2758
1082.6	0.619515	0.9293	0.156	0.1557	1.8681	0.7736	9.2807
1082.8	0.619791	0.9297	0.156	0.1557	1.8681	0.7740	9.2857
1083	0.620067	0.9301	0.156	0.1557	1.8681	0.7744	9.2907
1083.2	0.620344	0.9305	0.156	0.1557	1.8681	0.7748	9.2956
1083.4	0.620621	0.9309	0.156	0.1557	1.8681	0.7753	9.3006
1083.6	0.620898	0.9313	0.156	0.1557	1.8681	0.7757	9.3056
1083.8	0.621176	0.9318	0.156	0.1557	1.8681	0.7761	9.3106
1084	0.621454	0.9322	0.156	0.1557	1.8681	0.7765	9.3156
1084.2	0.621733	0.9326	0.156	0.1557	1.8681	0.7769	9.3206
1084.4	0.622012	0.9330	0.156	0.1557	1.8681	0.7773	9.3256
1084.6	0.622291	0.9334	0.156	0.1557	1.8681	0.7778	9.3307
1084.8	0.62257	0.9339	0.156	0.1557	1.8681	0.7782	9.3357
1085	0.622851	0.9343	0.156	0.1557	1.8681	0.7786	9.3407
1085.2	0.623131	0.9347	0.156	0.1557	1.8681	0.7790	9.3458
1085.4	0.623412	0.9351	0.156	0.1557	1.8681	0.7794	9.3508
1085.6	0.623693	0.9355	0.156	0.1557	1.8681	0.7799	9.3559
1085.8	0.623975	0.9360	0.156	0.1557	1.8681	0.7803	9.3610
1086	0.624257	0.9364	0.156	0.1557	1.8681	0.7807	9.3660
1086.2	0.624539	0.9368	0.156	0.1557	1.8681	0.7811	9.3711
1086.4	0.624822	0.9372	0.156	0.1557	1.8681	0.7816	9.3762
1086.6	0.625105	0.9377	0.156	0.1557	1.8681	0.7820	9.3813
1086.8	0.625389	0.9381	0.156	0.1557	1.8681	0.7824	9.3864
1087	0.625673	0.9385	0.156	0.1557	1.8681	0.7828	9.3915
1087.2	0.625958	0.9389	0.156	0.1557	1.8681	0.7833	9.3966
1087.4	0.626243	0.9394	0.156	0.1557	1.8681	0.7837	9.4017
1087.6	0.626528	0.9398	0.156	0.1557	1.8681	0.7841	9.4069
1087.8	0.626814	0.9402	0.156	0.1557	1.8681	0.7845	9.4120
1088	0.6271	0.9406	0.156	0.1557	1.8681	0.7850	9.4172
1088.2	0.627386	0.9411	0.156	0.1557	1.8681	0.7854	9.4223
1088.4	0.627673	0.9415	0.156	0.1557	1.8681	0.7858	9.4275
1088.6	0.627961	0.9419	0.156	0.1557	1.8681	0.7863	9.4327
1088.8	0.628249	0.9424	0.156	0.1557	1.8681	0.7867	9.4378

1089	0.628537	0.9428	0.156	0.1557	1.8681	0.7871	9.4430
1089.2	0.628826	0.9432	0.156	0.1557	1.8681	0.7876	9.4482
1089.4	0.629115	0.9437	0.156	0.1557	1.8681	0.7880	9.4534
1089.6	0.629404	0.9441	0.156	0.1557	1.8681	0.7884	9.4586
1089.8	0.629694	0.9445	0.156	0.1557	1.8681	0.7889	9.4638
1090	0.629985	0.9450	0.156	0.1557	1.8681	0.7893	9.4691
1090.2	0.630276	0.9454	0.156	0.1557	1.8681	0.7897	9.4743
1090.4	0.630567	0.9459	0.156	0.1557	1.8681	0.7902	9.4795
1090.6	0.630859	0.9463	0.156	0.1557	1.8681	0.7906	9.4848
1090.8	0.631151	0.9467	0.156	0.1557	1.8681	0.7911	9.4900
1091	0.631444	0.9472	0.156	0.1557	1.8681	0.7915	9.4953
1091.2	0.631737	0.9476	0.156	0.1557	1.8681	0.7919	9.5006
1091.4	0.63203	0.9480	0.156	0.1557	1.8681	0.7924	9.5058
1091.6	0.632324	0.9485	0.156	0.1557	1.8681	0.7928	9.5111
1091.8	0.632619	0.9489	0.156	0.1557	1.8681	0.7933	9.5164
1092	0.632914	0.9494	0.156	0.1557	1.8681	0.7937	9.5217
1092.2	0.633209	0.9498	0.156	0.1557	1.8681	0.7941	9.5271
1092.4	0.633505	0.9503	0.156	0.1557	1.8681	0.7946	9.5324
1092.6	0.633802	0.9507	0.156	0.1557	1.8681	0.7950	9.5377
1092.8	0.634098	0.9511	0.156	0.1557	1.8681	0.7955	9.5430
1093	0.634396	0.9516	0.156	0.1557	1.8681	0.7959	9.5484
1093.2	0.634693	0.9520	0.156	0.1557	1.8681	0.7964	9.5537
1093.4	0.634992	0.9525	0.156	0.1557	1.8681	0.7968	9.5591
1093.6	0.63529	0.9529	0.156	0.1557	1.8681	0.7973	9.5645
1093.8	0.63559	0.9534	0.156	0.1557	1.8681	0.7977	9.5699
1094	0.635889	0.9538	0.156	0.1557	1.8681	0.7982	9.5753
1094.2	0.636189	0.9543	0.156	0.1557	1.8681	0.7986	9.5807
1094.4	0.63649	0.9547	0.156	0.1557	1.8681	0.7991	9.5861
1094.6	0.636791	0.9552	0.156	0.1557	1.8681	0.7995	9.5915
1094.8	0.637093	0.9556	0.156	0.1557	1.8681	0.8000	9.5969
1095	0.637395	0.9561	0.156	0.1557	1.8681	0.8004	9.6023
1095.2	0.637698	0.9565	0.156	0.1557	1.8681	0.8009	9.6078
1095.4	0.638001	0.9570	0.156	0.1557	1.8681	0.8013	9.6132
1095.6	0.638304	0.9575	0.156	0.1557	1.8681	0.8018	9.6187
1095.8	0.638609	0.9579	0.156	0.1557	1.8681	0.8022	9.6242
1096	0.638913	0.9584	0.156	0.1557	1.8681	0.8027	9.6296
1096.2	0.639218	0.9588	0.156	0.1557	1.8681	0.8032	9.6351
1096.4	0.639524	0.9593	0.156	0.1557	1.8681	0.8036	9.6406
1096.6	0.63983	0.9597	0.156	0.1557	1.8681	0.8041	9.6461
1096.8	0.640137	0.9602	0.156	0.1557	1.8681	0.8045	9.6517
1097	0.640444	0.9607	0.156	0.1557	1.8681	0.8050	9.6572
1097.2	0.640752	0.9611	0.156	0.1557	1.8681	0.8055	9.6627
1097.4	0.64106	0.9616	0.156	0.1557	1.8681	0.8059	9.6683
1097.6	0.641369	0.9621	0.156	0.1557	1.8681	0.8064	9.6738
1097.8	0.641679	0.9625	0.156	0.1557	1.8681	0.8068	9.6794
1098	0.641988	0.9630	0.156	0.1557	1.8681	0.8073	9.6849
1098.2	0.642299	0.9634	0.156	0.1557	1.8681	0.8078	9.6905

1098.4	0.64261	0.9639	0.156	0.1557	1.8681	0.8082	9.6961
1098.6	0.642921	0.9644	0.156	0.1557	1.8681	0.8087	9.7017
1098.8	0.643233	0.9649	0.156	0.1557	1.8681	0.8092	9.7073
1099	0.643546	0.9653	0.156	0.1557	1.8681	0.8096	9.7130
1099.2	0.643859	0.9658	0.156	0.1557	1.8681	0.8101	9.7186
1099.4	0.644173	0.9663	0.156	0.1557	1.8681	0.8106	9.7242
1099.6	0.644487	0.9667	0.156	0.1557	1.8681	0.8111	9.7299
1099.8	0.644802	0.9672	0.156	0.1557	1.8681	0.8115	9.7356
1100	0.645118	0.9677	0.156	0.1557	1.8681	0.8120	9.7412
1100.2	0.645434	0.9682	0.156	0.1557	1.8681	0.8125	9.7469
1100.4	0.64575	0.9686	0.156	0.1557	1.8681	0.8130	9.7526
1100.6	0.646067	0.9691	0.156	0.1557	1.8681	0.8134	9.7583
1100.8	0.646385	0.9696	0.156	0.1557	1.8681	0.8139	9.7640
1101	0.646703	0.9701	0.156	0.1557	1.8681	0.8144	9.7697
1101.2	0.647022	0.9705	0.156	0.1557	1.8681	0.8149	9.7755
1101.4	0.647342	0.9710	0.156	0.1557	1.8681	0.8153	9.7812
1101.6	0.647662	0.9715	0.156	0.1557	1.8681	0.8158	9.7870
1101.8	0.647983	0.9720	0.156	0.1557	1.8681	0.8163	9.7927
1102	0.648304	0.9725	0.156	0.1557	1.8681	0.8168	9.7985
1102.2	0.648626	0.9729	0.156	0.1557	1.8681	0.8173	9.8043
1102.4	0.648948	0.9734	0.156	0.1557	1.8681	0.8178	9.8101
1102.6	0.649271	0.9739	0.156	0.1557	1.8681	0.8182	9.8159
1102.8	0.649595	0.9744	0.156	0.1557	1.8681	0.8187	9.8217
1103	0.64992	0.9749	0.156	0.1557	1.8681	0.8192	9.8276
1103.2	0.650245	0.9754	0.156	0.1557	1.8681	0.8197	9.8334
1103.4	0.65057	0.9759	0.156	0.1557	1.8681	0.8202	9.8393
1103.6	0.650896	0.9763	0.156	0.1557	1.8681	0.8207	9.8451
1103.8	0.651223	0.9768	0.156	0.1557	1.8681	0.8212	9.8510
1104	0.651551	0.9773	0.156	0.1557	1.8681	0.8217	9.8569
1104.2	0.651879	0.9778	0.156	0.1557	1.8681	0.8221	9.8628
1104.4	0.652208	0.9783	0.156	0.1557	1.8681	0.8226	9.8687
1104.6	0.652537	0.9788	0.156	0.1557	1.8681	0.8231	9.8746
1104.8	0.652867	0.9793	0.156	0.1557	1.8681	0.8236	9.8806
1105	0.653198	0.9798	0.156	0.1557	1.8681	0.8241	9.8865
1105.2	0.653529	0.9803	0.156	0.1557	1.8681	0.8246	9.8925
1105.4	0.653861	0.9808	0.156	0.1557	1.8681	0.8251	9.8985
1105.6	0.654194	0.9813	0.156	0.1557	1.8681	0.8256	9.9044
1105.8	0.654528	0.9818	0.156	0.1557	1.8681	0.8261	9.9104
1106	0.654862	0.9823	0.156	0.1557	1.8681	0.8266	9.9164
1106.2	0.655197	0.9828	0.156	0.1557	1.8681	0.8271	9.9225
1106.4	0.655532	0.9833	0.156	0.1557	1.8681	0.8276	9.9285
1106.6	0.655868	0.9838	0.156	0.1557	1.8681	0.8281	9.9345
1106.8	0.656205	0.9843	0.156	0.1557	1.8681	0.8286	9.9406
1107	0.656543	0.9848	0.156	0.1557	1.8681	0.8291	9.9467
1107.2	0.656881	0.9853	0.156	0.1557	1.8681	0.8297	9.9528
1107.4	0.65722	0.9858	0.156	0.1557	1.8681	0.8302	9.9589
1107.6	0.65756	0.9863	0.156	0.1557	1.8681	0.8307	9.9650

1107.8	0.6579	0.9869	0.156	0.1557	1.8681	0.8312	9.9711
1108	0.658241	0.9874	0.156	0.1557	1.8681	0.8317	9.9772
1108.2	0.658583	0.9879	0.156	0.1557	1.8681	0.8322	9.9834
1108.4	0.658926	0.9884	0.156	0.1557	1.8681	0.8327	9.9895
1108.6	0.659269	0.9889	0.156	0.1557	1.8681	0.8332	9.9957
1108.8	0.659613	0.9894	0.156	0.1557	1.8681	0.8337	10.0019
1109	0.659958	0.9899	0.156	0.1557	1.8681	0.8343	10.0081
1109.2	0.660304	0.9905	0.156	0.1557	1.8681	0.8348	10.0143
1109.4	0.66065	0.9910	0.156	0.1557	1.8681	0.8353	10.0205
1109.6	0.660997	0.9915	0.156	0.1557	1.8681	0.8358	10.0268
1109.8	0.661345	0.9920	0.156	0.1557	1.8681	0.8363	10.0330
1110	0.661694	0.9925	0.156	0.1557	1.8681	0.8369	10.0393
1110.2	0.662043	0.9931	0.156	0.1557	1.8681	0.8374	10.0456
1110.4	0.662393	0.9936	0.156	0.1557	1.8681	0.8379	10.0519
1110.6	0.662744	0.9941	0.156	0.1557	1.8681	0.8384	10.0582
1110.8	0.663096	0.9946	0.156	0.1557	1.8681	0.8390	10.0645
1111	0.663449	0.9952	0.156	0.1557	1.8681	0.8395	10.0708
1111.2	0.663802	0.9957	0.156	0.1557	1.8681	0.8400	10.0772
1111.4	0.664156	0.9962	0.156	0.1557	1.8681	0.8406	10.0836
1111.6	0.664512	0.9968	0.156	0.1557	1.8681	0.8411	10.0900
1111.8	0.664867	0.9973	0.156	0.1557	1.8681	0.8416	10.0964
1112	0.665224	0.9978	0.156	0.1557	1.8681	0.8422	10.1028
1112.2	0.665582	0.9984	0.156	0.1557	1.8681	0.8427	10.1092
1112.4	0.66594	0.9989	0.156	0.1557	1.8681	0.8432	10.1156
1112.6	0.666299	0.9994	0.156	0.1557	1.8681	0.8438	10.1221
1112.8	0.66666	1.0000	0.156	0.1557	1.8681	0.8443	10.1286
1113	0.667021	1.0005	0.156	0.1557	1.8681	0.8449	10.1351
1113.2	0.667382	1.0011	0.156	0.1557	1.8681	0.8454	10.1416
1113.4	0.667745	1.0016	0.156	0.1557	1.8681	0.8459	10.1481
1113.6	0.668109	1.0022	0.156	0.1557	1.8681	0.8465	10.1546
1113.8	0.668473	1.0027	0.156	0.1557	1.8681	0.8470	10.1612
1114	0.668839	1.0033	0.156	0.1557	1.8681	0.8476	10.1678
1114.2	0.669205	1.0038	0.156	0.1557	1.8681	0.8481	10.1743
1114.4	0.669572	1.0044	0.156	0.1557	1.8681	0.8487	10.1809
1114.6	0.66994	1.0049	0.156	0.1557	1.8681	0.8492	10.1876
1114.8	0.67031	1.0055	0.156	0.1557	1.8681	0.8498	10.1942
1115	0.67068	1.0060	0.156	0.1557	1.8681	0.8503	10.2008
1115.2	0.671051	1.0066	0.156	0.1557	1.8681	0.8509	10.2075
1115.4	0.671422	1.0071	0.156	0.1557	1.8681	0.8515	10.2142
1115.6	0.671795	1.0077	0.156	0.1557	1.8681	0.8520	10.2209
1115.8	0.672169	1.0083	0.156	0.1557	1.8681	0.8526	10.2276
1116	0.672544	1.0088	0.156	0.1557	1.8681	0.8531	10.2344
1116.2	0.67292	1.0094	0.156	0.1557	1.8681	0.8537	10.2411
1116.4	0.673296	1.0099	0.156	0.1557	1.8681	0.8543	10.2479
1116.6	0.673674	1.0105	0.156	0.1557	1.8681	0.8548	10.2547
1116.8	0.674053	1.0111	0.156	0.1557	1.8681	0.8554	10.2615
1117	0.674433	1.0116	0.156	0.1557	1.8681	0.8560	10.2683

1117.2	0.674814	1.0122	0.156	0.1557	1.8681	0.8565	10.2752
1117.4	0.675195	1.0128	0.156	0.1557	1.8681	0.8571	10.2820
1117.6	0.675578	1.0134	0.156	0.1557	1.8681	0.8577	10.2889
1117.8	0.675962	1.0139	0.156	0.1557	1.8681	0.8583	10.2958
1118	0.676347	1.0145	0.156	0.1557	1.8681	0.8588	10.3027
1118.2	0.676733	1.0151	0.156	0.1557	1.8681	0.8594	10.3097
1118.4	0.67712	1.0157	0.156	0.1557	1.8681	0.8600	10.3166
1118.6	0.677509	1.0163	0.156	0.1557	1.8681	0.8606	10.3236
1118.8	0.677898	1.0168	0.156	0.1557	1.8681	0.8612	10.3306
1119	0.678288	1.0174	0.156	0.1557	1.8681	0.8618	10.3376
1119.2	0.67868	1.0180	0.156	0.1557	1.8681	0.8623	10.3447
1119.4	0.679072	1.0186	0.156	0.1557	1.8681	0.8629	10.3517
1119.6	0.679466	1.0192	0.156	0.1557	1.8681	0.8635	10.3588
1119.8	0.679861	1.0198	0.156	0.1557	1.8681	0.8641	10.3659
1120	0.680257	1.0204	0.156	0.1557	1.8681	0.8647	10.3730
1120.2	0.680654	1.0210	0.156	0.1557	1.8681	0.8653	10.3801
1120.4	0.681053	1.0216	0.156	0.1557	1.8681	0.8659	10.3873
1120.6	0.681452	1.0222	0.156	0.1557	1.8681	0.8665	10.3945
1120.8	0.681853	1.0228	0.156	0.1557	1.8681	0.8671	10.4017
1121	0.682255	1.0234	0.156	0.1557	1.8681	0.8677	10.4089
1121.2	0.682658	1.0240	0.156	0.1557	1.8681	0.8683	10.4162
1121.4	0.683063	1.0246	0.156	0.1557	1.8681	0.8689	10.4234
1121.6	0.683469	1.0252	0.156	0.1557	1.8681	0.8695	10.4307
1121.8	0.683876	1.0258	0.156	0.1557	1.8681	0.8701	10.4380
1122	0.684284	1.0264	0.156	0.1557	1.8681	0.8708	10.4454
1122.2	0.684693	1.0270	0.156	0.1557	1.8681	0.8714	10.4527
1122.4	0.685104	1.0277	0.156	0.1557	1.8681	0.8720	10.4601
1122.6	0.685516	1.0283	0.156	0.1557	1.8681	0.8726	10.4675
1122.8	0.68593	1.0289	0.156	0.1557	1.8681	0.8732	10.4750
1123	0.686344	1.0295	0.156	0.1557	1.8681	0.8738	10.4824
1123.2	0.68676	1.0301	0.156	0.1557	1.8681	0.8745	10.4899
1123.4	0.687178	1.0308	0.156	0.1557	1.8681	0.8751	10.4974
1123.6	0.687597	1.0314	0.156	0.1557	1.8681	0.8757	10.5049
1123.8	0.688017	1.0320	0.156	0.1557	1.8681	0.8764	10.5125
1124	0.688439	1.0327	0.156	0.1557	1.8681	0.8770	10.5200
1124.2	0.688862	1.0333	0.156	0.1557	1.8681	0.8776	10.5276
1124.4	0.689286	1.0339	0.156	0.1557	1.8681	0.8783	10.5353
1124.6	0.689712	1.0346	0.156	0.1557	1.8681	0.8789	10.5429
1124.8	0.690139	1.0352	0.156	0.1557	1.8681	0.8795	10.5506
1125	0.690568	1.0359	0.156	0.1557	1.8681	0.8802	10.5583
1125.2	0.690999	1.0365	0.156	0.1557	1.8681	0.8808	10.5660
1125.4	0.691431	1.0371	0.156	0.1557	1.8681	0.8815	10.5738
1125.6	0.691864	1.0378	0.156	0.1557	1.8681	0.8821	10.5816
1125.8	0.692299	1.0384	0.156	0.1557	1.8681	0.8828	10.5894
1126	0.692735	1.0391	0.156	0.1557	1.8681	0.8834	10.5973
1126.2	0.693174	1.0398	0.156	0.1557	1.8681	0.8841	10.6051
1126.4	0.693613	1.0404	0.156	0.1557	1.8681	0.8847	10.6130

1126.6	0.694055	1.0411	0.156	0.1557	1.8681	0.8854	10.6210
1126.8	0.694498	1.0417	0.156	0.1557	1.8681	0.8861	10.6289
1127	0.694942	1.0424	0.156	0.1557	1.8681	0.8867	10.6369
1127.2	0.695388	1.0431	0.156	0.1557	1.8681	0.8874	10.6449
1127.4	0.695836	1.0438	0.156	0.1557	1.8681	0.8881	10.6530
1127.6	0.696286	1.0444	0.156	0.1557	1.8681	0.8888	10.6610
1127.8	0.696738	1.0451	0.156	0.1557	1.8681	0.8894	10.6692
1128	0.697191	1.0458	0.156	0.1557	1.8681	0.8901	10.6773
1128.2	0.697646	1.0465	0.156	0.1557	1.8681	0.8908	10.6855
1128.4	0.698102	1.0472	0.156	0.1557	1.8681	0.8915	10.6937
1128.6	0.698561	1.0478	0.156	0.1557	1.8681	0.8922	10.7019
1128.8	0.699022	1.0485	0.156	0.1557	1.8681	0.8929	10.7102
1129	0.699484	1.0492	0.156	0.1557	1.8681	0.8936	10.7185
1129.2	0.699948	1.0499	0.156	0.1557	1.8681	0.8943	10.7268
1129.4	0.700414	1.0506	0.156	0.1557	1.8681	0.8949	10.7352
1129.6	0.700882	1.0513	0.156	0.1557	1.8681	0.8957	10.7436
1129.8	0.701352	1.0520	0.156	0.1557	1.8681	0.8964	10.7521
1130	0.701824	1.0527	0.156	0.1557	1.8681	0.8971	10.7605
1130.2	0.702298	1.0534	0.156	0.1557	1.8681	0.8978	10.7690
1130.4	0.702774	1.0542	0.156	0.1557	1.8681	0.8985	10.7776
1130.6	0.703253	1.0549	0.156	0.1557	1.8681	0.8992	10.7862
1130.8	0.703733	1.0556	0.156	0.1557	1.8681	0.8999	10.7948
1131	0.704215	1.0563	0.156	0.1557	1.8681	0.9007	10.8035
1131.2	0.7047	1.0570	0.156	0.1557	1.8681	0.9014	10.8122
1131.4	0.705187	1.0578	0.156	0.1557	1.8681	0.9021	10.8209
1131.6	0.705676	1.0585	0.156	0.1557	1.8681	0.9028	10.8297
1131.8	0.706167	1.0593	0.156	0.1557	1.8681	0.9036	10.8385
1132	0.70666	1.0600	0.156	0.1557	1.8681	0.9043	10.8474
1132.2	0.707156	1.0607	0.156	0.1557	1.8681	0.9051	10.8563
1132.4	0.707654	1.0615	0.156	0.1557	1.8681	0.9058	10.8652
1132.6	0.708155	1.0622	0.156	0.1557	1.8681	0.9066	10.8742
1132.8	0.708658	1.0630	0.156	0.1557	1.8681	0.9073	10.8833
1133	0.709164	1.0637	0.156	0.1557	1.8681	0.9081	10.8923
1133.2	0.709672	1.0645	0.156	0.1557	1.8681	0.9088	10.9015
1133.4	0.710182	1.0653	0.156	0.1557	1.8681	0.9096	10.9106
1133.6	0.710695	1.0660	0.156	0.1557	1.8681	0.9104	10.9198
1133.8	0.711211	1.0668	0.156	0.1557	1.8681	0.9111	10.9291
1134	0.71173	1.0676	0.156	0.1557	1.8681	0.9119	10.9384
1134.2	0.712251	1.0684	0.156	0.1557	1.8681	0.9127	10.9478
1134.4	0.712775	1.0692	0.156	0.1557	1.8681	0.9135	10.9572
1134.6	0.713302	1.0700	0.156	0.1557	1.8681	0.9143	10.9666
1134.8	0.713831	1.0707	0.156	0.1557	1.8681	0.9151	10.9761
1135	0.714364	1.0715	0.156	0.1557	1.8681	0.9159	10.9857
1135.2	0.714899	1.0723	0.156	0.1557	1.8681	0.9167	10.9953
1135.4	0.715438	1.0732	0.156	0.1557	1.8681	0.9175	11.0050
1135.6	0.715979	1.0740	0.156	0.1557	1.8681	0.9183	11.0147
1135.8	0.716524	1.0748	0.156	0.1557	1.8681	0.9191	11.0245

1136	0.717072	1.0756	0.156	0.1557	1.8681	0.9199	11.0343
1136.2	0.717623	1.0764	0.156	0.1557	1.8681	0.9208	11.0442
1136.4	0.718177	1.0773	0.156	0.1557	1.8681	0.9216	11.0541
1136.6	0.718735	1.0781	0.156	0.1557	1.8681	0.9224	11.0641
1136.8	0.719296	1.0789	0.156	0.1557	1.8681	0.9233	11.0742
1137	0.71986	1.0798	0.156	0.1557	1.8681	0.9241	11.0843
1137.2	0.720428	1.0806	0.156	0.1557	1.8681	0.9250	11.0945
1137.4	0.721	1.0815	0.156	0.1557	1.8681	0.9258	11.1048
1137.6	0.721575	1.0824	0.156	0.1557	1.8681	0.9267	11.1151
1137.8	0.722155	1.0832	0.156	0.1557	1.8681	0.9276	11.1255
1138	0.722738	1.0841	0.156	0.1557	1.8681	0.9284	11.1360
1138.2	0.723325	1.0850	0.156	0.1557	1.8681	0.9293	11.1465
1138.4	0.723916	1.0859	0.156	0.1557	1.8681	0.9302	11.1571
1138.6	0.724511	1.0868	0.156	0.1557	1.8681	0.9311	11.1678
1138.8	0.72511	1.0877	0.156	0.1557	1.8681	0.9320	11.1785
1139	0.725713	1.0886	0.156	0.1557	1.8681	0.9329	11.1894
1139.2	0.726321	1.0895	0.156	0.1557	1.8681	0.9338	11.2003
1139.4	0.726934	1.0904	0.156	0.1557	1.8681	0.9347	11.2112
1139.6	0.727551	1.0913	0.156	0.1557	1.8681	0.9357	11.2223
1139.8	0.728172	1.0923	0.156	0.1557	1.8681	0.9366	11.2335
1140	0.728799	1.0932	0.156	0.1557	1.8681	0.9375	11.2447
1140.2	0.72943	1.0941	0.156	0.1557	1.8681	0.9385	11.2560
1140.4	0.730067	1.0951	0.156	0.1557	1.8681	0.9394	11.2674
1140.6	0.730709	1.0961	0.156	0.1557	1.8681	0.9404	11.2789
1140.8	0.731356	1.0970	0.156	0.1557	1.8681	0.9414	11.2905
1141	0.732008	1.0980	0.156	0.1557	1.8681	0.9423	11.3022
1141.2	0.732666	1.0990	0.156	0.1557	1.8681	0.9433	11.3140
1141.4	0.73333	1.1000	0.156	0.1557	1.8681	0.9443	11.3259
1141.6	0.733999	1.1010	0.156	0.1557	1.8681	0.9453	11.3379
1141.8	0.734675	1.1020	0.156	0.1557	1.8681	0.9463	11.3500
1142	0.735357	1.1030	0.156	0.1557	1.8681	0.9474	11.3622
1142.2	0.736046	1.1041	0.156	0.1557	1.8681	0.9484	11.3746
1142.4	0.736741	1.1051	0.156	0.1557	1.8681	0.9494	11.3870
1142.6	0.737443	1.1062	0.156	0.1557	1.8681	0.9505	11.3996
1142.8	0.738152	1.1072	0.156	0.1557	1.8681	0.9516	11.4123
1143	0.738868	1.1083	0.156	0.1557	1.8681	0.9526	11.4251
1143.2	0.739592	1.1094	0.156	0.1557	1.8681	0.9537	11.4381
1143.4	0.740323	1.1105	0.156	0.1557	1.8681	0.9548	11.4512
1143.6	0.741063	1.1116	0.156	0.1557	1.8681	0.9559	11.4644
1143.8	0.741811	1.1127	0.156	0.1557	1.8681	0.9570	11.4778
1144	0.742567	1.1139	0.156	0.1557	1.8681	0.9582	11.4914
1144.2	0.743333	1.1150	0.156	0.1557	1.8681	0.9593	11.5050
1144.4	0.744108	1.1162	0.156	0.1557	1.8681	0.9605	11.5189
1144.6	0.744892	1.1173	0.156	0.1557	1.8681	0.9617	11.5329
1144.8	0.745687	1.1185	0.156	0.1557	1.8681	0.9629	11.5472
1145	0.746492	1.1197	0.156	0.1557	1.8681	0.9641	11.5615
1145.2	0.747307	1.1210	0.156	0.1557	1.8681	0.9653	11.5761

1145.4	0.748135	1.1222	0.156	0.1557	1.8681	0.9665	11.5909
1145.6	0.748974	1.1235	0.156	0.1557	1.8681	0.9678	11.6059
1145.8	0.749825	1.1247	0.156	0.1557	1.8681	0.9691	11.6211
1146	0.750689	1.1260	0.156	0.1557	1.8681	0.9704	11.6366
1146.2	0.751567	1.1274	0.156	0.1557	1.8681	0.9717	11.6523
1146.4	0.75246	1.1287	0.156	0.1557	1.8681	0.9730	11.6682
1146.6	0.753367	1.1301	0.156	0.1557	1.8681	0.9744	11.6844
1146.8	0.754291	1.1314	0.156	0.1557	1.8681	0.9758	11.7009
1147	0.755231	1.1328	0.156	0.1557	1.8681	0.9772	11.7176
1147.2	0.75619	1.1343	0.156	0.1557	1.8681	0.9786	11.7347
1147.4	0.757167	1.1358	0.156	0.1557	1.8681	0.9801	11.7522
1147.6	0.758164	1.1372	0.156	0.1557	1.8681	0.9816	11.7699
1147.8	0.759183	1.1388	0.156	0.1557	1.8681	0.9831	11.7881
1148	0.760225	1.1403	0.156	0.1557	1.8681	0.9847	11.8066
1148.2	0.761292	1.1419	0.156	0.1557	1.8681	0.9863	11.8256
1148.4	0.762385	1.1436	0.156	0.1557	1.8681	0.9879	11.8450
1148.6	0.763507	1.1453	0.156	0.1557	1.8681	0.9896	11.8650
1148.8	0.764661	1.1470	0.156	0.1557	1.8681	0.9913	11.8855
1149	0.76585	1.1488	0.156	0.1557	1.8681	0.9931	11.9065
1149.2	0.767076	1.1506	0.156	0.1557	1.8681	0.9949	11.9283
1149.4	0.768344	1.1525	0.156	0.1557	1.8681	0.9968	11.9507
1149.6	0.769659	1.1545	0.156	0.1557	1.8681	0.9988	11.9740
1149.8	0.771026	1.1565	0.156	0.1557	1.8681	1.0009	11.9981
1150	0.772454	1.1587	0.156	0.1557	1.8681	1.0030	12.0233
1150.2	0.77395	1.1609	0.156	0.1557	1.8681	1.0053	12.0496
1150.4	0.775526	1.1633	0.156	0.1557	1.8681	1.0076	12.0772
1150.6	0.777198	1.1658	0.156	0.1557	1.8681	1.0101	12.1065
1150.8	0.778987	1.1685	0.156	0.1557	1.8681	1.0128	12.1376
1151	0.780923	1.1714	0.156	0.1557	1.8681	1.0157	12.1711
1151.2	0.78305	1.1746	0.156	0.1557	1.8681	1.0189	12.2077
1151.4	0.785447	1.1782	0.156	0.1557	1.8681	1.0225	12.2484
1151.6	0.788262	1.1824	0.156	0.1557	1.8681	1.0267	12.2953
1151.8	0.79187	1.1878	0.156	0.1557	1.8681	1.0321	12.3531
1152	0.8	1.2000	0.156	0.1557	1.8681	1.0443	12.4588
1152.2	0.804237	1.2064	0.156	0.1557	1.8681	1.0507	12.5701
1152.4	0.806118	1.2092	0.156	0.1557	1.8681	1.0535	12.6251
1152.6	0.807585	1.2114	0.156	0.1557	1.8681	1.0557	12.6553
1152.8	0.808835	1.2133	0.156	0.1557	1.8681	1.0576	12.6797
1153	0.809944	1.2149	0.156	0.1557	1.8681	1.0592	12.7010
1153.2	0.810953	1.2164	0.156	0.1557	1.8681	1.0608	12.7200
1153.4	0.811885	1.2178	0.156	0.1557	1.8681	1.0622	12.7375
1153.6	0.812757	1.2191	0.156	0.1557	1.8681	1.0635	12.7537
1153.8	0.813578	1.2204	0.156	0.1557	1.8681	1.0647	12.7690
1154	0.814358	1.2215	0.156	0.1557	1.8681	1.0659	12.7834
1154.2	0.815102	1.2227	0.156	0.1557	1.8681	1.0670	12.7971
1154.4	0.815815	1.2237	0.156	0.1557	1.8681	1.0681	12.8102
1154.6	0.8165	1.2248	0.156	0.1557	1.8681	1.0691	12.8228

1154.8	0.817161	1.2257	0.156	0.1557	1.8681	1.0701	12.8349
1155	0.8178	1.2267	0.156	0.1557	1.8681	1.0710	12.8466
1155.2	0.81842	1.2276	0.156	0.1557	1.8681	1.0720	12.8579
1155.4	0.819021	1.2285	0.156	0.1557	1.8681	1.0729	12.8689
1155.6	0.819606	1.2294	0.156	0.1557	1.8681	1.0737	12.8796
1155.8	0.820176	1.2303	0.156	0.1557	1.8681	1.0746	12.8900
1156	0.820732	1.2311	0.156	0.1557	1.8681	1.0754	12.9001
1156.2	0.821275	1.2319	0.156	0.1557	1.8681	1.0762	12.9100
1156.4	0.821806	1.2327	0.156	0.1557	1.8681	1.0770	12.9197
1156.6	0.822326	1.2335	0.156	0.1557	1.8681	1.0778	12.9291
1156.8	0.822835	1.2343	0.156	0.1557	1.8681	1.0786	12.9384
1157	0.823335	1.2350	0.156	0.1557	1.8681	1.0793	12.9475
1157.2	0.823825	1.2357	0.156	0.1557	1.8681	1.0801	12.9564
1157.4	0.824306	1.2365	0.156	0.1557	1.8681	1.0808	12.9651
1157.6	0.824779	1.2372	0.156	0.1557	1.8681	1.0815	12.9737
1157.8	0.825245	1.2379	0.156	0.1557	1.8681	1.0822	12.9822
1158	0.825702	1.2386	0.156	0.1557	1.8681	1.0829	12.9905
1158.2	0.826153	1.2392	0.156	0.1557	1.8681	1.0836	12.9986
1158.4	0.826597	1.2399	0.156	0.1557	1.8681	1.0842	13.0067
1158.6	0.827034	1.2406	0.156	0.1557	1.8681	1.0849	13.0146
1158.8	0.827465	1.2412	0.156	0.1557	1.8681	1.0855	13.0224
1159	0.82789	1.2418	0.156	0.1557	1.8681	1.0862	13.0301
1159.2	0.82831	1.2425	0.156	0.1557	1.8681	1.0868	13.0377
1159.4	0.828724	1.2431	0.156	0.1557	1.8681	1.0874	13.0452
1159.6	0.829133	1.2437	0.156	0.1557	1.8681	1.0880	13.0527
1159.8	0.829537	1.2443	0.156	0.1557	1.8681	1.0886	13.0600
1160	0.829936	1.2449	0.156	0.1557	1.8681	1.0892	13.0672
1160.2	0.83033	1.2455	0.156	0.1557	1.8681	1.0898	13.0743
1160.4	0.83072	1.2461	0.156	0.1557	1.8681	1.0904	13.0814
1160.6	0.831105	1.2467	0.156	0.1557	1.8681	1.0910	13.0884
1160.8	0.831487	1.2472	0.156	0.1557	1.8681	1.0916	13.0953
1161	0.831864	1.2478	0.156	0.1557	1.8681	1.0921	13.1021
1161.2	0.832237	1.2484	0.156	0.1557	1.8681	1.0927	13.1089
1161.4	0.832607	1.2489	0.156	0.1557	1.8681	1.0932	13.1155
1161.6	0.832973	1.2495	0.156	0.1557	1.8681	1.0938	13.1222
1161.8	0.833335	1.2500	0.156	0.1557	1.8681	1.0943	13.1287
1162	0.833694	1.2505	0.156	0.1557	1.8681	1.0949	13.1352
1162.2	0.834049	1.2511	0.156	0.1557	1.8681	1.0954	13.1416
1162.4	0.834402	1.2516	0.156	0.1557	1.8681	1.0959	13.1480
1162.6	0.834751	1.2521	0.156	0.1557	1.8681	1.0965	13.1543
1162.8	0.835097	1.2526	0.156	0.1557	1.8681	1.0970	13.1606
1163	0.83544	1.2532	0.156	0.1557	1.8681	1.0975	13.1668
1163.2	0.83578	1.2537	0.156	0.1557	1.8681	1.0980	13.1729
1163.4	0.836117	1.2542	0.156	0.1557	1.8681	1.0985	13.1790
1163.6	0.836451	1.2547	0.156	0.1557	1.8681	1.0990	13.1851
1163.8	0.836783	1.2552	0.156	0.1557	1.8681	1.0995	13.1911
1164	0.837112	1.2557	0.156	0.1557	1.8681	1.1000	13.1970

1164.2	0.837439	1.2562	0.156	0.1557	1.8681	1.1005	13.2029
1164.4	0.837763	1.2566	0.156	0.1557	1.8681	1.1010	13.2088
1164.6	0.838085	1.2571	0.156	0.1557	1.8681	1.1015	13.2146
1164.8	0.838404	1.2576	0.156	0.1557	1.8681	1.1019	13.2203
1165	0.838721	1.2581	0.156	0.1557	1.8681	1.1024	13.2261
1165.2	0.839035	1.2586	0.156	0.1557	1.8681	1.1029	13.2317
1165.4	0.839348	1.2590	0.156	0.1557	1.8681	1.1034	13.2374
1165.6	0.839658	1.2595	0.156	0.1557	1.8681	1.1038	13.2430
1165.8	0.839966	1.2599	0.156	0.1557	1.8681	1.1043	13.2486
1166	0.840272	1.2604	0.156	0.1557	1.8681	1.1047	13.2541
1166.2	0.840576	1.2609	0.156	0.1557	1.8681	1.1052	13.2596
1166.4	0.840877	1.2613	0.156	0.1557	1.8681	1.1056	13.2650
1166.6	0.841177	1.2618	0.156	0.1557	1.8681	1.1061	13.2704
1166.8	0.841475	1.2622	0.156	0.1557	1.8681	1.1065	13.2758
1167	0.841772	1.2627	0.156	0.1557	1.8681	1.1070	13.2812
1167.2	0.842066	1.2631	0.156	0.1557	1.8681	1.1074	13.2865
1167.4	0.842358	1.2635	0.156	0.1557	1.8681	1.1079	13.2918
1167.6	0.842649	1.2640	0.156	0.1557	1.8681	1.1083	13.2970
1167.8	0.842938	1.2644	0.156	0.1557	1.8681	1.1087	13.3022
1168	0.843225	1.2648	0.156	0.1557	1.8681	1.1092	13.3074
1168.2	0.843511	1.2653	0.156	0.1557	1.8681	1.1096	13.3126
1168.4	0.843794	1.2657	0.156	0.1557	1.8681	1.1100	13.3177
1168.6	0.844077	1.2661	0.156	0.1557	1.8681	1.1104	13.3228
1168.8	0.844357	1.2665	0.156	0.1557	1.8681	1.1109	13.3279
1169	0.844636	1.2670	0.156	0.1557	1.8681	1.1113	13.3329
1169.2	0.844914	1.2674	0.156	0.1557	1.8681	1.1117	13.3379
1169.4	0.84519	1.2678	0.156	0.1557	1.8681	1.1121	13.3429
1169.6	0.845465	1.2682	0.156	0.1557	1.8681	1.1125	13.3478
1169.8	0.845738	1.2686	0.156	0.1557	1.8681	1.1129	13.3528
1170	0.846009	1.2690	0.156	0.1557	1.8681	1.1133	13.3577
1170.2	0.84628	1.2694	0.156	0.1557	1.8681	1.1137	13.3625
1170.4	0.846548	1.2698	0.156	0.1557	1.8681	1.1142	13.3674
1170.6	0.846816	1.2702	0.156	0.1557	1.8681	1.1146	13.3722
1170.8	0.847082	1.2706	0.156	0.1557	1.8681	1.1150	13.3770
1171	0.847347	1.2710	0.156	0.1557	1.8681	1.1153	13.3818
1171.2	0.84761	1.2714	0.156	0.1557	1.8681	1.1157	13.3866
1171.4	0.847873	1.2718	0.156	0.1557	1.8681	1.1161	13.3913
1171.6	0.848134	1.2722	0.156	0.1557	1.8681	1.1165	13.3960
1171.8	0.848393	1.2726	0.156	0.1557	1.8681	1.1169	13.4007
1172	0.848652	1.2730	0.156	0.1557	1.8681	1.1173	13.4053
1172.2	0.848909	1.2734	0.156	0.1557	1.8681	1.1177	13.4100
1172.4	0.849165	1.2737	0.156	0.1557	1.8681	1.1181	13.4146
1172.6	0.84942	1.2741	0.156	0.1557	1.8681	1.1185	13.4192
1172.8	0.849674	1.2745	0.156	0.1557	1.8681	1.1188	13.4238
1173	0.849926	1.2749	0.156	0.1557	1.8681	1.1192	13.4283
1173.2	0.850178	1.2753	0.156	0.1557	1.8681	1.1196	13.4329
1173.4	0.850428	1.2756	0.156	0.1557	1.8681	1.1200	13.4374

1173.6	0.850677	1.2760	0.156	0.1557	1.8681	1.1203	13.4419
1173.8	0.850925	1.2764	0.156	0.1557	1.8681	1.1207	13.4464
1174	0.851172	1.2768	0.156	0.1557	1.8681	1.1211	13.4508
1174.2	0.851418	1.2771	0.156	0.1557	1.8681	1.1215	13.4553
1174.4	0.851663	1.2775	0.156	0.1557	1.8681	1.1218	13.4597
1174.6	0.851907	1.2779	0.156	0.1557	1.8681	1.1222	13.4641
1174.8	0.85215	1.2782	0.156	0.1557	1.8681	1.1226	13.4685
1175	0.852392	1.2786	0.156	0.1557	1.8681	1.1229	13.4728
1175.2	0.852633	1.2789	0.156	0.1557	1.8681	1.1233	13.4772
1175.4	0.852873	1.2793	0.156	0.1557	1.8681	1.1236	13.4815
1175.6	0.853112	1.2797	0.156	0.1557	1.8681	1.1240	13.4858
1175.8	0.85335	1.2800	0.156	0.1557	1.8681	1.1244	13.4901
1176	0.853588	1.2804	0.156	0.1557	1.8681	1.1247	13.4944
1176.2	0.853824	1.2807	0.156	0.1557	1.8681	1.1251	13.4986
1176.4	0.854059	1.2811	0.156	0.1557	1.8681	1.1254	13.5029
1176.6	0.854293	1.2814	0.156	0.1557	1.8681	1.1258	13.5071
1176.8	0.854527	1.2818	0.156	0.1557	1.8681	1.1261	13.5113
1177	0.85476	1.2821	0.156	0.1557	1.8681	1.1265	13.5155
1177.2	0.854991	1.2825	0.156	0.1557	1.8681	1.1268	13.5197
1177.4	0.855222	1.2828	0.156	0.1557	1.8681	1.1272	13.5239
1177.6	0.855452	1.2832	0.156	0.1557	1.8681	1.1275	13.5280
1177.8	0.855681	1.2835	0.156	0.1557	1.8681	1.1279	13.5321
1178	0.85591	1.2839	0.156	0.1557	1.8681	1.1282	13.5363
1178.2	0.856137	1.2842	0.156	0.1557	1.8681	1.1285	13.5404
1178.4	0.856364	1.2845	0.156	0.1557	1.8681	1.1289	13.5445
1178.6	0.85659	1.2849	0.156	0.1557	1.8681	1.1292	13.5485
1178.8	0.856815	1.2852	0.156	0.1557	1.8681	1.1296	13.5526
1179	0.857039	1.2856	0.156	0.1557	1.8681	1.1299	13.5566
1179.2	0.857263	1.2859	0.156	0.1557	1.8681	1.1302	13.5607
1179.4	0.857486	1.2862	0.156	0.1557	1.8681	1.1306	13.5647
1179.6	0.857708	1.2866	0.156	0.1557	1.8681	1.1309	13.5687
1179.8	0.857929	1.2869	0.156	0.1557	1.8681	1.1312	13.5727
1180	0.858149	1.2872	0.156	0.1557	1.8681	1.1316	13.5767
1180.2	0.858369	1.2876	0.156	0.1557	1.8681	1.1319	13.5806
1180.4	0.858588	1.2879	0.156	0.1557	1.8681	1.1322	13.5846
1180.6	0.858807	1.2882	0.156	0.1557	1.8681	1.1325	13.5885
1180.8	0.859024	1.2885	0.156	0.1557	1.8681	1.1329	13.5924
1181	0.859241	1.2889	0.156	0.1557	1.8681	1.1332	13.5963
1181.2	0.859457	1.2892	0.156	0.1557	1.8681	1.1335	13.6002
1181.4	0.859673	1.2895	0.156	0.1557	1.8681	1.1338	13.6041
1181.6	0.859888	1.2898	0.156	0.1557	1.8681	1.1342	13.6080
1181.8	0.860102	1.2902	0.156	0.1557	1.8681	1.1345	13.6118
1182	0.860315	1.2905	0.156	0.1557	1.8681	1.1348	13.6157
1182.2	0.860528	1.2908	0.156	0.1557	1.8681	1.1351	13.6195
1182.4	0.86074	1.2911	0.156	0.1557	1.8681	1.1354	13.6234
1182.6	0.860951	1.2914	0.156	0.1557	1.8681	1.1358	13.6272
1182.8	0.861162	1.2917	0.156	0.1557	1.8681	1.1361	13.6310

1183	0.861372	1.2921	0.156	0.1557	1.8681	1.1364	13.6348
1183.2	0.861582	1.2924	0.156	0.1557	1.8681	1.1367	13.6385
1183.4	0.861791	1.2927	0.156	0.1557	1.8681	1.1370	13.6423
1183.6	0.861999	1.2930	0.156	0.1557	1.8681	1.1373	13.6461
1183.8	0.862207	1.2933	0.156	0.1557	1.8681	1.1376	13.6498
1184	0.862414	1.2936	0.156	0.1557	1.8681	1.1379	13.6535
1184.2	0.86262	1.2939	0.156	0.1557	1.8681	1.1383	13.6573
1184.4	0.862826	1.2942	0.156	0.1557	1.8681	1.1386	13.6610
1184.6	0.863031	1.2945	0.156	0.1557	1.8681	1.1389	13.6647
1184.8	0.863236	1.2949	0.156	0.1557	1.8681	1.1392	13.6684
1185	0.86344	1.2952	0.156	0.1557	1.8681	1.1395	13.6720
1185.2	0.863644	1.2955	0.156	0.1557	1.8681	1.1398	13.6757
1185.4	0.863847	1.2958	0.156	0.1557	1.8681	1.1401	13.6794
1185.6	0.864049	1.2961	0.156	0.1557	1.8681	1.1404	13.6830
1185.8	0.864251	1.2964	0.156	0.1557	1.8681	1.1407	13.6866
1186	0.864452	1.2967	0.156	0.1557	1.8681	1.1410	13.6903
1186.2	0.864653	1.2970	0.156	0.1557	1.8681	1.1413	13.6939
1186.4	0.864853	1.2973	0.156	0.1557	1.8681	1.1416	13.6975
1186.6	0.865052	1.2976	0.156	0.1557	1.8681	1.1419	13.7011
1186.8	0.865251	1.2979	0.156	0.1557	1.8681	1.1422	13.7047
1187	0.86545	1.2982	0.156	0.1557	1.8681	1.1425	13.7083
1187.2	0.865648	1.2985	0.156	0.1557	1.8681	1.1428	13.7118
1187.4	0.865845	1.2988	0.156	0.1557	1.8681	1.1431	13.7154
1187.6	0.866042	1.2991	0.156	0.1557	1.8681	1.1434	13.7189
1187.8	0.866238	1.2994	0.156	0.1557	1.8681	1.1437	13.7225
1188	0.866434	1.2997	0.156	0.1557	1.8681	1.1440	13.7260
1188.2	0.86663	1.2999	0.156	0.1557	1.8681	1.1443	13.7295
1188.4	0.866824	1.3002	0.156	0.1557	1.8681	1.1446	13.7330
1188.6	0.867019	1.3005	0.156	0.1557	1.8681	1.1449	13.7365
1188.8	0.867213	1.3008	0.156	0.1557	1.8681	1.1451	13.7400
1189	0.867406	1.3011	0.156	0.1557	1.8681	1.1454	13.7435
1189.2	0.867599	1.3014	0.156	0.1557	1.8681	1.1457	13.7470
1189.4	0.867791	1.3017	0.156	0.1557	1.8681	1.1460	13.7505
1189.6	0.867983	1.3020	0.156	0.1557	1.8681	1.1463	13.7539
1189.8	0.868175	1.3023	0.156	0.1557	1.8681	1.1466	13.7574
1190	0.868366	1.3025	0.156	0.1557	1.8681	1.1469	13.7608
1190.2	0.868556	1.3028	0.156	0.1557	1.8681	1.1472	13.7642
1190.4	0.868746	1.3031	0.156	0.1557	1.8681	1.1474	13.7677
1190.6	0.868936	1.3034	0.156	0.1557	1.8681	1.1477	13.7711
1190.8	0.869125	1.3037	0.156	0.1557	1.8681	1.1480	13.7745
1191	0.869313	1.3040	0.156	0.1557	1.8681	1.1483	13.7779
1191.2	0.869501	1.3043	0.156	0.1557	1.8681	1.1486	13.7813
1191.4	0.869689	1.3045	0.156	0.1557	1.8681	1.1489	13.7847
1191.6	0.869876	1.3048	0.156	0.1557	1.8681	1.1491	13.7880
1191.8	0.870063	1.3051	0.156	0.1557	1.8681	1.1494	13.7914
1192	0.87025	1.3054	0.156	0.1557	1.8681	1.1497	13.7948
1192.2	0.870436	1.3057	0.156	0.1557	1.8681	1.1500	13.7981

1192.4	0.870621	1.3059	0.156	0.1557	1.8681	1.1503	13.8015
1192.6	0.870806	1.3062	0.156	0.1557	1.8681	1.1505	13.8048
1192.8	0.870991	1.3065	0.156	0.1557	1.8681	1.1508	13.8081
1193	0.871175	1.3068	0.156	0.1557	1.8681	1.1511	13.8114
1193.2	0.871359	1.3070	0.156	0.1557	1.8681	1.1514	13.8147
1193.4	0.871542	1.3073	0.156	0.1557	1.8681	1.1516	13.8181
1193.6	0.871725	1.3076	0.156	0.1557	1.8681	1.1519	13.8214
1193.8	0.871908	1.3079	0.156	0.1557	1.8681	1.1522	13.8246
1194	0.87209	1.3081	0.156	0.1557	1.8681	1.1525	13.8279
1194.2	0.872272	1.3084	0.156	0.1557	1.8681	1.1527	13.8312
1194.4	0.872453	1.3087	0.156	0.1557	1.8681	1.1530	13.8345
1194.6	0.872634	1.3090	0.156	0.1557	1.8681	1.1533	13.8377
1194.8	0.872814	1.3092	0.156	0.1557	1.8681	1.1536	13.8410
1195	0.872995	1.3095	0.156	0.1557	1.8681	1.1538	13.8442
1195.2	0.873174	1.3098	0.156	0.1557	1.8681	1.1541	13.8475
1195.4	0.873354	1.3100	0.156	0.1557	1.8681	1.1544	13.8507
1195.6	0.873533	1.3103	0.156	0.1557	1.8681	1.1546	13.8539
1195.8	0.873711	1.3106	0.156	0.1557	1.8681	1.1549	13.8571
1196	0.873889	1.3108	0.156	0.1557	1.8681	1.1552	13.8603
1196.2	0.874067	1.3111	0.156	0.1557	1.8681	1.1554	13.8636
1196.4	0.874245	1.3114	0.156	0.1557	1.8681	1.1557	13.8668
1196.6	0.874422	1.3116	0.156	0.1557	1.8681	1.1560	13.8699
1196.8	0.874598	1.3119	0.156	0.1557	1.8681	1.1562	13.8731
1197	0.874775	1.3122	0.156	0.1557	1.8681	1.1565	13.8763
1197.2	0.874951	1.3124	0.156	0.1557	1.8681	1.1568	13.8795
1197.4	0.875126	1.3127	0.156	0.1557	1.8681	1.1570	13.8826
1197.6	0.875301	1.3130	0.156	0.1557	1.8681	1.1573	13.8858
1197.8	0.875476	1.3132	0.156	0.1557	1.8681	1.1575	13.8889
1198	0.875651	1.3135	0.156	0.1557	1.8681	1.1578	13.8921
1198.2	0.875825	1.3137	0.156	0.1557	1.8681	1.1581	13.8952
1198.4	0.875999	1.3140	0.156	0.1557	1.8681	1.1583	13.8984
1198.6	0.876172	1.3143	0.156	0.1557	1.8681	1.1586	13.9015
1198.8	0.876345	1.3145	0.156	0.1557	1.8681	1.1588	13.9046
1199	0.876518	1.3148	0.156	0.1557	1.8681	1.1591	13.9077
1199.2	0.87669	1.3150	0.156	0.1557	1.8681	1.1594	13.9108
1199.4	0.876862	1.3153	0.156	0.1557	1.8681	1.1596	13.9139
1199.6	0.877034	1.3156	0.156	0.1557	1.8681	1.1599	13.9170
1199.8	0.877206	1.3158	0.156	0.1557	1.8681	1.1601	13.9201
1200	0.877377	1.3161	0.156	0.1557	1.8681	1.1604	13.9232
1200.2	0.877547	1.3163	0.156	0.1557	1.8681	1.1606	13.9263
1200.4	0.877718	1.3166	0.156	0.1557	1.8681	1.1609	13.9293
1200.6	0.877888	1.3168	0.156	0.1557	1.8681	1.1612	13.9324
1200.8	0.878057	1.3171	0.156	0.1557	1.8681	1.1614	13.9355
1201	0.878227	1.3173	0.156	0.1557	1.8681	1.1617	13.9385
1201.2	0.878396	1.3176	0.156	0.1557	1.8681	1.1619	13.9415
1201.4	0.878565	1.3178	0.156	0.1557	1.8681	1.1622	13.9446
1201.6	0.878733	1.3181	0.156	0.1557	1.8681	1.1624	13.9476

1201.8	0.878901	1.3184	0.156	0.1557	1.8681	1.1627	13.9507
1202	0.879069	1.3186	0.156	0.1557	1.8681	1.1629	13.9537
1202.2	0.879236	1.3189	0.156	0.1557	1.8681	1.1632	13.9567
1202.4	0.879404	1.3191	0.156	0.1557	1.8681	1.1634	13.9597
1202.6	0.87957	1.3194	0.156	0.1557	1.8681	1.1637	13.9627
1202.8	0.879737	1.3196	0.156	0.1557	1.8681	1.1639	13.9657
1203	0.879903	1.3199	0.156	0.1557	1.8681	1.1642	13.9687
1203.2	0.880069	1.3201	0.156	0.1557	1.8681	1.1644	13.9717
1203.4	0.880235	1.3204	0.156	0.1557	1.8681	1.1647	13.9747
1203.6	0.8804	1.3206	0.156	0.1557	1.8681	1.1649	13.9777
1203.8	0.880565	1.3208	0.156	0.1557	1.8681	1.1652	13.9806
1204	0.88073	1.3211	0.156	0.1557	1.8681	1.1654	13.9836
1204.2	0.880894	1.3213	0.156	0.1557	1.8681	1.1657	13.9866
1204.4	0.881058	1.3216	0.156	0.1557	1.8681	1.1659	13.9895
1204.6	0.881222	1.3218	0.156	0.1557	1.8681	1.1662	13.9925
1204.8	0.881386	1.3221	0.156	0.1557	1.8681	1.1664	13.9954
1205	0.881549	1.3223	0.156	0.1557	1.8681	1.1667	13.9984
1205.2	0.881712	1.3226	0.156	0.1557	1.8681	1.1669	14.0013
1205.4	0.881875	1.3228	0.156	0.1557	1.8681	1.1671	14.0042
1205.6	0.882037	1.3231	0.156	0.1557	1.8681	1.1674	14.0071
1205.8	0.882199	1.3233	0.156	0.1557	1.8681	1.1676	14.0101
1206	0.882361	1.3235	0.156	0.1557	1.8681	1.1679	14.0130
1206.2	0.882522	1.3238	0.156	0.1557	1.8681	1.1681	14.0159
1206.4	0.882684	1.3240	0.156	0.1557	1.8681	1.1684	14.0188
1206.6	0.882845	1.3243	0.156	0.1557	1.8681	1.1686	14.0217
1206.8	0.883005	1.3245	0.156	0.1557	1.8681	1.1688	14.0246
1207	0.883166	1.3247	0.156	0.1557	1.8681	1.1691	14.0275
1207.2	0.883326	1.3250	0.156	0.1557	1.8681	1.1693	14.0304
1207.4	0.883486	1.3252	0.156	0.1557	1.8681	1.1696	14.0332
1207.6	0.883645	1.3255	0.156	0.1557	1.8681	1.1698	14.0361
1207.8	0.883805	1.3257	0.156	0.1557	1.8681	1.1700	14.0390
1208	0.883964	1.3259	0.156	0.1557	1.8681	1.1703	14.0419
1208.2	0.884123	1.3262	0.156	0.1557	1.8681	1.1705	14.0447
1208.4	0.884281	1.3264	0.156	0.1557	1.8681	1.1708	14.0476
1208.6	0.884439	1.3267	0.156	0.1557	1.8681	1.1710	14.0504
1208.8	0.884597	1.3269	0.156	0.1557	1.8681	1.1712	14.0533
1209	0.884755	1.3271	0.156	0.1557	1.8681	1.1715	14.0561
1209.2	0.884913	1.3274	0.156	0.1557	1.8681	1.1717	14.0590
1209.4	0.88507	1.3276	0.156	0.1557	1.8681	1.1719	14.0618
1209.6	0.885227	1.3278	0.156	0.1557	1.8681	1.1722	14.0646
1209.8	0.885383	1.3281	0.156	0.1557	1.8681	1.1724	14.0674
1210	0.88554	1.3283	0.156	0.1557	1.8681	1.1726	14.0703
1210.2	0.885696	1.3285	0.156	0.1557	1.8681	1.1729	14.0731
1210.4	0.885852	1.3288	0.156	0.1557	1.8681	1.1731	14.0759
1210.6	0.886008	1.3290	0.156	0.1557	1.8681	1.1733	14.0787
1210.8	0.886163	1.3292	0.156	0.1557	1.8681	1.1736	14.0815
1211	0.886318	1.3295	0.156	0.1557	1.8681	1.1738	14.0843

1211.2	0.886473	1.3297	0.156	0.1557	1.8681	1.1740	14.0871
1211.4	0.886628	1.3299	0.156	0.1557	1.8681	1.1743	14.0899
1211.6	0.886783	1.3302	0.156	0.1557	1.8681	1.1745	14.0926
1211.8	0.886937	1.3304	0.156	0.1557	1.8681	1.1747	14.0954
1212	0.887091	1.3306	0.156	0.1557	1.8681	1.1750	14.0982
1212.2	0.887245	1.3309	0.156	0.1557	1.8681	1.1752	14.1010
1212.4	0.887398	1.3311	0.156	0.1557	1.8681	1.1754	14.1037
1212.6	0.887551	1.3313	0.156	0.1557	1.8681	1.1757	14.1065
1212.8	0.887704	1.3316	0.156	0.1557	1.8681	1.1759	14.1092
1213	0.887857	1.3318	0.156	0.1557	1.8681	1.1761	14.1120
1213.2	0.88801	1.3320	0.156	0.1557	1.8681	1.1763	14.1147
1213.4	0.888162	1.3322	0.156	0.1557	1.8681	1.1766	14.1175
1213.6	0.888314	1.3325	0.156	0.1557	1.8681	1.1768	14.1202
1213.8	0.888466	1.3327	0.156	0.1557	1.8681	1.1770	14.1230
1214	0.888618	1.3329	0.156	0.1557	1.8681	1.1773	14.1257
1214.2	0.888769	1.3332	0.156	0.1557	1.8681	1.1775	14.1284
1214.4	0.88892	1.3334	0.156	0.1557	1.8681	1.1777	14.1311
1214.6	0.889071	1.3336	0.156	0.1557	1.8681	1.1779	14.1339
1214.8	0.889222	1.3338	0.156	0.1557	1.8681	1.1782	14.1366
1215	0.889372	1.3341	0.156	0.1557	1.8681	1.1784	14.1393
1215.2	0.889522	1.3343	0.156	0.1557	1.8681	1.1786	14.1420
1215.4	0.889673	1.3345	0.156	0.1557	1.8681	1.1788	14.1447
1215.6	0.889822	1.3347	0.156	0.1557	1.8681	1.1791	14.1474
1215.8	0.889972	1.3350	0.156	0.1557	1.8681	1.1793	14.1501
1216	0.890121	1.3352	0.156	0.1557	1.8681	1.1795	14.1528
1216.2	0.89027	1.3354	0.156	0.1557	1.8681	1.1797	14.1555
1216.4	0.890419	1.3356	0.156	0.1557	1.8681	1.1800	14.1582
1216.6	0.890568	1.3359	0.156	0.1557	1.8681	1.1802	14.1608
1216.8	0.890717	1.3361	0.156	0.1557	1.8681	1.1804	14.1635
1217	0.890865	1.3363	0.156	0.1557	1.8681	1.1806	14.1662
1217.2	0.891013	1.3365	0.156	0.1557	1.8681	1.1808	14.1688
1217.4	0.891161	1.3367	0.156	0.1557	1.8681	1.1811	14.1715
1217.6	0.891308	1.3370	0.156	0.1557	1.8681	1.1813	14.1742
1217.8	0.891456	1.3372	0.156	0.1557	1.8681	1.1815	14.1768
1218	0.891603	1.3374	0.156	0.1557	1.8681	1.1817	14.1795
1218.2	0.89175	1.3376	0.156	0.1557	1.8681	1.1820	14.1821
1218.4	0.891897	1.3378	0.156	0.1557	1.8681	1.1822	14.1848
1218.6	0.892044	1.3381	0.156	0.1557	1.8681	1.1824	14.1874
1218.8	0.89219	1.3383	0.156	0.1557	1.8681	1.1826	14.1900
1219	0.892336	1.3385	0.156	0.1557	1.8681	1.1828	14.1927
1219.2	0.892482	1.3387	0.156	0.1557	1.8681	1.1831	14.1953
1219.4	0.892628	1.3389	0.156	0.1557	1.8681	1.1833	14.1979
1219.6	0.892773	1.3392	0.156	0.1557	1.8681	1.1835	14.2006
1219.8	0.892919	1.3394	0.156	0.1557	1.8681	1.1837	14.2032
1220	0.893064	1.3396	0.156	0.1557	1.8681	1.1839	14.2058
1220.2	0.893209	1.3398	0.156	0.1557	1.8681	1.1841	14.2084
1220.4	0.893354	1.3400	0.156	0.1557	1.8681	1.1844	14.2110

1220.6	0.893498	1.3402	0.156	0.1557	1.8681	1.1846	14.2136
1220.8	0.893643	1.3405	0.156	0.1557	1.8681	1.1848	14.2162
1221	0.893787	1.3407	0.156	0.1557	1.8681	1.1850	14.2188
1221.2	0.893931	1.3409	0.156	0.1557	1.8681	1.1852	14.2214
1221.4	0.894075	1.3411	0.156	0.1557	1.8681	1.1854	14.2240
1221.6	0.894218	1.3413	0.156	0.1557	1.8681	1.1857	14.2266
1221.8	0.894362	1.3415	0.156	0.1557	1.8681	1.1859	14.2292
1222	0.894505	1.3418	0.156	0.1557	1.8681	1.1861	14.2317
1222.2	0.894648	1.3420	0.156	0.1557	1.8681	1.1863	14.2343
1222.4	0.894791	1.3422	0.156	0.1557	1.8681	1.1865	14.2369
1222.6	0.894933	1.3424	0.156	0.1557	1.8681	1.1867	14.2395
1222.8	0.895076	1.3426	0.156	0.1557	1.8681	1.1869	14.2420
1223	0.895218	1.3428	0.156	0.1557	1.8681	1.1872	14.2446
1223.2	0.89536	1.3430	0.156	0.1557	1.8681	1.1874	14.2471
1223.4	0.895502	1.3433	0.156	0.1557	1.8681	1.1876	14.2497
1223.6	0.895644	1.3435	0.156	0.1557	1.8681	1.1878	14.2523
1223.8	0.895785	1.3437	0.156	0.1557	1.8681	1.1880	14.2548
1224	0.895926	1.3439	0.156	0.1557	1.8681	1.1882	14.2573
1224.2	0.896068	1.3441	0.156	0.1557	1.8681	1.1884	14.2599
1224.4	0.896208	1.3443	0.156	0.1557	1.8681	1.1886	14.2624
1224.6	0.896349	1.3445	0.156	0.1557	1.8681	1.1889	14.2650
1224.8	0.89649	1.3447	0.156	0.1557	1.8681	1.1891	14.2675
1225	0.89663	1.3449	0.156	0.1557	1.8681	1.1893	14.2700
1225.2	0.89677	1.3452	0.156	0.1557	1.8681	1.1895	14.2726
1225.4	0.896911	1.3454	0.156	0.1557	1.8681	1.1897	14.2751
1225.6	0.89705	1.3456	0.156	0.1557	1.8681	1.1899	14.2776
1225.8	0.89719	1.3458	0.156	0.1557	1.8681	1.1901	14.2801
1226	0.89733	1.3460	0.156	0.1557	1.8681	1.1903	14.2826
1226.2	0.897469	1.3462	0.156	0.1557	1.8681	1.1905	14.2851
1226.4	0.897608	1.3464	0.156	0.1557	1.8681	1.1907	14.2876
1226.6	0.897747	1.3466	0.156	0.1557	1.8681	1.1909	14.2901
1226.8	0.897886	1.3468	0.156	0.1557	1.8681	1.1912	14.2926
1227	0.898024	1.3470	0.156	0.1557	1.8681	1.1914	14.2951
1227.2	0.898163	1.3472	0.156	0.1557	1.8681	1.1916	14.2976
1227.4	0.898301	1.3475	0.156	0.1557	1.8681	1.1918	14.3001
1227.6	0.898439	1.3477	0.156	0.1557	1.8681	1.1920	14.3026
1227.8	0.898577	1.3479	0.156	0.1557	1.8681	1.1922	14.3051
1228	0.898715	1.3481	0.156	0.1557	1.8681	1.1924	14.3076
1228.2	0.898853	1.3483	0.156	0.1557	1.8681	1.1926	14.3101
1228.4	0.89899	1.3485	0.156	0.1557	1.8681	1.1928	14.3125
1228.6	0.899127	1.3487	0.156	0.1557	1.8681	1.1930	14.3150
1228.8	0.899264	1.3489	0.156	0.1557	1.8681	1.1932	14.3175
1229	0.899401	1.3491	0.156	0.1557	1.8681	1.1934	14.3199
1229.2	0.899538	1.3493	0.156	0.1557	1.8681	1.1936	14.3224
1229.4	0.899675	1.3495	0.156	0.1557	1.8681	1.1938	14.3249
1229.6	0.899811	1.3497	0.156	0.1557	1.8681	1.1940	14.3273
1229.8	0.899947	1.3499	0.156	0.1557	1.8681	1.1942	14.3298

1230	0.900083	1.3501	0.156	0.1557	1.8681	1.1945	14.3322
1230.2	0.900219	1.3503	0.156	0.1557	1.8681	1.1947	14.3347
1230.4	0.900355	1.3505	0.156	0.1557	1.8681	1.1949	14.3371
1230.6	0.900491	1.3507	0.156	0.1557	1.8681	1.1951	14.3396
1230.8	0.900626	1.3509	0.156	0.1557	1.8681	1.1953	14.3420
1231	0.900761	1.3511	0.156	0.1557	1.8681	1.1955	14.3444
1231.2	0.900897	1.3513	0.156	0.1557	1.8681	1.1957	14.3469
1231.4	0.901032	1.3515	0.156	0.1557	1.8681	1.1959	14.3493
1231.6	0.901166	1.3517	0.156	0.1557	1.8681	1.1961	14.3517
1231.8	0.901301	1.3520	0.156	0.1557	1.8681	1.1963	14.3541
1232	0.901435	1.3522	0.156	0.1557	1.8681	1.1965	14.3566
1232.2	0.90157	1.3524	0.156	0.1557	1.8681	1.1967	14.3590
1232.4	0.901704	1.3526	0.156	0.1557	1.8681	1.1969	14.3614
1232.6	0.901838	1.3528	0.156	0.1557	1.8681	1.1971	14.3638
1232.8	0.901972	1.3530	0.156	0.1557	1.8681	1.1973	14.3662
1233	0.902105	1.3532	0.156	0.1557	1.8681	1.1975	14.3686
1233.2	0.902239	1.3534	0.156	0.1557	1.8681	1.1977	14.3710
1233.4	0.902372	1.3536	0.156	0.1557	1.8681	1.1979	14.3734
1233.6	0.902506	1.3538	0.156	0.1557	1.8681	1.1981	14.3758
1233.8	0.902639	1.3540	0.156	0.1557	1.8681	1.1983	14.3782
1234	0.902772	1.3542	0.156	0.1557	1.8681	1.1985	14.3806
1234.2	0.902904	1.3544	0.156	0.1557	1.8681	1.1987	14.3830
1234.4	0.903037	1.3546	0.156	0.1557	1.8681	1.1989	14.3854
1234.6	0.90317	1.3548	0.156	0.1557	1.8681	1.1991	14.3878
1234.8	0.903302	1.3550	0.156	0.1557	1.8681	1.1993	14.3902
1235	0.903434	1.3552	0.156	0.1557	1.8681	1.1995	14.3926
1235.2	0.903566	1.3553	0.156	0.1557	1.8681	1.1997	14.3949
1235.4	0.903698	1.3555	0.156	0.1557	1.8681	1.1999	14.3973
1235.6	0.90383	1.3557	0.156	0.1557	1.8681	1.2001	14.3997
1235.8	0.903961	1.3559	0.156	0.1557	1.8681	1.2003	14.4021
1236	0.904093	1.3561	0.156	0.1557	1.8681	1.2005	14.4044
1236.2	0.904224	1.3563	0.156	0.1557	1.8681	1.2007	14.4068
1236.4	0.904355	1.3565	0.156	0.1557	1.8681	1.2009	14.4092
1236.6	0.904486	1.3567	0.156	0.1557	1.8681	1.2011	14.4115
1236.8	0.904617	1.3569	0.156	0.1557	1.8681	1.2013	14.4139
1237	0.904748	1.3571	0.156	0.1557	1.8681	1.2015	14.4162
1237.2	0.904878	1.3573	0.156	0.1557	1.8681	1.2016	14.4186
1237.4	0.905009	1.3575	0.156	0.1557	1.8681	1.2018	14.4209
1237.6	0.905139	1.3577	0.156	0.1557	1.8681	1.2020	14.4233
1237.8	0.905269	1.3579	0.156	0.1557	1.8681	1.2022	14.4256
1238	0.905399	1.3581	0.156	0.1557	1.8681	1.2024	14.4280
1238.2	0.905529	1.3583	0.156	0.1557	1.8681	1.2026	14.4303
1238.4	0.905658	1.3585	0.156	0.1557	1.8681	1.2028	14.4326
1238.6	0.905788	1.3587	0.156	0.1557	1.8681	1.2030	14.4350
1238.8	0.905917	1.3589	0.156	0.1557	1.8681	1.2032	14.4373
1239	0.906047	1.3591	0.156	0.1557	1.8681	1.2034	14.4396
1239.2	0.906176	1.3593	0.156	0.1557	1.8681	1.2036	14.4419

1239.4	0.906305	1.3595	0.156	0.1557	1.8681	1.2038	14.4443
1239.6	0.906434	1.3597	0.156	0.1557	1.8681	1.2040	14.4466
1239.8	0.906562	1.3598	0.156	0.1557	1.8681	1.2042	14.4489
1240	0.906691	1.3600	0.156	0.1557	1.8681	1.2044	14.4512
1240.2	0.906819	1.3602	0.156	0.1557	1.8681	1.2046	14.4535
1240.4	0.906948	1.3604	0.156	0.1557	1.8681	1.2048	14.4558
1240.6	0.907076	1.3606	0.156	0.1557	1.8681	1.2049	14.4582
1240.8	0.907204	1.3608	0.156	0.1557	1.8681	1.2051	14.4605
1241	0.907332	1.3610	0.156	0.1557	1.8681	1.2053	14.4628
1241.2	0.90746	1.3612	0.156	0.1557	1.8681	1.2055	14.4651
1241.4	0.907587	1.3614	0.156	0.1557	1.8681	1.2057	14.4674
1241.6	0.907715	1.3616	0.156	0.1557	1.8681	1.2059	14.4697
1241.8	0.907842	1.3618	0.156	0.1557	1.8681	1.2061	14.4720
1242	0.907969	1.3620	0.156	0.1557	1.8681	1.2063	14.4742
1242.2	0.908096	1.3621	0.156	0.1557	1.8681	1.2065	14.4765
1242.4	0.908223	1.3623	0.156	0.1557	1.8681	1.2067	14.4788
1242.6	0.90835	1.3625	0.156	0.1557	1.8681	1.2069	14.4811
1242.8	0.908477	1.3627	0.156	0.1557	1.8681	1.2070	14.4834
1243	0.908604	1.3629	0.156	0.1557	1.8681	1.2072	14.4857
1243.2	0.90873	1.3631	0.156	0.1557	1.8681	1.2074	14.4879
1243.4	0.908856	1.3633	0.156	0.1557	1.8681	1.2076	14.4902
1243.6	0.908982	1.3635	0.156	0.1557	1.8681	1.2078	14.4925
1243.8	0.909109	1.3637	0.156	0.1557	1.8681	1.2080	14.4948
1244	0.909234	1.3639	0.156	0.1557	1.8681	1.2082	14.4970
1244.2	0.90936	1.3640	0.156	0.1557	1.8681	1.2084	14.4993
1244.4	0.909486	1.3642	0.156	0.1557	1.8681	1.2086	14.5016
1244.6	0.909611	1.3644	0.156	0.1557	1.8681	1.2087	14.5038
1244.8	0.909737	1.3646	0.156	0.1557	1.8681	1.2089	14.5061
1245	0.909862	1.3648	0.156	0.1557	1.8681	1.2091	14.5083
1245.2	0.909987	1.3650	0.156	0.1557	1.8681	1.2093	14.5106
1245.4	0.910112	1.3652	0.156	0.1557	1.8681	1.2095	14.5128
1245.6	0.910237	1.3654	0.156	0.1557	1.8681	1.2097	14.5151
1245.8	0.910362	1.3655	0.156	0.1557	1.8681	1.2099	14.5173
1246	0.910487	1.3657	0.156	0.1557	1.8681	1.2101	14.5196
1246.2	0.910611	1.3659	0.156	0.1557	1.8681	1.2102	14.5218
1246.4	0.910736	1.3661	0.156	0.1557	1.8681	1.2104	14.5241
1246.6	0.91086	1.3663	0.156	0.1557	1.8681	1.2106	14.5263
1246.8	0.910984	1.3665	0.156	0.1557	1.8681	1.2108	14.5285
1247	0.911108	1.3667	0.156	0.1557	1.8681	1.2110	14.5308
1247.2	0.911232	1.3668	0.156	0.1557	1.8681	1.2112	14.5330
1247.4	0.911356	1.3670	0.156	0.1557	1.8681	1.2114	14.5352
1247.6	0.911479	1.3672	0.156	0.1557	1.8681	1.2115	14.5375
1247.8	0.911603	1.3674	0.156	0.1557	1.8681	1.2117	14.5397
1248	0.911726	1.3676	0.156	0.1557	1.8681	1.2119	14.5419
1248.2	0.91185	1.3678	0.156	0.1557	1.8681	1.2121	14.5441
1248.4	0.911973	1.3680	0.156	0.1557	1.8681	1.2123	14.5463
1248.6	0.912096	1.3681	0.156	0.1557	1.8681	1.2125	14.5486

1248.8	0.912219	1.3683	0.156	0.1557	1.8681	1.2127	14.5508
1249	0.912342	1.3685	0.156	0.1557	1.8681	1.2128	14.5530
1249.2	0.912464	1.3687	0.156	0.1557	1.8681	1.2130	14.5552
1249.4	0.912587	1.3689	0.156	0.1557	1.8681	1.2132	14.5574
1249.6	0.912709	1.3691	0.156	0.1557	1.8681	1.2134	14.5596
1249.8	0.912832	1.3692	0.156	0.1557	1.8681	1.2136	14.5618
1250	0.912954	1.3694	0.156	0.1557	1.8681	1.2138	14.5640
1250.2	0.913076	1.3696	0.156	0.1557	1.8681	1.2139	14.5662
1250.4	0.913198	1.3698	0.156	0.1557	1.8681	1.2141	14.5684
1250.6	0.91332	1.3700	0.156	0.1557	1.8681	1.2143	14.5706
1250.8	0.913442	1.3702	0.156	0.1557	1.8681	1.2145	14.5728
1251	0.913563	1.3703	0.156	0.1557	1.8681	1.2147	14.5750
1251.2	0.913685	1.3705	0.156	0.1557	1.8681	1.2149	14.5772
1251.4	0.913806	1.3707	0.156	0.1557	1.8681	1.2150	14.5794
1251.6	0.913928	1.3709	0.156	0.1557	1.8681	1.2152	14.5816
1251.8	0.914049	1.3711	0.156	0.1557	1.8681	1.2154	14.5837
1252	0.91417	1.3713	0.156	0.1557	1.8681	1.2156	14.5859
1252.2	0.914291	1.3714	0.156	0.1557	1.8681	1.2158	14.5881
1252.4	0.914412	1.3716	0.156	0.1557	1.8681	1.2159	14.5903
1252.6	0.914533	1.3718	0.156	0.1557	1.8681	1.2161	14.5924
1252.8	0.914653	1.3720	0.156	0.1557	1.8681	1.2163	14.5946
1253	0.914774	1.3722	0.156	0.1557	1.8681	1.2165	14.5968
1253.2	0.914894	1.3723	0.156	0.1557	1.8681	1.2167	14.5990
1253.4	0.915014	1.3725	0.156	0.1557	1.8681	1.2169	14.6011
1253.6	0.915135	1.3727	0.156	0.1557	1.8681	1.2170	14.6033
1253.8	0.915255	1.3729	0.156	0.1557	1.8681	1.2172	14.6054
1254	0.915375	1.3731	0.156	0.1557	1.8681	1.2174	14.6076
1254.2	0.915494	1.3732	0.156	0.1557	1.8681	1.2176	14.6098
1254.4	0.915614	1.3734	0.156	0.1557	1.8681	1.2177	14.6119
1254.6	0.915734	1.3736	0.156	0.1557	1.8681	1.2179	14.6141
1254.8	0.915853	1.3738	0.156	0.1557	1.8681	1.2181	14.6162
1255	0.915973	1.3740	0.156	0.1557	1.8681	1.2183	14.6184
1255.2	0.916092	1.3741	0.156	0.1557	1.8681	1.2185	14.6205
1255.4	0.916211	1.3743	0.156	0.1557	1.8681	1.2186	14.6227
1255.6	0.91633	1.3745	0.156	0.1557	1.8681	1.2188	14.6248
1255.8	0.916449	1.3747	0.156	0.1557	1.8681	1.2190	14.6270
1256	0.916568	1.3749	0.156	0.1557	1.8681	1.2192	14.6291
1256.2	0.916687	1.3750	0.156	0.1557	1.8681	1.2194	14.6312
1256.4	0.916805	1.3752	0.156	0.1557	1.8681	1.2195	14.6334
1256.6	0.916924	1.3754	0.156	0.1557	1.8681	1.2197	14.6355
1256.8	0.917042	1.3756	0.156	0.1557	1.8681	1.2199	14.6376
1257	0.917161	1.3757	0.156	0.1557	1.8681	1.2201	14.6398
1257.2	0.917279	1.3759	0.156	0.1557	1.8681	1.2202	14.6419
1257.4	0.917397	1.3761	0.156	0.1557	1.8681	1.2204	14.6440
1257.6	0.917515	1.3763	0.156	0.1557	1.8681	1.2206	14.6462
1257.8	0.917633	1.3764	0.156	0.1557	1.8681	1.2208	14.6483
1258	0.917751	1.3766	0.156	0.1557	1.8681	1.2210	14.6504

1258.2	0.917869	1.3768	0.156	0.1557	1.8681	1.2211	14.6525
1258.4	0.917986	1.3770	0.156	0.1557	1.8681	1.2213	14.6546
1258.6	0.918104	1.3772	0.156	0.1557	1.8681	1.2215	14.6568
1258.8	0.918221	1.3773	0.156	0.1557	1.8681	1.2217	14.6589
1259	0.918338	1.3775	0.156	0.1557	1.8681	1.2218	14.6610
1259.2	0.918455	1.3777	0.156	0.1557	1.8681	1.2220	14.6631
1259.4	0.918573	1.3779	0.156	0.1557	1.8681	1.2222	14.6652
1259.6	0.91869	1.3780	0.156	0.1557	1.8681	1.2224	14.6673
1259.8	0.918806	1.3782	0.156	0.1557	1.8681	1.2225	14.6694
1260	0.918923	1.3784	0.156	0.1557	1.8681	1.2227	14.6715
1260.2	0.91904	1.3786	0.156	0.1557	1.8681	1.2229	14.6736
1260.4	0.919156	1.3787	0.156	0.1557	1.8681	1.2231	14.6757
1260.6	0.919273	1.3789	0.156	0.1557	1.8681	1.2232	14.6778
1260.8	0.919389	1.3791	0.156	0.1557	1.8681	1.2234	14.6799
1261	0.919506	1.3793	0.156	0.1557	1.8681	1.2236	14.6820
1261.2	0.919622	1.3794	0.156	0.1557	1.8681	1.2238	14.6841
1261.4	0.919738	1.3796	0.156	0.1557	1.8681	1.2239	14.6862
1261.6	0.919854	1.3798	0.156	0.1557	1.8681	1.2241	14.6883
1261.8	0.91997	1.3800	0.156	0.1557	1.8681	1.2243	14.6904
1262	0.920085	1.3801	0.156	0.1557	1.8681	1.2245	14.6924
1262.2	0.920201	1.3803	0.156	0.1557	1.8681	1.2246	14.6945
1262.4	0.920317	1.3805	0.156	0.1557	1.8681	1.2248	14.6966
1262.6	0.920432	1.3806	0.156	0.1557	1.8681	1.2250	14.6987
1262.8	0.920547	1.3808	0.156	0.1557	1.8681	1.2251	14.7008
1263	0.920663	1.3810	0.156	0.1557	1.8681	1.2253	14.7028
1263.2	0.920778	1.3812	0.156	0.1557	1.8681	1.2255	14.7049
1263.4	0.920893	1.3813	0.156	0.1557	1.8681	1.2257	14.7070
1263.6	0.921008	1.3815	0.156	0.1557	1.8681	1.2258	14.7091
1263.8	0.921123	1.3817	0.156	0.1557	1.8681	1.2260	14.7111
1264	0.921238	1.3819	0.156	0.1557	1.8681	1.2262	14.7132
1264.2	0.921352	1.3820	0.156	0.1557	1.8681	1.2264	14.7153
1264.4	0.921467	1.3822	0.156	0.1557	1.8681	1.2265	14.7173
1264.6	0.921581	1.3824	0.156	0.1557	1.8681	1.2267	14.7194
1264.8	0.921696	1.3825	0.156	0.1557	1.8681	1.2269	14.7214
1265	0.92181	1.3827	0.156	0.1557	1.8681	1.2270	14.7235
1265.2	0.921924	1.3829	0.156	0.1557	1.8681	1.2272	14.7256
1265.4	0.922039	1.3831	0.156	0.1557	1.8681	1.2274	14.7276
1265.6	0.922153	1.3832	0.156	0.1557	1.8681	1.2276	14.7297
1265.8	0.922266	1.3834	0.156	0.1557	1.8681	1.2277	14.7317
1266	0.92238	1.3836	0.156	0.1557	1.8681	1.2279	14.7338
1266.2	0.922494	1.3837	0.156	0.1557	1.8681	1.2281	14.7358
1266.4	0.922608	1.3839	0.156	0.1557	1.8681	1.2282	14.7379
1266.6	0.922721	1.3841	0.156	0.1557	1.8681	1.2284	14.7399
1266.8	0.922835	1.3843	0.156	0.1557	1.8681	1.2286	14.7419
1267	0.922948	1.3844	0.156	0.1557	1.8681	1.2288	14.7440
1267.2	0.923061	1.3846	0.156	0.1557	1.8681	1.2289	14.7460
1267.4	0.923175	1.3848	0.156	0.1557	1.8681	1.2291	14.7481

1267.6	0.923288	1.3849	0.156	0.1557	1.8681	1.2293	14.7501
1267.8	0.923401	1.3851	0.156	0.1557	1.8681	1.2294	14.7521
1268	0.923514	1.3853	0.156	0.1557	1.8681	1.2296	14.7542
1268.2	0.923626	1.3854	0.156	0.1557	1.8681	1.2298	14.7562
1268.4	0.923739	1.3856	0.156	0.1557	1.8681	1.2299	14.7582
1268.6	0.923852	1.3858	0.156	0.1557	1.8681	1.2301	14.7603
1268.8	0.923964	1.3859	0.156	0.1557	1.8681	1.2303	14.7623
1269	0.924077	1.3861	0.156	0.1557	1.8681	1.2304	14.7643
1269.2	0.924189	1.3863	0.156	0.1557	1.8681	1.2306	14.7663
1269.4	0.924301	1.3865	0.156	0.1557	1.8681	1.2308	14.7684
1269.6	0.924414	1.3866	0.156	0.1557	1.8681	1.2309	14.7704
1269.8	0.924526	1.3868	0.156	0.1557	1.8681	1.2311	14.7724
1270	0.924638	1.3870	0.156	0.1557	1.8681	1.2313	14.7744
1270.2	0.92475	1.3871	0.156	0.1557	1.8681	1.2315	14.7764
1270.4	0.924861	1.3873	0.156	0.1557	1.8681	1.2316	14.7784
1270.6	0.924973	1.3875	0.156	0.1557	1.8681	1.2318	14.7805
1270.8	0.925085	1.3876	0.156	0.1557	1.8681	1.2320	14.7825
1271	0.925196	1.3878	0.156	0.1557	1.8681	1.2321	14.7845
1271.2	0.925308	1.3880	0.156	0.1557	1.8681	1.2323	14.7865
1271.4	0.925419	1.3881	0.156	0.1557	1.8681	1.2325	14.7885
1271.6	0.925531	1.3883	0.156	0.1557	1.8681	1.2326	14.7905
1271.8	0.925642	1.3885	0.156	0.1557	1.8681	1.2328	14.7925
1272	0.925753	1.3886	0.156	0.1557	1.8681	1.2330	14.7945
1272.2	0.925864	1.3888	0.156	0.1557	1.8681	1.2331	14.7965
1272.4	0.925975	1.3890	0.156	0.1557	1.8681	1.2333	14.7985
1272.6	0.926086	1.3891	0.156	0.1557	1.8681	1.2335	14.8005
1272.8	0.926197	1.3893	0.156	0.1557	1.8681	1.2336	14.8025
1273	0.926307	1.3895	0.156	0.1557	1.8681	1.2338	14.8045
1273.2	0.926418	1.3896	0.156	0.1557	1.8681	1.2340	14.8065
1273.4	0.926528	1.3898	0.156	0.1557	1.8681	1.2341	14.8085
1273.6	0.926639	1.3900	0.156	0.1557	1.8681	1.2343	14.8104
1273.8	0.926749	1.3901	0.156	0.1557	1.8681	1.2345	14.8124
1274	0.926859	1.3903	0.156	0.1557	1.8681	1.2346	14.8144
1274.2	0.92697	1.3905	0.156	0.1557	1.8681	1.2348	14.8164
1274.4	0.92708	1.3906	0.156	0.1557	1.8681	1.2349	14.8184
1274.6	0.92719	1.3908	0.156	0.1557	1.8681	1.2351	14.8204
1274.8	0.9273	1.3909	0.156	0.1557	1.8681	1.2353	14.8223
1275	0.927409	1.3911	0.156	0.1557	1.8681	1.2354	14.8243
1275.2	0.927519	1.3913	0.156	0.1557	1.8681	1.2356	14.8263
1275.4	0.927629	1.3914	0.156	0.1557	1.8681	1.2358	14.8283
1275.6	0.927738	1.3916	0.156	0.1557	1.8681	1.2359	14.8303
1275.8	0.927848	1.3918	0.156	0.1557	1.8681	1.2361	14.8322
1276	0.927957	1.3919	0.156	0.1557	1.8681	1.2363	14.8342
1276.2	0.928067	1.3921	0.156	0.1557	1.8681	1.2364	14.8362
1276.4	0.928176	1.3923	0.156	0.1557	1.8681	1.2366	14.8381
1276.6	0.928285	1.3924	0.156	0.1557	1.8681	1.2368	14.8401
1276.8	0.928394	1.3926	0.156	0.1557	1.8681	1.2369	14.8421

1277	0.928503	1.3928	0.156	0.1557	1.8681	1.2371	14.8440
1277.2	0.928612	1.3929	0.156	0.1557	1.8681	1.2372	14.8460
1277.4	0.928721	1.3931	0.156	0.1557	1.8681	1.2374	14.8479
1277.6	0.92883	1.3932	0.156	0.1557	1.8681	1.2376	14.8499
1277.8	0.928939	1.3934	0.156	0.1557	1.8681	1.2377	14.8519
1278	0.929047	1.3936	0.156	0.1557	1.8681	1.2379	14.8538
1278.2	0.929156	1.3937	0.156	0.1557	1.8681	1.2381	14.8558
1278.4	0.929264	1.3939	0.156	0.1557	1.8681	1.2382	14.8577
1278.6	0.929372	1.3941	0.156	0.1557	1.8681	1.2384	14.8597
1278.8	0.929481	1.3942	0.156	0.1557	1.8681	1.2385	14.8616
1279	0.929589	1.3944	0.156	0.1557	1.8681	1.2387	14.8636
1279.2	0.929697	1.3945	0.156	0.1557	1.8681	1.2389	14.8655
1279.4	0.929805	1.3947	0.156	0.1557	1.8681	1.2390	14.8675
1279.6	0.929913	1.3949	0.156	0.1557	1.8681	1.2392	14.8694
1279.8	0.930021	1.3950	0.156	0.1557	1.8681	1.2394	14.8714
1280	0.930129	1.3952	0.156	0.1557	1.8681	1.2395	14.8733
1280.2	0.930236	1.3954	0.156	0.1557	1.8681	1.2397	14.8752
1280.4	0.930344	1.3955	0.156	0.1557	1.8681	1.2398	14.8772
1280.6	0.930452	1.3957	0.156	0.1557	1.8681	1.2400	14.8791
1280.8	0.930559	1.3958	0.156	0.1557	1.8681	1.2402	14.8810
1281	0.930667	1.3960	0.156	0.1557	1.8681	1.2403	14.8830
1281.2	0.930774	1.3962	0.156	0.1557	1.8681	1.2405	14.8849
1281.4	0.930881	1.3963	0.156	0.1557	1.8681	1.2407	14.8868
1281.6	0.930988	1.3965	0.156	0.1557	1.8681	1.2408	14.8888
1281.8	0.931095	1.3966	0.156	0.1557	1.8681	1.2410	14.8907
1282	0.931202	1.3968	0.156	0.1557	1.8681	1.2411	14.8926
1282.2	0.931309	1.3970	0.156	0.1557	1.8681	1.2413	14.8946
1282.4	0.931416	1.3971	0.156	0.1557	1.8681	1.2415	14.8965
1282.6	0.931523	1.3973	0.156	0.1557	1.8681	1.2416	14.8984
1282.8	0.93163	1.3974	0.156	0.1557	1.8681	1.2418	14.9003
1283	0.931736	1.3976	0.156	0.1557	1.8681	1.2419	14.9022
1283.2	0.931843	1.3978	0.156	0.1557	1.8681	1.2421	14.9042
1283.4	0.931949	1.3979	0.156	0.1557	1.8681	1.2423	14.9061
1283.6	0.932056	1.3981	0.156	0.1557	1.8681	1.2424	14.9080
1283.8	0.932162	1.3982	0.156	0.1557	1.8681	1.2426	14.9099
1284	0.932268	1.3984	0.156	0.1557	1.8681	1.2427	14.9118
1284.2	0.932375	1.3986	0.156	0.1557	1.8681	1.2429	14.9137
1284.4	0.932481	1.3987	0.156	0.1557	1.8681	1.2430	14.9156
1284.6	0.932587	1.3989	0.156	0.1557	1.8681	1.2432	14.9176
1284.8	0.932693	1.3990	0.156	0.1557	1.8681	1.2434	14.9195
1285	0.932799	1.3992	0.156	0.1557	1.8681	1.2435	14.9214
1285.2	0.932904	1.3994	0.156	0.1557	1.8681	1.2437	14.9233
1285.4	0.93301	1.3995	0.156	0.1557	1.8681	1.2438	14.9252
1285.6	0.933116	1.3997	0.156	0.1557	1.8681	1.2440	14.9271
1285.8	0.933221	1.3998	0.156	0.1557	1.8681	1.2442	14.9290
1286	0.933327	1.4000	0.156	0.1557	1.8681	1.2443	14.9309
1286.2	0.933432	1.4001	0.156	0.1557	1.8681	1.2445	14.9328

1286.4	0.933538	1.4003	0.156	0.1557	1.8681	1.2446	14.9347
1286.6	0.933643	1.4005	0.156	0.1557	1.8681	1.2448	14.9366
1286.8	0.933748	1.4006	0.156	0.1557	1.8681	1.2450	14.9385
1287	0.933853	1.4008	0.156	0.1557	1.8681	1.2451	14.9404
1287.2	0.933958	1.4009	0.156	0.1557	1.8681	1.2453	14.9422
1287.4	0.934063	1.4011	0.156	0.1557	1.8681	1.2454	14.9441
1287.6	0.934168	1.4013	0.156	0.1557	1.8681	1.2456	14.9460
1287.8	0.934273	1.4014	0.156	0.1557	1.8681	1.2457	14.9479
1288	0.934378	1.4016	0.156	0.1557	1.8681	1.2459	14.9498
1288.2	0.934483	1.4017	0.156	0.1557	1.8681	1.2461	14.9517
1288.4	0.934587	1.4019	0.156	0.1557	1.8681	1.2462	14.9536
1288.6	0.934692	1.4020	0.156	0.1557	1.8681	1.2464	14.9555
1288.8	0.934796	1.4022	0.156	0.1557	1.8681	1.2465	14.9573
1289	0.934901	1.4024	0.156	0.1557	1.8681	1.2467	14.9592
1289.2	0.935005	1.4025	0.156	0.1557	1.8681	1.2468	14.9611
1289.4	0.935109	1.4027	0.156	0.1557	1.8681	1.2470	14.9630
1289.6	0.935213	1.4028	0.156	0.1557	1.8681	1.2471	14.9648
1289.8	0.935318	1.4030	0.156	0.1557	1.8681	1.2473	14.9667
1290	0.935422	1.4031	0.156	0.1557	1.8681	1.2475	14.9686
1290.2	0.935526	1.4033	0.156	0.1557	1.8681	1.2476	14.9705
1290.4	0.935629	1.4034	0.156	0.1557	1.8681	1.2478	14.9723
1290.6	0.935733	1.4036	0.156	0.1557	1.8681	1.2479	14.9742
1290.8	0.935837	1.4038	0.156	0.1557	1.8681	1.2481	14.9761
1291	0.935941	1.4039	0.156	0.1557	1.8681	1.2482	14.9779
1291.2	0.936044	1.4041	0.156	0.1557	1.8681	1.2484	14.9798
1291.4	0.936148	1.4042	0.156	0.1557	1.8681	1.2486	14.9817
1291.6	0.936251	1.4044	0.156	0.1557	1.8681	1.2487	14.9835
1291.8	0.936355	1.4045	0.156	0.1557	1.8681	1.2489	14.9854
1292	0.936458	1.4047	0.156	0.1557	1.8681	1.2490	14.9873
1292.2	0.936562	1.4048	0.156	0.1557	1.8681	1.2492	14.9891
1292.4	0.936665	1.4050	0.156	0.1557	1.8681	1.2493	14.9910
1292.6	0.936768	1.4052	0.156	0.1557	1.8681	1.2495	14.9928
1292.8	0.936871	1.4053	0.156	0.1557	1.8681	1.2496	14.9947
1293	0.936974	1.4055	0.156	0.1557	1.8681	1.2498	14.9965
1293.2	0.937077	1.4056	0.156	0.1557	1.8681	1.2499	14.9984
1293.4	0.93718	1.4058	0.156	0.1557	1.8681	1.2501	15.0003
1293.6	0.937283	1.4059	0.156	0.1557	1.8681	1.2503	15.0021
1293.8	0.937385	1.4061	0.156	0.1557	1.8681	1.2504	15.0040
1294	0.937488	1.4062	0.156	0.1557	1.8681	1.2506	15.0058
1294.2	0.937591	1.4064	0.156	0.1557	1.8681	1.2507	15.0077
1294.4	0.937693	1.4065	0.156	0.1557	1.8681	1.2509	15.0095
1294.6	0.937796	1.4067	0.156	0.1557	1.8681	1.2510	15.0113
1294.8	0.937898	1.4068	0.156	0.1557	1.8681	1.2512	15.0132
1295	0.938	1.4070	0.156	0.1557	1.8681	1.2513	15.0150
1295.2	0.938103	1.4072	0.156	0.1557	1.8681	1.2515	15.0169
1295.4	0.938205	1.4073	0.156	0.1557	1.8681	1.2516	15.0187
1295.6	0.938307	1.4075	0.156	0.1557	1.8681	1.2518	15.0205

1295.8	0.938409	1.4076	0.156	0.1557	1.8681	1.2519	15.0224
1296	0.938511	1.4078	0.156	0.1557	1.8681	1.2521	15.0242
1296.2	0.938613	1.4079	0.156	0.1557	1.8681	1.2522	15.0261
1296.4	0.938715	1.4081	0.156	0.1557	1.8681	1.2524	15.0279
1296.6	0.938817	1.4082	0.156	0.1557	1.8681	1.2526	15.0297
1296.8	0.938918	1.4084	0.156	0.1557	1.8681	1.2527	15.0316
1297	0.93902	1.4085	0.156	0.1557	1.8681	1.2529	15.0334
1297.2	0.939122	1.4087	0.156	0.1557	1.8681	1.2530	15.0352
1297.4	0.939223	1.4088	0.156	0.1557	1.8681	1.2532	15.0370
1297.6	0.939325	1.4090	0.156	0.1557	1.8681	1.2533	15.0389
1297.8	0.939426	1.4091	0.156	0.1557	1.8681	1.2535	15.0407
1298	0.939527	1.4093	0.156	0.1557	1.8681	1.2536	15.0425
1298.2	0.939629	1.4094	0.156	0.1557	1.8681	1.2538	15.0443
1298.4	0.93973	1.4096	0.156	0.1557	1.8681	1.2539	15.0462
1298.6	0.939831	1.4097	0.156	0.1557	1.8681	1.2541	15.0480
1298.8	0.939932	1.4099	0.156	0.1557	1.8681	1.2542	15.0498
1299	0.940033	1.4100	0.156	0.1557	1.8681	1.2544	15.0516
1299.2	0.940134	1.4102	0.156	0.1557	1.8681	1.2545	15.0534
1299.4	0.940235	1.4104	0.156	0.1557	1.8681	1.2547	15.0553
1299.6	0.940336	1.4105	0.156	0.1557	1.8681	1.2548	15.0571
1299.8	0.940436	1.4107	0.156	0.1557	1.8681	1.2550	15.0589
1300	0.940537	1.4108	0.156	0.1557	1.8681	1.2551	15.0607
1300.2	0.940638	1.4110	0.156	0.1557	1.8681	1.2553	15.0625
1300.4	0.940738	1.4111	0.156	0.1557	1.8681	1.2554	15.0643
1300.6	0.940839	1.4113	0.156	0.1557	1.8681	1.2556	15.0661
1300.8	0.940939	1.4114	0.156	0.1557	1.8681	1.2557	15.0679
1301	0.941039	1.4116	0.156	0.1557	1.8681	1.2559	15.0698
1301.2	0.94114	1.4117	0.156	0.1557	1.8681	1.2560	15.0716
1301.4	0.94124	1.4119	0.156	0.1557	1.8681	1.2562	15.0734
1301.6	0.94134	1.4120	0.156	0.1557	1.8681	1.2563	15.0752
1301.8	0.94144	1.4122	0.156	0.1557	1.8681	1.2565	15.0770
1302	0.94154	1.4123	0.156	0.1557	1.8681	1.2566	15.0788
1302.2	0.94164	1.4125	0.156	0.1557	1.8681	1.2568	15.0806
1302.4	0.94174	1.4126	0.156	0.1557	1.8681	1.2569	15.0824
1302.6	0.94184	1.4128	0.156	0.1557	1.8681	1.2571	15.0842
1302.8	0.94194	1.4129	0.156	0.1557	1.8681	1.2572	15.0860
1303	0.94204	1.4131	0.156	0.1557	1.8681	1.2574	15.0878
1303.2	0.942139	1.4132	0.156	0.1557	1.8681	1.2575	15.0896
1303.4	0.942239	1.4134	0.156	0.1557	1.8681	1.2577	15.0913
1303.6	0.942339	1.4135	0.156	0.1557	1.8681	1.2578	15.0931
1303.8	0.942438	1.4137	0.156	0.1557	1.8681	1.2580	15.0949
1304	0.942537	1.4138	0.156	0.1557	1.8681	1.2581	15.0967
1304.2	0.942637	1.4140	0.156	0.1557	1.8681	1.2583	15.0985
1304.4	0.942736	1.4141	0.156	0.1557	1.8681	1.2584	15.1003
1304.6	0.942835	1.4143	0.156	0.1557	1.8681	1.2586	15.1021
1304.8	0.942935	1.4144	0.156	0.1557	1.8681	1.2587	15.1039
1305	0.943034	1.4146	0.156	0.1557	1.8681	1.2589	15.1057

1305.2	0.943133	1.4147	0.156	0.1557	1.8681	1.2590	15.1074
1305.4	0.943232	1.4148	0.156	0.1557	1.8681	1.2592	15.1092
1305.6	0.943331	1.4150	0.156	0.1557	1.8681	1.2593	15.1110
1305.8	0.94343	1.4151	0.156	0.1557	1.8681	1.2595	15.1128
1306	0.943528	1.4153	0.156	0.1557	1.8681	1.2596	15.1146
1306.2	0.943627	1.4154	0.156	0.1557	1.8681	1.2598	15.1163
1306.4	0.943726	1.4156	0.156	0.1557	1.8681	1.2599	15.1181
1306.6	0.943825	1.4157	0.156	0.1557	1.8681	1.2601	15.1199
1306.8	0.943923	1.4159	0.156	0.1557	1.8681	1.2602	15.1217
1307	0.944022	1.4160	0.156	0.1557	1.8681	1.2604	15.1234
1307.2	0.94412	1.4162	0.156	0.1557	1.8681	1.2605	15.1252
1307.4	0.944219	1.4163	0.156	0.1557	1.8681	1.2607	15.1270
1307.6	0.944317	1.4165	0.156	0.1557	1.8681	1.2608	15.1288
1307.8	0.944415	1.4166	0.156	0.1557	1.8681	1.2610	15.1305
1308	0.944513	1.4168	0.156	0.1557	1.8681	1.2611	15.1323
1308.2	0.944612	1.4169	0.156	0.1557	1.8681	1.2612	15.1341
1308.4	0.94471	1.4171	0.156	0.1557	1.8681	1.2614	15.1358
1308.6	0.944808	1.4172	0.156	0.1557	1.8681	1.2615	15.1376
1308.8	0.944906	1.4174	0.156	0.1557	1.8681	1.2617	15.1394
1309	0.945004	1.4175	0.156	0.1557	1.8681	1.2618	15.1411
1309.2	0.945101	1.4177	0.156	0.1557	1.8681	1.2620	15.1429
1309.4	0.945199	1.4178	0.156	0.1557	1.8681	1.2621	15.1447
1309.6	0.945297	1.4179	0.156	0.1557	1.8681	1.2623	15.1464
1309.8	0.945395	1.4181	0.156	0.1557	1.8681	1.2624	15.1482
1310	0.945492	1.4182	0.156	0.1557	1.8681	1.2626	15.1499
1310.2	0.94559	1.4184	0.156	0.1557	1.8681	1.2627	15.1517
1310.4	0.945687	1.4185	0.156	0.1557	1.8681	1.2629	15.1534
1310.6	0.945785	1.4187	0.156	0.1557	1.8681	1.2630	15.1552
1310.8	0.945882	1.4188	0.156	0.1557	1.8681	1.2632	15.1570
1311	0.94598	1.4190	0.156	0.1557	1.8681	1.2633	15.1587
1311.2	0.946077	1.4191	0.156	0.1557	1.8681	1.2634	15.1605
1311.4	0.946174	1.4193	0.156	0.1557	1.8681	1.2636	15.1622
1311.6	0.946271	1.4194	0.156	0.1557	1.8681	1.2637	15.1640
1311.8	0.946369	1.4196	0.156	0.1557	1.8681	1.2639	15.1657
1312	0.946466	1.4197	0.156	0.1557	1.8681	1.2640	15.1675
1312.2	0.946563	1.4198	0.156	0.1557	1.8681	1.2642	15.1692
1312.4	0.94666	1.4200	0.156	0.1557	1.8681	1.2643	15.1709
1312.6	0.946756	1.4201	0.156	0.1557	1.8681	1.2645	15.1727
1312.8	0.946853	1.4203	0.156	0.1557	1.8681	1.2646	15.1744
1313	0.94695	1.4204	0.156	0.1557	1.8681	1.2648	15.1762
1313.2	0.947047	1.4206	0.156	0.1557	1.8681	1.2649	15.1779
1313.4	0.947143	1.4207	0.156	0.1557	1.8681	1.2650	15.1797
1313.6	0.94724	1.4209	0.156	0.1557	1.8681	1.2652	15.1814
1313.8	0.947337	1.4210	0.156	0.1557	1.8681	1.2653	15.1831
1314	0.947433	1.4211	0.156	0.1557	1.8681	1.2655	15.1849
1314.2	0.94753	1.4213	0.156	0.1557	1.8681	1.2656	15.1866
1314.4	0.947626	1.4214	0.156	0.1557	1.8681	1.2658	15.1883

1314.6	0.947722	1.4216	0.156	0.1557	1.8681	1.2659	15.1901
1314.8	0.947819	1.4217	0.156	0.1557	1.8681	1.2661	15.1918
1315	0.947915	1.4219	0.156	0.1557	1.8681	1.2662	15.1935
1315.2	0.948011	1.4220	0.156	0.1557	1.8681	1.2663	15.1953
1315.4	0.948107	1.4222	0.156	0.1557	1.8681	1.2665	15.1970
1315.6	0.948203	1.4223	0.156	0.1557	1.8681	1.2666	15.1987
1315.8	0.948299	1.4224	0.156	0.1557	1.8681	1.2668	15.2005
1316	0.948395	1.4226	0.156	0.1557	1.8681	1.2669	15.2022
1316.2	0.948491	1.4227	0.156	0.1557	1.8681	1.2671	15.2039
1316.4	0.948587	1.4229	0.156	0.1557	1.8681	1.2672	15.2056
1316.6	0.948682	1.4230	0.156	0.1557	1.8681	1.2674	15.2074
1316.8	0.948778	1.4232	0.156	0.1557	1.8681	1.2675	15.2091
1317	0.948874	1.4233	0.156	0.1557	1.8681	1.2676	15.2108
1317.2	0.948969	1.4235	0.156	0.1557	1.8681	1.2678	15.2125
1317.4	0.949065	1.4236	0.156	0.1557	1.8681	1.2679	15.2143
1317.6	0.949161	1.4237	0.156	0.1557	1.8681	1.2681	15.2160
1317.8	0.949256	1.4239	0.156	0.1557	1.8681	1.2682	15.2177
1318	0.949351	1.4240	0.156	0.1557	1.8681	1.2684	15.2194
1318.2	0.949447	1.4242	0.156	0.1557	1.8681	1.2685	15.2211
1318.4	0.949542	1.4243	0.156	0.1557	1.8681	1.2686	15.2228
1318.6	0.949637	1.4245	0.156	0.1557	1.8681	1.2688	15.2246
1318.8	0.949732	1.4246	0.156	0.1557	1.8681	1.2689	15.2263
1319	0.949828	1.4247	0.156	0.1557	1.8681	1.2691	15.2280
1319.2	0.949923	1.4249	0.156	0.1557	1.8681	1.2692	15.2297
1319.4	0.950018	1.4250	0.156	0.1557	1.8681	1.2694	15.2314
1319.6	0.950113	1.4252	0.156	0.1557	1.8681	1.2695	15.2331
1319.8	0.950208	1.4253	0.156	0.1557	1.8681	1.2696	15.2348
1320	0.950302	1.4255	0.156	0.1557	1.8681	1.2698	15.2365
1320.2	0.950397	1.4256	0.156	0.1557	1.8681	1.2699	15.2382
1320.4	0.950492	1.4257	0.156	0.1557	1.8681	1.2701	15.2399
1320.6	0.950587	1.4259	0.156	0.1557	1.8681	1.2702	15.2417
1320.8	0.950681	1.4260	0.156	0.1557	1.8681	1.2704	15.2434
1321	0.950776	1.4262	0.156	0.1557	1.8681	1.2705	15.2451
1321.2	0.95087	1.4263	0.156	0.1557	1.8681	1.2706	15.2468
1321.4	0.950965	1.4264	0.156	0.1557	1.8681	1.2708	15.2485
1321.6	0.951059	1.4266	0.156	0.1557	1.8681	1.2709	15.2502
1321.8	0.951154	1.4267	0.156	0.1557	1.8681	1.2711	15.2519
1322	0.951248	1.4269	0.156	0.1557	1.8681	1.2712	15.2536
1322.2	0.951342	1.4270	0.156	0.1557	1.8681	1.2713	15.2553
1322.4	0.951437	1.4272	0.156	0.1557	1.8681	1.2715	15.2570
1322.6	0.951531	1.4273	0.156	0.1557	1.8681	1.2716	15.2587
1322.8	0.951625	1.4274	0.156	0.1557	1.8681	1.2718	15.2603
1323	0.951719	1.4276	0.156	0.1557	1.8681	1.2719	15.2620
1323.2	0.951813	1.4277	0.156	0.1557	1.8681	1.2720	15.2637
1323.4	0.951907	1.4279	0.156	0.1557	1.8681	1.2722	15.2654
1323.6	0.952001	1.4280	0.156	0.1557	1.8681	1.2723	15.2671
1323.8	0.952095	1.4281	0.156	0.1557	1.8681	1.2725	15.2688

1324	0.952189	1.4283	0.156	0.1557	1.8681	1.2726	15.2705
1324.2	0.952282	1.4284	0.156	0.1557	1.8681	1.2728	15.2722
1324.4	0.952376	1.4286	0.156	0.1557	1.8681	1.2729	15.2739
1324.6	0.95247	1.4287	0.156	0.1557	1.8681	1.2730	15.2756
1324.8	0.952563	1.4288	0.156	0.1557	1.8681	1.2732	15.2772
1325	0.952657	1.4290	0.156	0.1557	1.8681	1.2733	15.2789
1325.2	0.95275	1.4291	0.156	0.1557	1.8681	1.2735	15.2806
1325.4	0.952844	1.4293	0.156	0.1557	1.8681	1.2736	15.2823
1325.6	0.952937	1.4294	0.156	0.1557	1.8681	1.2737	15.2840
1325.8	0.953031	1.4295	0.156	0.1557	1.8681	1.2739	15.2857
1326	0.953124	1.4297	0.156	0.1557	1.8681	1.2740	15.2873
1326.2	0.953217	1.4298	0.156	0.1557	1.8681	1.2742	15.2890
1326.4	0.95331	1.4300	0.156	0.1557	1.8681	1.2743	15.2907
1326.6	0.953404	1.4301	0.156	0.1557	1.8681	1.2744	15.2924
1326.8	0.953497	1.4302	0.156	0.1557	1.8681	1.2746	15.2940
1327	0.95359	1.4304	0.156	0.1557	1.8681	1.2747	15.2957
1327.2	0.953683	1.4305	0.156	0.1557	1.8681	1.2749	15.2974
1327.4	0.953776	1.4307	0.156	0.1557	1.8681	1.2750	15.2991
1327.6	0.953869	1.4308	0.156	0.1557	1.8681	1.2751	15.3007
1327.8	0.953961	1.4309	0.156	0.1557	1.8681	1.2753	15.3024
1328	0.954054	1.4311	0.156	0.1557	1.8681	1.2754	15.3041
1328.2	0.954147	1.4312	0.156	0.1557	1.8681	1.2755	15.3058
1328.4	0.95424	1.4314	0.156	0.1557	1.8681	1.2757	15.3074
1328.6	0.954332	1.4315	0.156	0.1557	1.8681	1.2758	15.3091
1328.8	0.954425	1.4316	0.156	0.1557	1.8681	1.2760	15.3108
1329	0.954518	1.4318	0.156	0.1557	1.8681	1.2761	15.3124
1329.2	0.95461	1.4319	0.156	0.1557	1.8681	1.2762	15.3141
1329.4	0.954703	1.4321	0.156	0.1557	1.8681	1.2764	15.3158
1329.6	0.954795	1.4322	0.156	0.1557	1.8681	1.2765	15.3174
1329.8	0.954887	1.4323	0.156	0.1557	1.8681	1.2767	15.3191
1330	0.95498	1.4325	0.156	0.1557	1.8681	1.2768	15.3207
1330.2	0.955072	1.4326	0.156	0.1557	1.8681	1.2769	15.3224
1330.4	0.955164	1.4327	0.156	0.1557	1.8681	1.2771	15.3241
1330.6	0.955256	1.4329	0.156	0.1557	1.8681	1.2772	15.3257
1330.8	0.955348	1.4330	0.156	0.1557	1.8681	1.2774	15.3274
1331	0.95544	1.4332	0.156	0.1557	1.8681	1.2775	15.3290
1331.2	0.955532	1.4333	0.156	0.1557	1.8681	1.2776	15.3307
1331.4	0.955624	1.4334	0.156	0.1557	1.8681	1.2778	15.3324
1331.6	0.955716	1.4336	0.156	0.1557	1.8681	1.2779	15.3340
1331.8	0.955808	1.4337	0.156	0.1557	1.8681	1.2780	15.3357
1332	0.9559	1.4339	0.156	0.1557	1.8681	1.2782	15.3373
1332.2	0.955992	1.4340	0.156	0.1557	1.8681	1.2783	15.3390
1332.4	0.956084	1.4341	0.156	0.1557	1.8681	1.2785	15.3406
1332.6	0.956175	1.4343	0.156	0.1557	1.8681	1.2786	15.3423
1332.8	0.956267	1.4344	0.156	0.1557	1.8681	1.2787	15.3439
1333	0.956359	1.4345	0.156	0.1557	1.8681	1.2789	15.3456
1333.2	0.95645	1.4347	0.156	0.1557	1.8681	1.2790	15.3472

1333.4	0.956542	1.4348	0.156	0.1557	1.8681	1.2791	15.3489
1333.6	0.956633	1.4349	0.156	0.1557	1.8681	1.2793	15.3505
1333.8	0.956724	1.4351	0.156	0.1557	1.8681	1.2794	15.3522
1334	0.956816	1.4352	0.156	0.1557	1.8681	1.2796	15.3538
1334.2	0.956907	1.4354	0.156	0.1557	1.8681	1.2797	15.3555
1334.4	0.956998	1.4355	0.156	0.1557	1.8681	1.2798	15.3571
1334.6	0.95709	1.4356	0.156	0.1557	1.8681	1.2800	15.3587
1334.8	0.957181	1.4358	0.156	0.1557	1.8681	1.2801	15.3604
1335	0.957272	1.4359	0.156	0.1557	1.8681	1.2802	15.3620
1335.2	0.957363	1.4360	0.156	0.1557	1.8681	1.2804	15.3637
1335.4	0.957454	1.4362	0.156	0.1557	1.8681	1.2805	15.3653
1335.6	0.957545	1.4363	0.156	0.1557	1.8681	1.2806	15.3669
1335.8	0.957636	1.4365	0.156	0.1557	1.8681	1.2808	15.3686
1336	0.957727	1.4366	0.156	0.1557	1.8681	1.2809	15.3702
1336.2	0.957818	1.4367	0.156	0.1557	1.8681	1.2811	15.3718
1336.4	0.957908	1.4369	0.156	0.1557	1.8681	1.2812	15.3735
1336.6	0.957999	1.4370	0.156	0.1557	1.8681	1.2813	15.3751
1336.8	0.95809	1.4371	0.156	0.1557	1.8681	1.2815	15.3767
1337	0.958181	1.4373	0.156	0.1557	1.8681	1.2816	15.3784
1337.2	0.958271	1.4374	0.156	0.1557	1.8681	1.2817	15.3800
1337.4	0.958362	1.4375	0.156	0.1557	1.8681	1.2819	15.3816
1337.6	0.958452	1.4377	0.156	0.1557	1.8681	1.2820	15.3833
1337.8	0.958543	1.4378	0.156	0.1557	1.8681	1.2821	15.3849
1338	0.958633	1.4379	0.156	0.1557	1.8681	1.2823	15.3865
1338.2	0.958723	1.4381	0.156	0.1557	1.8681	1.2824	15.3882
1338.4	0.958814	1.4382	0.156	0.1557	1.8681	1.2825	15.3898
1338.6	0.958904	1.4384	0.156	0.1557	1.8681	1.2827	15.3914
1338.8	0.958994	1.4385	0.156	0.1557	1.8681	1.2828	15.3930
1339	0.959085	1.4386	0.156	0.1557	1.8681	1.2830	15.3947
1339.2	0.959175	1.4388	0.156	0.1557	1.8681	1.2831	15.3963
1339.4	0.959265	1.4389	0.156	0.1557	1.8681	1.2832	15.3979
1339.6	0.959355	1.4390	0.156	0.1557	1.8681	1.2834	15.3995
1339.8	0.959445	1.4392	0.156	0.1557	1.8681	1.2835	15.4011
1340	0.959535	1.4393	0.156	0.1557	1.8681	1.2836	15.4028
1340.2	0.959625	1.4394	0.156	0.1557	1.8681	1.2838	15.4044
1340.4	0.959715	1.4396	0.156	0.1557	1.8681	1.2839	15.4060
1340.6	0.959805	1.4397	0.156	0.1557	1.8681	1.2840	15.4076
1340.8	0.959894	1.4398	0.156	0.1557	1.8681	1.2842	15.4092
1341	0.959984	1.4400	0.156	0.1557	1.8681	1.2843	15.4108
1341.2	0.960074	1.4401	0.156	0.1557	1.8681	1.2844	15.4125
1341.4	0.960163	1.4402	0.156	0.1557	1.8681	1.2846	15.4141
1341.6	0.960253	1.4404	0.156	0.1557	1.8681	1.2847	15.4157
1341.8	0.960343	1.4405	0.156	0.1557	1.8681	1.2848	15.4173
1342	0.960432	1.4406	0.156	0.1557	1.8681	1.2850	15.4189
1342.2	0.960522	1.4408	0.156	0.1557	1.8681	1.2851	15.4205
1342.4	0.960611	1.4409	0.156	0.1557	1.8681	1.2852	15.4221
1342.6	0.9607	1.4411	0.156	0.1557	1.8681	1.2854	15.4237

1342.8	0.96079	1.4412	0.156	0.1557	1.8681	1.2855	15.4254
1343	0.960879	1.4413	0.156	0.1557	1.8681	1.2856	15.4270
1343.2	0.960968	1.4415	0.156	0.1557	1.8681	1.2858	15.4286
1343.4	0.961058	1.4416	0.156	0.1557	1.8681	1.2859	15.4302
1343.6	0.961147	1.4417	0.156	0.1557	1.8681	1.2860	15.4318
1343.8	0.961236	1.4419	0.156	0.1557	1.8681	1.2862	15.4334
1344	0.961325	1.4420	0.156	0.1557	1.8681	1.2863	15.4350
1344.2	0.961414	1.4421	0.156	0.1557	1.8681	1.2864	15.4366
1344.4	0.961503	1.4423	0.156	0.1557	1.8681	1.2866	15.4382
1344.6	0.961592	1.4424	0.156	0.1557	1.8681	1.2867	15.4398
1344.8	0.961681	1.4425	0.156	0.1557	1.8681	1.2869	15.4414
1345	0.96177	1.4427	0.156	0.1557	1.8681	1.2870	15.4430
1345.2	0.961859	1.4428	0.156	0.1557	1.8681	1.2871	15.4446
1345.4	0.961947	1.4429	0.156	0.1557	1.8681	1.2872	15.4462
1345.6	0.962036	1.4431	0.156	0.1557	1.8681	1.2874	15.4478
1345.8	0.962125	1.4432	0.156	0.1557	1.8681	1.2875	15.4494
1346	0.962213	1.4433	0.156	0.1557	1.8681	1.2876	15.4510
1346.2	0.962302	1.4435	0.156	0.1557	1.8681	1.2878	15.4526
1346.4	0.962391	1.4436	0.156	0.1557	1.8681	1.2879	15.4542
1346.6	0.962479	1.4437	0.156	0.1557	1.8681	1.2880	15.4558
1346.8	0.962568	1.4439	0.156	0.1557	1.8681	1.2882	15.4574
1347	0.962656	1.4440	0.156	0.1557	1.8681	1.2883	15.4590
1347.2	0.962744	1.4441	0.156	0.1557	1.8681	1.2884	15.4605
1347.4	0.962833	1.4442	0.156	0.1557	1.8681	1.2886	15.4621
1347.6	0.962921	1.4444	0.156	0.1557	1.8681	1.2887	15.4637
1347.8	0.963009	1.4445	0.156	0.1557	1.8681	1.2888	15.4653
1348	0.963098	1.4446	0.156	0.1557	1.8681	1.2890	15.4669
1348.2	0.963186	1.4448	0.156	0.1557	1.8681	1.2891	15.4685
1348.4	0.963274	1.4449	0.156	0.1557	1.8681	1.2892	15.4701
1348.6	0.963362	1.4450	0.156	0.1557	1.8681	1.2894	15.4717
1348.8	0.96345	1.4452	0.156	0.1557	1.8681	1.2895	15.4733
1349	0.963538	1.4453	0.156	0.1557	1.8681	1.2896	15.4748
1349.2	0.963626	1.4454	0.156	0.1557	1.8681	1.2898	15.4764
1349.4	0.963714	1.4456	0.156	0.1557	1.8681	1.2899	15.4780
1349.6	0.963802	1.4457	0.156	0.1557	1.8681	1.2900	15.4796
1349.8	0.96389	1.4458	0.156	0.1557	1.8681	1.2902	15.4812
1350	0.963978	1.4460	0.156	0.1557	1.8681	1.2903	15.4828
1350.2	0.964065	1.4461	0.156	0.1557	1.8681	1.2904	15.4843
1350.4	0.964153	1.4462	0.156	0.1557	1.8681	1.2906	15.4859
1350.6	0.964241	1.4464	0.156	0.1557	1.8681	1.2907	15.4875
1350.8	0.964328	1.4465	0.156	0.1557	1.8681	1.2908	15.4891
1351	0.964416	1.4466	0.156	0.1557	1.8681	1.2910	15.4906
1351.2	0.964504	1.4468	0.156	0.1557	1.8681	1.2911	15.4922
1351.4	0.964591	1.4469	0.156	0.1557	1.8681	1.2912	15.4938
1351.6	0.964679	1.4470	0.156	0.1557	1.8681	1.2913	15.4954
1351.8	0.964766	1.4471	0.156	0.1557	1.8681	1.2915	15.4969
1352	0.964853	1.4473	0.156	0.1557	1.8681	1.2916	15.4985

1352.2	0.964941	1.4474	0.156	0.1557	1.8681	1.2917	15.5001
1352.4	0.965028	1.4475	0.156	0.1557	1.8681	1.2919	15.5017
1352.6	0.965115	1.4477	0.156	0.1557	1.8681	1.2920	15.5032
1352.8	0.965203	1.4478	0.156	0.1557	1.8681	1.2921	15.5048
1353	0.96529	1.4479	0.156	0.1557	1.8681	1.2923	15.5064
1353.2	0.965377	1.4481	0.156	0.1557	1.8681	1.2924	15.5079
1353.4	0.965464	1.4482	0.156	0.1557	1.8681	1.2925	15.5095
1353.6	0.965551	1.4483	0.156	0.1557	1.8681	1.2927	15.5111
1353.8	0.965638	1.4485	0.156	0.1557	1.8681	1.2928	15.5126
1354	0.965725	1.4486	0.156	0.1557	1.8681	1.2929	15.5142
1354.2	0.965812	1.4487	0.156	0.1557	1.8681	1.2930	15.5158
1354.4	0.965899	1.4488	0.156	0.1557	1.8681	1.2932	15.5173
1354.6	0.965986	1.4490	0.156	0.1557	1.8681	1.2933	15.5189
1354.8	0.966073	1.4491	0.156	0.1557	1.8681	1.2934	15.5205
1355	0.966159	1.4492	0.156	0.1557	1.8681	1.2936	15.5220
1355.2	0.966246	1.4494	0.156	0.1557	1.8681	1.2937	15.5236
1355.4	0.966333	1.4495	0.156	0.1557	1.8681	1.2938	15.5252
1355.6	0.966419	1.4496	0.156	0.1557	1.8681	1.2940	15.5267
1355.8	0.966506	1.4498	0.156	0.1557	1.8681	1.2941	15.5283
1356	0.966593	1.4499	0.156	0.1557	1.8681	1.2942	15.5298
1356.2	0.966679	1.4500	0.156	0.1557	1.8681	1.2943	15.5314
1356.4	0.966766	1.4501	0.156	0.1557	1.8681	1.2945	15.5329
1356.6	0.966852	1.4503	0.156	0.1557	1.8681	1.2946	15.5345
1356.8	0.966939	1.4504	0.156	0.1557	1.8681	1.2947	15.5361
1357	0.967025	1.4505	0.156	0.1557	1.8681	1.2949	15.5376
1357.2	0.967111	1.4507	0.156	0.1557	1.8681	1.2950	15.5392
1357.4	0.967198	1.4508	0.156	0.1557	1.8681	1.2951	15.5407
1357.6	0.967284	1.4509	0.156	0.1557	1.8681	1.2953	15.5423
1357.8	0.96737	1.4511	0.156	0.1557	1.8681	1.2954	15.5438
1358	0.967456	1.4512	0.156	0.1557	1.8681	1.2955	15.5454
1358.2	0.967542	1.4513	0.156	0.1557	1.8681	1.2956	15.5469
1358.4	0.967629	1.4514	0.156	0.1557	1.8681	1.2958	15.5485
1358.6	0.967715	1.4516	0.156	0.1557	1.8681	1.2959	15.5500
1358.8	0.967801	1.4517	0.156	0.1557	1.8681	1.2960	15.5516
1359	0.967887	1.4518	0.156	0.1557	1.8681	1.2962	15.5531
1359.2	0.967973	1.4520	0.156	0.1557	1.8681	1.2963	15.5547
1359.4	0.968059	1.4521	0.156	0.1557	1.8681	1.2964	15.5562
1359.6	0.968144	1.4522	0.156	0.1557	1.8681	1.2965	15.5578
1359.8	0.96823	1.4523	0.156	0.1557	1.8681	1.2967	15.5593
1360	0.968316	1.4525	0.156	0.1557	1.8681	1.2968	15.5609
1360.2	0.968402	1.4526	0.156	0.1557	1.8681	1.2969	15.5624
1360.4	0.968488	1.4527	0.156	0.1557	1.8681	1.2971	15.5639
1360.6	0.968573	1.4529	0.156	0.1557	1.8681	1.2972	15.5655
1360.8	0.968659	1.4530	0.156	0.1557	1.8681	1.2973	15.5670
1361	0.968744	1.4531	0.156	0.1557	1.8681	1.2974	15.5686
1361.2	0.96883	1.4532	0.156	0.1557	1.8681	1.2976	15.5701
1361.4	0.968916	1.4534	0.156	0.1557	1.8681	1.2977	15.5717

1361.6	0.969001	1.4535	0.156	0.1557	1.8681	1.2978	15.5732
1361.8	0.969086	1.4536	0.156	0.1557	1.8681	1.2980	15.5747
1362	0.969172	1.4538	0.156	0.1557	1.8681	1.2981	15.5763
1362.2	0.969257	1.4539	0.156	0.1557	1.8681	1.2982	15.5778
1362.4	0.969343	1.4540	0.156	0.1557	1.8681	1.2983	15.5793
1362.6	0.969428	1.4541	0.156	0.1557	1.8681	1.2985	15.5809
1362.8	0.969513	1.4543	0.156	0.1557	1.8681	1.2986	15.5824
1363	0.969598	1.4544	0.156	0.1557	1.8681	1.2987	15.5839
1363.2	0.969684	1.4545	0.156	0.1557	1.8681	1.2989	15.5855
1363.4	0.969769	1.4547	0.156	0.1557	1.8681	1.2990	15.5870
1363.6	0.969854	1.4548	0.156	0.1557	1.8681	1.2991	15.5885
1363.8	0.969939	1.4549	0.156	0.1557	1.8681	1.2992	15.5901
1364	0.970024	1.4550	0.156	0.1557	1.8681	1.2994	15.5916
1364.2	0.970109	1.4552	0.156	0.1557	1.8681	1.2995	15.5931
1364.4	0.970194	1.4553	0.156	0.1557	1.8681	1.2996	15.5947
1364.6	0.970279	1.4554	0.156	0.1557	1.8681	1.2997	15.5962
1364.8	0.970364	1.4555	0.156	0.1557	1.8681	1.2999	15.5977
1365	0.970448	1.4557	0.156	0.1557	1.8681	1.3000	15.5993
1365.2	0.970533	1.4558	0.156	0.1557	1.8681	1.3001	15.6008
1365.4	0.970618	1.4559	0.156	0.1557	1.8681	1.3003	15.6023
1365.6	0.970703	1.4561	0.156	0.1557	1.8681	1.3004	15.6038
1365.8	0.970787	1.4562	0.156	0.1557	1.8681	1.3005	15.6054
1366	0.970872	1.4563	0.156	0.1557	1.8681	1.3006	15.6069
1366.2	0.970957	1.4564	0.156	0.1557	1.8681	1.3008	15.6084
1366.4	0.971041	1.4566	0.156	0.1557	1.8681	1.3009	15.6099
1366.6	0.971126	1.4567	0.156	0.1557	1.8681	1.3010	15.6114
1366.8	0.97121	1.4568	0.156	0.1557	1.8681	1.3011	15.6130
1367	0.971295	1.4569	0.156	0.1557	1.8681	1.3013	15.6145
1367.2	0.971379	1.4571	0.156	0.1557	1.8681	1.3014	15.6160
1367.4	0.971464	1.4572	0.156	0.1557	1.8681	1.3015	15.6175
1367.6	0.971548	1.4573	0.156	0.1557	1.8681	1.3017	15.6191
1367.8	0.971632	1.4574	0.156	0.1557	1.8681	1.3018	15.6206
1368	0.971717	1.4576	0.156	0.1557	1.8681	1.3019	15.6221
1368.2	0.971801	1.4577	0.156	0.1557	1.8681	1.3020	15.6236
1368.4	0.971885	1.4578	0.156	0.1557	1.8681	1.3022	15.6251
1368.6	0.971969	1.4580	0.156	0.1557	1.8681	1.3023	15.6266
1368.8	0.972053	1.4581	0.156	0.1557	1.8681	1.3024	15.6281
1369	0.972138	1.4582	0.156	0.1557	1.8681	1.3025	15.6297
1369.2	0.972222	1.4583	0.156	0.1557	1.8681	1.3027	15.6312
1369.4	0.972306	1.4585	0.156	0.1557	1.8681	1.3028	15.6327
1369.6	0.97239	1.4586	0.156	0.1557	1.8681	1.3029	15.6342
1369.8	0.972474	1.4587	0.156	0.1557	1.8681	1.3030	15.6357
1370	0.972558	1.4588	0.156	0.1557	1.8681	1.3032	15.6372
1370.2	0.972641	1.4590	0.156	0.1557	1.8681	1.3033	15.6387
1370.4	0.972725	1.4591	0.156	0.1557	1.8681	1.3034	15.6402
1370.6	0.972809	1.4592	0.156	0.1557	1.8681	1.3035	15.6418
1370.8	0.972893	1.4593	0.156	0.1557	1.8681	1.3037	15.6433

1371	0.972977	1.4595	0.156	0.1557	1.8681	1.3038	15.6448
1371.2	0.97306	1.4596	0.156	0.1557	1.8681	1.3039	15.6463
1371.4	0.973144	1.4597	0.156	0.1557	1.8681	1.3040	15.6478
1371.6	0.973228	1.4598	0.156	0.1557	1.8681	1.3042	15.6493
1371.8	0.973311	1.4600	0.156	0.1557	1.8681	1.3043	15.6508
1372	0.973395	1.4601	0.156	0.1557	1.8681	1.3044	15.6523
1372.2	0.973478	1.4602	0.156	0.1557	1.8681	1.3045	15.6538
1372.4	0.973562	1.4603	0.156	0.1557	1.8681	1.3047	15.6553
1372.6	0.973645	1.4605	0.156	0.1557	1.8681	1.3048	15.6568
1372.8	0.973729	1.4606	0.156	0.1557	1.8681	1.3049	15.6583
1373	0.973812	1.4607	0.156	0.1557	1.8681	1.3050	15.6598
1373.2	0.973895	1.4608	0.156	0.1557	1.8681	1.3052	15.6613
1373.4	0.973979	1.4610	0.156	0.1557	1.8681	1.3053	15.6628
1373.6	0.974062	1.4611	0.156	0.1557	1.8681	1.3054	15.6643
1373.8	0.974145	1.4612	0.156	0.1557	1.8681	1.3055	15.6658
1374	0.974228	1.4613	0.156	0.1557	1.8681	1.3057	15.6673
1374.2	0.974312	1.4615	0.156	0.1557	1.8681	1.3058	15.6688
1374.4	0.974395	1.4616	0.156	0.1557	1.8681	1.3059	15.6703
1374.6	0.974478	1.4617	0.156	0.1557	1.8681	1.3060	15.6718
1374.8	0.974561	1.4618	0.156	0.1557	1.8681	1.3062	15.6733
1375	0.974644	1.4620	0.156	0.1557	1.8681	1.3063	15.6748
1375.2	0.974727	1.4621	0.156	0.1557	1.8681	1.3064	15.6763
1375.4	0.97481	1.4622	0.156	0.1557	1.8681	1.3065	15.6778
1375.6	0.974893	1.4623	0.156	0.1557	1.8681	1.3067	15.6793
1375.8	0.974976	1.4625	0.156	0.1557	1.8681	1.3068	15.6808
1376	0.975059	1.4626	0.156	0.1557	1.8681	1.3069	15.6823
1376.2	0.975141	1.4627	0.156	0.1557	1.8681	1.3070	15.6837
1376.4	0.975224	1.4628	0.156	0.1557	1.8681	1.3072	15.6852
1376.6	0.975307	1.4630	0.156	0.1557	1.8681	1.3073	15.6867
1376.8	0.97539	1.4631	0.156	0.1557	1.8681	1.3074	15.6882
1377	0.975472	1.4632	0.156	0.1557	1.8681	1.3075	15.6897
1377.2	0.975555	1.4633	0.156	0.1557	1.8681	1.3077	15.6912
1377.4	0.975638	1.4635	0.156	0.1557	1.8681	1.3078	15.6927
1377.6	0.97572	1.4636	0.156	0.1557	1.8681	1.3079	15.6942
1377.8	0.975803	1.4637	0.156	0.1557	1.8681	1.3080	15.6957
1378	0.975885	1.4638	0.156	0.1557	1.8681	1.3082	15.6971
1378.2	0.975968	1.4640	0.156	0.1557	1.8681	1.3083	15.6986
1378.4	0.97605	1.4641	0.156	0.1557	1.8681	1.3084	15.7001
1378.6	0.976133	1.4642	0.156	0.1557	1.8681	1.3085	15.7016
1378.8	0.976215	1.4643	0.156	0.1557	1.8681	1.3087	15.7031
1379	0.976297	1.4644	0.156	0.1557	1.8681	1.3088	15.7046
1379.2	0.97638	1.4646	0.156	0.1557	1.8681	1.3089	15.7060
1379.4	0.976462	1.4647	0.156	0.1557	1.8681	1.3090	15.7075
1379.6	0.976544	1.4648	0.156	0.1557	1.8681	1.3091	15.7090
1379.8	0.976626	1.4649	0.156	0.1557	1.8681	1.3093	15.7105
1380	0.976709	1.4651	0.156	0.1557	1.8681	1.3094	15.7120
1380.2	0.976791	1.4652	0.156	0.1557	1.8681	1.3095	15.7134

1380.4	0.976873	1.4653	0.156	0.1557	1.8681	1.3096	15.7149
1380.6	0.976955	1.4654	0.156	0.1557	1.8681	1.3098	15.7164
1380.8	0.977037	1.4656	0.156	0.1557	1.8681	1.3099	15.7179
1381	0.977119	1.4657	0.156	0.1557	1.8681	1.3100	15.7193
1381.2	0.977201	1.4658	0.156	0.1557	1.8681	1.3101	15.7208
1381.4	0.977283	1.4659	0.156	0.1557	1.8681	1.3103	15.7223
1381.6	0.977365	1.4660	0.156	0.1557	1.8681	1.3104	15.7238
1381.8	0.977447	1.4662	0.156	0.1557	1.8681	1.3105	15.7252
1382	0.977528	1.4663	0.156	0.1557	1.8681	1.3106	15.7267
1382.2	0.97761	1.4664	0.156	0.1557	1.8681	1.3107	15.7282
1382.4	0.977692	1.4665	0.156	0.1557	1.8681	1.3109	15.7297
1382.6	0.977774	1.4667	0.156	0.1557	1.8681	1.3110	15.7311
1382.8	0.977855	1.4668	0.156	0.1557	1.8681	1.3111	15.7326
1383	0.977937	1.4669	0.156	0.1557	1.8681	1.3112	15.7341
1383.2	0.978019	1.4670	0.156	0.1557	1.8681	1.3114	15.7355
1383.4	0.9781	1.4672	0.156	0.1557	1.8681	1.3115	15.7370
1383.6	0.978182	1.4673	0.156	0.1557	1.8681	1.3116	15.7385
1383.8	0.978263	1.4674	0.156	0.1557	1.8681	1.3117	15.7400
1384	0.978345	1.4675	0.156	0.1557	1.8681	1.3118	15.7414
1384.2	0.978426	1.4676	0.156	0.1557	1.8681	1.3120	15.7429
1384.4	0.978508	1.4678	0.156	0.1557	1.8681	1.3121	15.7444
1384.6	0.978589	1.4679	0.156	0.1557	1.8681	1.3122	15.7458
1384.8	0.978671	1.4680	0.156	0.1557	1.8681	1.3123	15.7473
1385	0.978752	1.4681	0.156	0.1557	1.8681	1.3125	15.7487
1385.2	0.978833	1.4682	0.156	0.1557	1.8681	1.3126	15.7502
1385.4	0.978914	1.4684	0.156	0.1557	1.8681	1.3127	15.7517
1385.6	0.978996	1.4685	0.156	0.1557	1.8681	1.3128	15.7531
1385.8	0.979077	1.4686	0.156	0.1557	1.8681	1.3129	15.7546
1386	0.979158	1.4687	0.156	0.1557	1.8681	1.3131	15.7561
1386.2	0.979239	1.4689	0.156	0.1557	1.8681	1.3132	15.7575
1386.4	0.97932	1.4690	0.156	0.1557	1.8681	1.3133	15.7590
1386.6	0.979401	1.4691	0.156	0.1557	1.8681	1.3134	15.7604
1386.8	0.979482	1.4692	0.156	0.1557	1.8681	1.3136	15.7619
1387	0.979563	1.4693	0.156	0.1557	1.8681	1.3137	15.7634
1387.2	0.979644	1.4695	0.156	0.1557	1.8681	1.3138	15.7648
1387.4	0.979725	1.4696	0.156	0.1557	1.8681	1.3139	15.7663
1387.6	0.979806	1.4697	0.156	0.1557	1.8681	1.3140	15.7677
1387.8	0.979887	1.4698	0.156	0.1557	1.8681	1.3142	15.7692
1388	0.979968	1.4700	0.156	0.1557	1.8681	1.3143	15.7706
1388.2	0.980049	1.4701	0.156	0.1557	1.8681	1.3144	15.7721
1388.4	0.98013	1.4702	0.156	0.1557	1.8681	1.3145	15.7736
1388.6	0.98021	1.4703	0.156	0.1557	1.8681	1.3146	15.7750
1388.8	0.980291	1.4704	0.156	0.1557	1.8681	1.3148	15.7765
1389	0.980372	1.4706	0.156	0.1557	1.8681	1.3149	15.7779
1389.2	0.980452	1.4707	0.156	0.1557	1.8681	1.3150	15.7794
1389.4	0.980533	1.4708	0.156	0.1557	1.8681	1.3151	15.7808
1389.6	0.980614	1.4709	0.156	0.1557	1.8681	1.3152	15.7823

1389.8	0.980694	1.4710	0.156	0.1557	1.8681	1.3154	15.7837
1390	0.980775	1.4712	0.156	0.1557	1.8681	1.3155	15.7852
1390.2	0.980855	1.4713	0.156	0.1557	1.8681	1.3156	15.7866
1390.4	0.980936	1.4714	0.156	0.1557	1.8681	1.3157	15.7881
1390.6	0.981016	1.4715	0.156	0.1557	1.8681	1.3159	15.7895
1390.8	0.981097	1.4716	0.156	0.1557	1.8681	1.3160	15.7910
1391	0.981177	1.4718	0.156	0.1557	1.8681	1.3161	15.7924
1391.2	0.981257	1.4719	0.156	0.1557	1.8681	1.3162	15.7939
1391.4	0.981338	1.4720	0.156	0.1557	1.8681	1.3163	15.7953
1391.6	0.981418	1.4721	0.156	0.1557	1.8681	1.3165	15.7967
1391.8	0.981498	1.4722	0.156	0.1557	1.8681	1.3166	15.7982
1392	0.981578	1.4724	0.156	0.1557	1.8681	1.3167	15.7996
1392.2	0.981658	1.4725	0.156	0.1557	1.8681	1.3168	15.8011
1392.4	0.981739	1.4726	0.156	0.1557	1.8681	1.3169	15.8025
1392.6	0.981819	1.4727	0.156	0.1557	1.8681	1.3171	15.8040
1392.8	0.981899	1.4728	0.156	0.1557	1.8681	1.3172	15.8054
1393	0.981979	1.4730	0.156	0.1557	1.8681	1.3173	15.8068
1393.2	0.982059	1.4731	0.156	0.1557	1.8681	1.3174	15.8083
1393.4	0.982139	1.4732	0.156	0.1557	1.8681	1.3175	15.8097
1393.6	0.982219	1.4733	0.156	0.1557	1.8681	1.3177	15.8112
1393.8	0.982299	1.4734	0.156	0.1557	1.8681	1.3178	15.8126
1394	0.982379	1.4736	0.156	0.1557	1.8681	1.3179	15.8140
1394.2	0.982459	1.4737	0.156	0.1557	1.8681	1.3180	15.8155
1394.4	0.982538	1.4738	0.156	0.1557	1.8681	1.3181	15.8169
1394.6	0.982618	1.4739	0.156	0.1557	1.8681	1.3183	15.8184
1394.8	0.982698	1.4740	0.156	0.1557	1.8681	1.3184	15.8198
1395	0.982778	1.4742	0.156	0.1557	1.8681	1.3185	15.8212
1395.2	0.982857	1.4743	0.156	0.1557	1.8681	1.3186	15.8227
1395.4	0.982937	1.4744	0.156	0.1557	1.8681	1.3187	15.8241
1395.6	0.983017	1.4745	0.156	0.1557	1.8681	1.3189	15.8255
1395.8	0.983096	1.4746	0.156	0.1557	1.8681	1.3190	15.8270
1396	0.983176	1.4748	0.156	0.1557	1.8681	1.3191	15.8284
1396.2	0.983256	1.4749	0.156	0.1557	1.8681	1.3192	15.8298
1396.4	0.983335	1.4750	0.156	0.1557	1.8681	1.3193	15.8313
1396.6	0.983415	1.4751	0.156	0.1557	1.8681	1.3195	15.8327
1396.8	0.983494	1.4752	0.156	0.1557	1.8681	1.3196	15.8341
1397	0.983574	1.4754	0.156	0.1557	1.8681	1.3197	15.8356
1397.2	0.983653	1.4755	0.156	0.1557	1.8681	1.3198	15.8370
1397.4	0.983732	1.4756	0.156	0.1557	1.8681	1.3199	15.8384
1397.6	0.983812	1.4757	0.156	0.1557	1.8681	1.3200	15.8398
1397.8	0.983891	1.4758	0.156	0.1557	1.8681	1.3202	15.8413
1398	0.98397	1.4760	0.156	0.1557	1.8681	1.3203	15.8427
1398.2	0.98405	1.4761	0.156	0.1557	1.8681	1.3204	15.8441
1398.4	0.984129	1.4762	0.156	0.1557	1.8681	1.3205	15.8455
1398.6	0.984208	1.4763	0.156	0.1557	1.8681	1.3206	15.8470
1398.8	0.984287	1.4764	0.156	0.1557	1.8681	1.3208	15.8484
1399	0.984366	1.4765	0.156	0.1557	1.8681	1.3209	15.8498

1399.2	0.984445	1.4767	0.156	0.1557	1.8681	1.3210	15.8512
1399.4	0.984524	1.4768	0.156	0.1557	1.8681	1.3211	15.8527
1399.6	0.984603	1.4769	0.156	0.1557	1.8681	1.3212	15.8541
1399.8	0.984682	1.4770	0.156	0.1557	1.8681	1.3214	15.8555
1400	0.984761	1.4771	0.156	0.1557	1.8681	1.3215	15.8569
1400.2	0.98484	1.4773	0.156	0.1557	1.8681	1.3216	15.8584
1400.4	0.984919	1.4774	0.156	0.1557	1.8681	1.3217	15.8598
1400.6	0.984998	1.4775	0.156	0.1557	1.8681	1.3218	15.8612
1400.8	0.985077	1.4776	0.156	0.1557	1.8681	1.3219	15.8626
1401	0.985156	1.4777	0.156	0.1557	1.8681	1.3221	15.8640
1401.2	0.985235	1.4779	0.156	0.1557	1.8681	1.3222	15.8655
1401.4	0.985314	1.4780	0.156	0.1557	1.8681	1.3223	15.8669
1401.6	0.985392	1.4781	0.156	0.1557	1.8681	1.3224	15.8683
1401.8	0.985471	1.4782	0.156	0.1557	1.8681	1.3225	15.8697
1402	0.98555	1.4783	0.156	0.1557	1.8681	1.3227	15.8711
1402.2	0.985628	1.4784	0.156	0.1557	1.8681	1.3228	15.8725
1402.4	0.985707	1.4786	0.156	0.1557	1.8681	1.3229	15.8740
1402.6	0.985786	1.4787	0.156	0.1557	1.8681	1.3230	15.8754
1402.8	0.985864	1.4788	0.156	0.1557	1.8681	1.3231	15.8768
1403	0.985943	1.4789	0.156	0.1557	1.8681	1.3232	15.8782
1403.2	0.986021	1.4790	0.156	0.1557	1.8681	1.3234	15.8796
1403.4	0.9861	1.4791	0.156	0.1557	1.8681	1.3235	15.8810
1403.6	0.986178	1.4793	0.156	0.1557	1.8681	1.3236	15.8824
1403.8	0.986257	1.4794	0.156	0.1557	1.8681	1.3237	15.8839
1404	0.986335	1.4795	0.156	0.1557	1.8681	1.3238	15.8853
1404.2	0.986413	1.4796	0.156	0.1557	1.8681	1.3239	15.8867
1404.4	0.986492	1.4797	0.156	0.1557	1.8681	1.3241	15.8881
1404.6	0.98657	1.4799	0.156	0.1557	1.8681	1.3242	15.8895
1404.8	0.986648	1.4800	0.156	0.1557	1.8681	1.3243	15.8909
1405	0.986726	1.4801	0.156	0.1557	1.8681	1.3244	15.8923
1405.2	0.986805	1.4802	0.156	0.1557	1.8681	1.3245	15.8937
1405.4	0.986883	1.4803	0.156	0.1557	1.8681	1.3247	15.8951
1405.6	0.986961	1.4804	0.156	0.1557	1.8681	1.3248	15.8965
1405.8	0.987039	1.4806	0.156	0.1557	1.8681	1.3249	15.8979
1406	0.987117	1.4807	0.156	0.1557	1.8681	1.3250	15.8994
1406.2	0.987195	1.4808	0.156	0.1557	1.8681	1.3251	15.9008
1406.4	0.987273	1.4809	0.156	0.1557	1.8681	1.3252	15.9022
1406.6	0.987351	1.4810	0.156	0.1557	1.8681	1.3254	15.9036
1406.8	0.987429	1.4811	0.156	0.1557	1.8681	1.3255	15.9050
1407	0.987507	1.4813	0.156	0.1557	1.8681	1.3256	15.9064
1407.2	0.987585	1.4814	0.156	0.1557	1.8681	1.3257	15.9078
1407.4	0.987663	1.4815	0.156	0.1557	1.8681	1.3258	15.9092
1407.6	0.987741	1.4816	0.156	0.1557	1.8681	1.3259	15.9106
1407.8	0.987819	1.4817	0.156	0.1557	1.8681	1.3261	15.9120
1408	0.987897	1.4818	0.156	0.1557	1.8681	1.3262	15.9134
1408.2	0.987974	1.4820	0.156	0.1557	1.8681	1.3263	15.9148
1408.4	0.988052	1.4821	0.156	0.1557	1.8681	1.3264	15.9162

1408.6	0.98813	1.4822	0.156	0.1557	1.8681	1.3265	15.9176
1408.8	0.988208	1.4823	0.156	0.1557	1.8681	1.3266	15.9190
1409	0.988285	1.4824	0.156	0.1557	1.8681	1.3268	15.9204
1409.2	0.988363	1.4825	0.156	0.1557	1.8681	1.3269	15.9218
1409.4	0.988441	1.4827	0.156	0.1557	1.8681	1.3270	15.9232
1409.6	0.988518	1.4828	0.156	0.1557	1.8681	1.3271	15.9246
1409.8	0.988596	1.4829	0.156	0.1557	1.8681	1.3272	15.9260
1410	0.988673	1.4830	0.156	0.1557	1.8681	1.3273	15.9274
1410.2	0.988751	1.4831	0.156	0.1557	1.8681	1.3275	15.9288
1410.4	0.988828	1.4832	0.156	0.1557	1.8681	1.3276	15.9302
1410.6	0.988906	1.4834	0.156	0.1557	1.8681	1.3277	15.9316
1410.8	0.988983	1.4835	0.156	0.1557	1.8681	1.3278	15.9329
1411	0.989061	1.4836	0.156	0.1557	1.8681	1.3279	15.9343
1411.2	0.989138	1.4837	0.156	0.1557	1.8681	1.3280	15.9357
1411.4	0.989215	1.4838	0.156	0.1557	1.8681	1.3282	15.9371
1411.6	0.989293	1.4839	0.156	0.1557	1.8681	1.3283	15.9385
1411.8	0.98937	1.4841	0.156	0.1557	1.8681	1.3284	15.9399
1412	0.989447	1.4842	0.156	0.1557	1.8681	1.3285	15.9413
1412.2	0.989524	1.4843	0.156	0.1557	1.8681	1.3286	15.9427
1412.4	0.989601	1.4844	0.156	0.1557	1.8681	1.3287	15.9441
1412.6	0.989679	1.4845	0.156	0.1557	1.8681	1.3288	15.9455
1412.8	0.989756	1.4846	0.156	0.1557	1.8681	1.3290	15.9469
1413	0.989833	1.4847	0.156	0.1557	1.8681	1.3291	15.9482
1413.2	0.98991	1.4849	0.156	0.1557	1.8681	1.3292	15.9496
1413.4	0.989987	1.4850	0.156	0.1557	1.8681	1.3293	15.9510
1413.6	0.990064	1.4851	0.156	0.1557	1.8681	1.3294	15.9524
1413.8	0.990141	1.4852	0.156	0.1557	1.8681	1.3295	15.9538
1414	0.990218	1.4853	0.156	0.1557	1.8681	1.3297	15.9552
1414.2	0.990295	1.4854	0.156	0.1557	1.8681	1.3298	15.9566
1414.4	0.990372	1.4856	0.156	0.1557	1.8681	1.3299	15.9579
1414.6	0.990449	1.4857	0.156	0.1557	1.8681	1.3300	15.9593
1414.8	0.990526	1.4858	0.156	0.1557	1.8681	1.3301	15.9607
1415	0.990602	1.4859	0.156	0.1557	1.8681	1.3302	15.9621
1415.2	0.990679	1.4860	0.156	0.1557	1.8681	1.3303	15.9635
1415.4	0.990756	1.4861	0.156	0.1557	1.8681	1.3305	15.9649
1415.6	0.990833	1.4862	0.156	0.1557	1.8681	1.3306	15.9662
1415.8	0.99091	1.4864	0.156	0.1557	1.8681	1.3307	15.9676
1416	0.990986	1.4865	0.156	0.1557	1.8681	1.3308	15.9690
1416.2	0.991063	1.4866	0.156	0.1557	1.8681	1.3309	15.9704
1416.4	0.99114	1.4867	0.156	0.1557	1.8681	1.3310	15.9718
1416.6	0.991216	1.4868	0.156	0.1557	1.8681	1.3312	15.9731
1416.8	0.991293	1.4869	0.156	0.1557	1.8681	1.3313	15.9745
1417	0.991369	1.4871	0.156	0.1557	1.8681	1.3314	15.9759
1417.2	0.991446	1.4872	0.156	0.1557	1.8681	1.3315	15.9773
1417.4	0.991522	1.4873	0.156	0.1557	1.8681	1.3316	15.9787
1417.6	0.991599	1.4874	0.156	0.1557	1.8681	1.3317	15.9800
1417.8	0.991675	1.4875	0.156	0.1557	1.8681	1.3318	15.9814

1418	0.991752	1.4876	0.156	0.1557	1.8681	1.3320	15.9828
1418.2	0.991828	1.4877	0.156	0.1557	1.8681	1.3321	15.9842
1418.4	0.991904	1.4879	0.156	0.1557	1.8681	1.3322	15.9855
1418.6	0.991981	1.4880	0.156	0.1557	1.8681	1.3323	15.9869
1418.8	0.992057	1.4881	0.156	0.1557	1.8681	1.3324	15.9883
1419	0.992133	1.4882	0.156	0.1557	1.8681	1.3325	15.9897
1419.2	0.99221	1.4883	0.156	0.1557	1.8681	1.3326	15.9910
1419.4	0.992286	1.4884	0.156	0.1557	1.8681	1.3328	15.9924
1419.6	0.992362	1.4885	0.156	0.1557	1.8681	1.3329	15.9938
1419.8	0.992438	1.4887	0.156	0.1557	1.8681	1.3330	15.9951
1420	0.992514	1.4888	0.156	0.1557	1.8681	1.3331	15.9965
1420.2	0.992591	1.4889	0.156	0.1557	1.8681	1.3332	15.9979
1420.4	0.992667	1.4890	0.156	0.1557	1.8681	1.3333	15.9993
1420.6	0.992743	1.4891	0.156	0.1557	1.8681	1.3334	16.0006
1420.8	0.992819	1.4892	0.156	0.1557	1.8681	1.3336	16.0020
1421	0.992895	1.4893	0.156	0.1557	1.8681	1.3337	16.0034
1421.2	0.992971	1.4895	0.156	0.1557	1.8681	1.3338	16.0047
1421.4	0.993047	1.4896	0.156	0.1557	1.8681	1.3339	16.0061
1421.6	0.993123	1.4897	0.156	0.1557	1.8681	1.3340	16.0075
1421.8	0.993199	1.4898	0.156	0.1557	1.8681	1.3341	16.0088
1422	0.993275	1.4899	0.156	0.1557	1.8681	1.3342	16.0102
1422.2	0.99335	1.4900	0.156	0.1557	1.8681	1.3344	16.0116
1422.4	0.993426	1.4901	0.156	0.1557	1.8681	1.3345	16.0129
1422.6	0.993502	1.4903	0.156	0.1557	1.8681	1.3346	16.0143
1422.8	0.993578	1.4904	0.156	0.1557	1.8681	1.3347	16.0157
1423	0.993654	1.4905	0.156	0.1557	1.8681	1.3348	16.0170
1423.2	0.993729	1.4906	0.156	0.1557	1.8681	1.3349	16.0184
1423.4	0.993805	1.4907	0.156	0.1557	1.8681	1.3350	16.0198
1423.6	0.993881	1.4908	0.156	0.1557	1.8681	1.3351	16.0211
1423.8	0.993956	1.4909	0.156	0.1557	1.8681	1.3353	16.0225
1424	0.994032	1.4910	0.156	0.1557	1.8681	1.3354	16.0238
1424.2	0.994108	1.4912	0.156	0.1557	1.8681	1.3355	16.0252
1424.4	0.994183	1.4913	0.156	0.1557	1.8681	1.3356	16.0266
1424.6	0.994259	1.4914	0.156	0.1557	1.8681	1.3357	16.0279
1424.8	0.994334	1.4915	0.156	0.1557	1.8681	1.3358	16.0293
1425	0.99441	1.4916	0.156	0.1557	1.8681	1.3359	16.0306
1425.2	0.994485	1.4917	0.156	0.1557	1.8681	1.3361	16.0320
1425.4	0.994561	1.4918	0.156	0.1557	1.8681	1.3362	16.0334
1425.6	0.994636	1.4920	0.156	0.1557	1.8681	1.3363	16.0347
1425.8	0.994712	1.4921	0.156	0.1557	1.8681	1.3364	16.0361
1426	0.994787	1.4922	0.156	0.1557	1.8681	1.3365	16.0374
1426.2	0.994862	1.4923	0.156	0.1557	1.8681	1.3366	16.0388
1426.4	0.994938	1.4924	0.156	0.1557	1.8681	1.3367	16.0401
1426.6	0.995013	1.4925	0.156	0.1557	1.8681	1.3368	16.0415
1426.8	0.995088	1.4926	0.156	0.1557	1.8681	1.3370	16.0429
1427	0.995163	1.4927	0.156	0.1557	1.8681	1.3371	16.0442
1427.2	0.995239	1.4929	0.156	0.1557	1.8681	1.3372	16.0456

1427.4	0.995314	1.4930	0.156	0.1557	1.8681	1.3373	16.0469
1427.6	0.995389	1.4931	0.156	0.1557	1.8681	1.3374	16.0483
1427.8	0.995464	1.4932	0.156	0.1557	1.8681	1.3375	16.0496
1428	0.995539	1.4933	0.156	0.1557	1.8681	1.3376	16.0510
1428.2	0.995614	1.4934	0.156	0.1557	1.8681	1.3378	16.0523
1428.4	0.995689	1.4935	0.156	0.1557	1.8681	1.3379	16.0537
1428.6	0.995764	1.4936	0.156	0.1557	1.8681	1.3380	16.0550
1428.8	0.995839	1.4938	0.156	0.1557	1.8681	1.3381	16.0564
1429	0.995914	1.4939	0.156	0.1557	1.8681	1.3382	16.0577
1429.2	0.995989	1.4940	0.156	0.1557	1.8681	1.3383	16.0591
1429.4	0.996064	1.4941	0.156	0.1557	1.8681	1.3384	16.0604
1429.6	0.996139	1.4942	0.156	0.1557	1.8681	1.3385	16.0618
1429.8	0.996214	1.4943	0.156	0.1557	1.8681	1.3386	16.0631
1430	0.996289	1.4944	0.156	0.1557	1.8681	1.3388	16.0645
1430.2	0.996364	1.4945	0.156	0.1557	1.8681	1.3389	16.0658
1430.4	0.996439	1.4947	0.156	0.1557	1.8681	1.3390	16.0672
1430.6	0.996513	1.4948	0.156	0.1557	1.8681	1.3391	16.0685
1430.8	0.996588	1.4949	0.156	0.1557	1.8681	1.3392	16.0699
1431	0.996663	1.4950	0.156	0.1557	1.8681	1.3393	16.0712
1431.2	0.996737	1.4951	0.156	0.1557	1.8681	1.3394	16.0725
1431.4	0.996812	1.4952	0.156	0.1557	1.8681	1.3395	16.0739
1431.6	0.996887	1.4953	0.156	0.1557	1.8681	1.3397	16.0752
1431.8	0.996961	1.4954	0.156	0.1557	1.8681	1.3398	16.0766
1432	0.997036	1.4956	0.156	0.1557	1.8681	1.3399	16.0779
1432.2	0.997111	1.4957	0.156	0.1557	1.8681	1.3400	16.0793
1432.4	0.997185	1.4958	0.156	0.1557	1.8681	1.3401	16.0806
1432.6	0.99726	1.4959	0.156	0.1557	1.8681	1.3402	16.0819
1432.8	0.997334	1.4960	0.156	0.1557	1.8681	1.3403	16.0833
1433	0.997409	1.4961	0.156	0.1557	1.8681	1.3404	16.0846
1433.2	0.997483	1.4962	0.156	0.1557	1.8681	1.3406	16.0860
1433.4	0.997558	1.4963	0.156	0.1557	1.8681	1.3407	16.0873
1433.6	0.997632	1.4964	0.156	0.1557	1.8681	1.3408	16.0887
1433.8	0.997706	1.4966	0.156	0.1557	1.8681	1.3409	16.0900
1434	0.997781	1.4967	0.156	0.1557	1.8681	1.3410	16.0913
1434.2	0.997855	1.4968	0.156	0.1557	1.8681	1.3411	16.0927
1434.4	0.997929	1.4969	0.156	0.1557	1.8681	1.3412	16.0940
1434.6	0.998004	1.4970	0.156	0.1557	1.8681	1.3413	16.0953
1434.8	0.998078	1.4971	0.156	0.1557	1.8681	1.3414	16.0967
1435	0.998152	1.4972	0.156	0.1557	1.8681	1.3416	16.0980
1435.2	0.998226	1.4973	0.156	0.1557	1.8681	1.3417	16.0994
1435.4	0.998301	1.4975	0.156	0.1557	1.8681	1.3418	16.1007
1435.6	0.998375	1.4976	0.156	0.1557	1.8681	1.3419	16.1020
1435.8	0.998449	1.4977	0.156	0.1557	1.8681	1.3420	16.1034
1436	0.998523	1.4978	0.156	0.1557	1.8681	1.3421	16.1047
1436.2	0.998597	1.4979	0.156	0.1557	1.8681	1.3422	16.1060
1436.4	0.998671	1.4980	0.156	0.1557	1.8681	1.3423	16.1074
1436.6	0.998745	1.4981	0.156	0.1557	1.8681	1.3424	16.1087

1436.8	0.998819	1.4982	0.156	0.1557	1.8681	1.3426	16.1100
1437	0.998893	1.4983	0.156	0.1557	1.8681	1.3427	16.1114
1437.2	0.998967	1.4985	0.156	0.1557	1.8681	1.3428	16.1127
1437.4	0.999041	1.4986	0.156	0.1557	1.8681	1.3429	16.1140
1437.6	0.999115	1.4987	0.156	0.1557	1.8681	1.3430	16.1153
1437.8	0.999189	1.4988	0.156	0.1557	1.8681	1.3431	16.1167
1438	0.999263	1.4989	0.156	0.1557	1.8681	1.3432	16.1180
1438.2	0.999337	1.4990	0.156	0.1557	1.8681	1.3433	16.1193
1438.4	0.99941	1.4991	0.156	0.1557	1.8681	1.3434	16.1207
1438.6	0.999484	1.4992	0.156	0.1557	1.8681	1.3436	16.1220
1438.8	0.999558	1.4993	0.156	0.1557	1.8681	1.3437	16.1233
1439	0.999632	1.4994	0.156	0.1557	1.8681	1.3438	16.1247
1439.2	0.999705	1.4996	0.156	0.1557	1.8681	1.3439	16.1260
1439.4	0.999779	1.4997	0.156	0.1557	1.8681	1.3440	16.1273
1439.6	0.999853	1.4998	0.156	0.1557	1.8681	1.3441	16.1286
1439.8	0.999926	1.4999	0.156	0.1557	1.8681	1.3442	16.1300
1440	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1313
1440.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1440.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1440.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1440.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1441	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1441.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1441.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1441.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1441.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1442	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1442.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1442.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1442.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1442.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1443	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1443.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1443.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1443.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1443.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1444	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1444.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
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1444.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1444.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1445	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1445.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1445.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1445.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1445.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1446	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319

1446.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1446.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1446.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1446.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1447	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1447.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1447.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1447.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1447.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1448	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
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1448.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1449	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1449.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1449.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1449.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1449.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1450	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1450.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
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1450.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1450.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1451	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1451.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1451.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1451.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1451.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1452	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1452.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1452.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1452.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1452.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1453	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1453.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1453.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1453.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1453.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1454	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1454.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1454.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1454.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1454.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1455	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1455.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1455.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319

1455.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1455.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1456	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1456.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1456.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1456.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1456.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1457	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1457.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1457.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1457.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1457.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1458	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1458.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1458.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1458.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1458.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1459	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1459.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1459.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1459.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1459.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1460	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1460.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1460.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1460.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1460.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1461	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1461.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1461.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1461.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1461.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1462	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1462.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1462.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1462.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1462.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1463	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1463.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1463.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1463.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1463.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1464	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1464.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1464.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1464.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1464.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319

1465	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1465.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1465.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1465.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1465.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1466	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1466.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1466.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1466.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1466.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1467	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1467.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1467.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1467.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1467.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1468	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1468.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1468.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1468.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1468.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1469	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1469.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1469.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1469.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1469.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1470	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1470.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1470.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1470.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1470.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1471	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1471.2	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1471.4	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1471.6	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1471.8	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
1472	1	1.5000	0.156	0.1557	1.8681	1.3443	16.1319
					12483		43254

Biofiltration Summary

Bouquet - Tract 82126

Proposed Condition

Area 500A

Time (min)	Q (cfs)	1.5*Q (cfs)	Biofiltration (5 in/hr)	Biofiltered Rate (cfs)	Biofiltered Volume (cf)	Stored Flow (cfs)	Stored Vol (cf)	Area
0	0	0.0000	0.058	0	0	0.0000	0	500
0.2	7.36E-05	0.0001	0.058	0.0001	0.0007	0.0000	0.0000	
0.4	0.000147	0.0002	0.058	0.0002	0.0020	0.0000	0.0000	
0.6	0.000221	0.0003	0.058	0.0003	0.0033	0.0000	0.0000	
0.8	0.000294	0.0004	0.058	0.0004	0.0046	0.0000	0.0000	
1	0.000368	0.0006	0.058	0.0006	0.0060	0.0000	0.0000	
1.2	0.000442	0.0007	0.058	0.0007	0.0073	0.0000	0.0000	
1.4	0.000515	0.0008	0.058	0.0008	0.0086	0.0000	0.0000	
1.6	0.000589	0.0009	0.058	0.0009	0.0099	0.0000	0.0000	
1.8	0.000663	0.0010	0.058	0.0010	0.0113	0.0000	0.0000	
2	0.000736	0.0011	0.058	0.0011	0.0126	0.0000	0.0000	
2.2	0.00081	0.0012	0.058	0.0012	0.0139	0.0000	0.0000	
2.4	0.000884	0.0013	0.058	0.0013	0.0152	0.0000	0.0000	
2.6	0.000957	0.0014	0.058	0.0014	0.0166	0.0000	0.0000	
2.8	0.001031	0.0015	0.058	0.0015	0.0179	0.0000	0.0000	
3	0.001105	0.0017	0.058	0.0017	0.0192	0.0000	0.0000	
3.2	0.001179	0.0018	0.058	0.0018	0.0206	0.0000	0.0000	
3.4	0.001252	0.0019	0.058	0.0019	0.0219	0.0000	0.0000	
3.6	0.001326	0.0020	0.058	0.0020	0.0232	0.0000	0.0000	
3.8	0.0014	0.0021	0.058	0.0021	0.0245	0.0000	0.0000	
4	0.001473	0.0022	0.058	0.0022	0.0259	0.0000	0.0000	
4.2	0.001547	0.0023	0.058	0.0023	0.0272	0.0000	0.0000	
4.4	0.001621	0.0024	0.058	0.0024	0.0285	0.0000	0.0000	
4.6	0.001695	0.0025	0.058	0.0025	0.0298	0.0000	0.0000	
4.8	0.001768	0.0027	0.058	0.0027	0.0312	0.0000	0.0000	
5	0.001842	0.0028	0.058	0.0028	0.0325	0.0000	0.0000	
5.2	0.001916	0.0029	0.058	0.0029	0.0338	0.0000	0.0000	
5.4	0.00199	0.0030	0.058	0.0030	0.0352	0.0000	0.0000	
5.6	0.002063	0.0031	0.058	0.0031	0.0365	0.0000	0.0000	
5.8	0.002137	0.0032	0.058	0.0032	0.0378	0.0000	0.0000	
6	0.002211	0.0033	0.058	0.0033	0.0391	0.0000	0.0000	
6.2	0.002285	0.0034	0.058	0.0034	0.0405	0.0000	0.0000	
6.4	0.002359	0.0035	0.058	0.0035	0.0418	0.0000	0.0000	
6.6	0.002432	0.0036	0.058	0.0036	0.0431	0.0000	0.0000	
6.8	0.002506	0.0038	0.058	0.0038	0.0444	0.0000	0.0000	
7	0.00258	0.0039	0.058	0.0039	0.0458	0.0000	0.0000	
7.2	0.002654	0.0040	0.058	0.0040	0.0471	0.0000	0.0000	
7.4	0.002728	0.0041	0.058	0.0041	0.0484	0.0000	0.0000	
7.6	0.002802	0.0042	0.058	0.0042	0.0498	0.0000	0.0000	
7.8	0.002875	0.0043	0.058	0.0043	0.0511	0.0000	0.0000	

8	0.002949	0.0044	0.058	0.0044	0.0524	0.0000	0.0000
8.2	0.003023	0.0045	0.058	0.0045	0.0538	0.0000	0.0000
8.4	0.003097	0.0046	0.058	0.0046	0.0551	0.0000	0.0000
8.6	0.003171	0.0048	0.058	0.0048	0.0564	0.0000	0.0000
8.8	0.003245	0.0049	0.058	0.0049	0.0577	0.0000	0.0000
9	0.003319	0.0050	0.058	0.0050	0.0591	0.0000	0.0000
9.2	0.003392	0.0051	0.058	0.0051	0.0604	0.0000	0.0000
9.4	0.003466	0.0052	0.058	0.0052	0.0617	0.0000	0.0000
9.6	0.00354	0.0053	0.058	0.0053	0.0631	0.0000	0.0000
9.8	0.003614	0.0054	0.058	0.0054	0.0644	0.0000	0.0000
10	0.003688	0.0055	0.058	0.0055	0.0657	0.0000	0.0000
10.2	0.003762	0.0056	0.058	0.0056	0.0671	0.0000	0.0000
10.4	0.003836	0.0058	0.058	0.0058	0.0684	0.0000	0.0000
10.6	0.00391	0.0059	0.058	0.0059	0.0697	0.0000	0.0000
10.8	0.003984	0.0060	0.058	0.0060	0.0710	0.0000	0.0000
11	0.004058	0.0061	0.058	0.0061	0.0724	0.0000	0.0000
11.2	0.004132	0.0062	0.058	0.0062	0.0737	0.0000	0.0000
11.4	0.004206	0.0063	0.058	0.0063	0.0750	0.0000	0.0000
11.6	0.00428	0.0064	0.058	0.0064	0.0764	0.0000	0.0000
11.8	0.004354	0.0065	0.058	0.0065	0.0777	0.0000	0.0000
12	0.004428	0.0066	0.058	0.0066	0.0790	0.0000	0.0000
12.2	0.004502	0.0068	0.058	0.0068	0.0804	0.0000	0.0000
12.4	0.004575	0.0069	0.058	0.0069	0.0817	0.0000	0.0000
12.6	0.004649	0.0070	0.058	0.0070	0.0830	0.0000	0.0000
12.8	0.004723	0.0071	0.058	0.0071	0.0844	0.0000	0.0000
13	0.004797	0.0072	0.058	0.0072	0.0857	0.0000	0.0000
13.2	0.004871	0.0073	0.058	0.0073	0.0870	0.0000	0.0000
13.4	0.004946	0.0074	0.058	0.0074	0.0884	0.0000	0.0000
13.6	0.00502	0.0075	0.058	0.0075	0.0897	0.0000	0.0000
13.8	0.005094	0.0076	0.058	0.0076	0.0910	0.0000	0.0000
14	0.005168	0.0078	0.058	0.0078	0.0924	0.0000	0.0000
14.2	0.005242	0.0079	0.058	0.0079	0.0937	0.0000	0.0000
14.4	0.005316	0.0080	0.058	0.0080	0.0950	0.0000	0.0000
14.6	0.00539	0.0081	0.058	0.0081	0.0963	0.0000	0.0000
14.8	0.005464	0.0082	0.058	0.0082	0.0977	0.0000	0.0000
15	0.005538	0.0083	0.058	0.0083	0.0990	0.0000	0.0000
15.2	0.005612	0.0084	0.058	0.0084	0.1003	0.0000	0.0000
15.4	0.005686	0.0085	0.058	0.0085	0.1017	0.0000	0.0000
15.6	0.00576	0.0086	0.058	0.0086	0.1030	0.0000	0.0000
15.8	0.005834	0.0088	0.058	0.0088	0.1043	0.0000	0.0000
16	0.005908	0.0089	0.058	0.0089	0.1057	0.0000	0.0000
16.2	0.005982	0.0090	0.058	0.0090	0.1070	0.0000	0.0000
16.4	0.006056	0.0091	0.058	0.0091	0.1083	0.0000	0.0000
16.6	0.006131	0.0092	0.058	0.0092	0.1097	0.0000	0.0000
16.8	0.006205	0.0093	0.058	0.0093	0.1110	0.0000	0.0000
17	0.006279	0.0094	0.058	0.0094	0.1124	0.0000	0.0000
17.2	0.006353	0.0095	0.058	0.0095	0.1137	0.0000	0.0000

17.4	0.006427	0.0096	0.058	0.0096	0.1150	0.0000	0.0000
17.6	0.006501	0.0098	0.058	0.0098	0.1164	0.0000	0.0000
17.8	0.006575	0.0099	0.058	0.0099	0.1177	0.0000	0.0000
18	0.00665	0.0100	0.058	0.0100	0.1190	0.0000	0.0000
18.2	0.006724	0.0101	0.058	0.0101	0.1204	0.0000	0.0000
18.4	0.006798	0.0102	0.058	0.0102	0.1217	0.0000	0.0000
18.6	0.006872	0.0103	0.058	0.0103	0.1230	0.0000	0.0000
18.8	0.006946	0.0104	0.058	0.0104	0.1244	0.0000	0.0000
19	0.00702	0.0105	0.058	0.0105	0.1257	0.0000	0.0000
19.2	0.007095	0.0106	0.058	0.0106	0.1270	0.0000	0.0000
19.4	0.007169	0.0108	0.058	0.0108	0.1284	0.0000	0.0000
19.6	0.007243	0.0109	0.058	0.0109	0.1297	0.0000	0.0000
19.8	0.007317	0.0110	0.058	0.0110	0.1310	0.0000	0.0000
20	0.007391	0.0111	0.058	0.0111	0.1324	0.0000	0.0000
20.2	0.007466	0.0112	0.058	0.0112	0.1337	0.0000	0.0000
20.4	0.00754	0.0113	0.058	0.0113	0.1350	0.0000	0.0000
20.6	0.007614	0.0114	0.058	0.0114	0.1364	0.0000	0.0000
20.8	0.007688	0.0115	0.058	0.0115	0.1377	0.0000	0.0000
21	0.007763	0.0116	0.058	0.0116	0.1391	0.0000	0.0000
21.2	0.007837	0.0118	0.058	0.0118	0.1404	0.0000	0.0000
21.4	0.007911	0.0119	0.058	0.0119	0.1417	0.0000	0.0000
21.6	0.007985	0.0120	0.058	0.0120	0.1431	0.0000	0.0000
21.8	0.00806	0.0121	0.058	0.0121	0.1444	0.0000	0.0000
22	0.008134	0.0122	0.058	0.0122	0.1457	0.0000	0.0000
22.2	0.008208	0.0123	0.058	0.0123	0.1471	0.0000	0.0000
22.4	0.008282	0.0124	0.058	0.0124	0.1484	0.0000	0.0000
22.6	0.008357	0.0125	0.058	0.0125	0.1498	0.0000	0.0000
22.8	0.008431	0.0126	0.058	0.0126	0.1511	0.0000	0.0000
23	0.008505	0.0128	0.058	0.0128	0.1524	0.0000	0.0000
23.2	0.00858	0.0129	0.058	0.0129	0.1538	0.0000	0.0000
23.4	0.008654	0.0130	0.058	0.0130	0.1551	0.0000	0.0000
23.6	0.008728	0.0131	0.058	0.0131	0.1564	0.0000	0.0000
23.8	0.008803	0.0132	0.058	0.0132	0.1578	0.0000	0.0000
24	0.008877	0.0133	0.058	0.0133	0.1591	0.0000	0.0000
24.2	0.008951	0.0134	0.058	0.0134	0.1605	0.0000	0.0000
24.4	0.009026	0.0135	0.058	0.0135	0.1618	0.0000	0.0000
24.6	0.0091	0.0137	0.058	0.0137	0.1631	0.0000	0.0000
24.8	0.009174	0.0138	0.058	0.0138	0.1645	0.0000	0.0000
25	0.009249	0.0139	0.058	0.0139	0.1658	0.0000	0.0000
25.2	0.009323	0.0140	0.058	0.0140	0.1671	0.0000	0.0000
25.4	0.009398	0.0141	0.058	0.0141	0.1685	0.0000	0.0000
25.6	0.009472	0.0142	0.058	0.0142	0.1698	0.0000	0.0000
25.8	0.009546	0.0143	0.058	0.0143	0.1712	0.0000	0.0000
26	0.009621	0.0144	0.058	0.0144	0.1725	0.0000	0.0000
26.2	0.009695	0.0145	0.058	0.0145	0.1738	0.0000	0.0000
26.4	0.00977	0.0147	0.058	0.0147	0.1752	0.0000	0.0000
26.6	0.009844	0.0148	0.058	0.0148	0.1765	0.0000	0.0000

26.8	0.009918	0.0149	0.058	0.0149	0.1779	0.0000	0.0000
27	0.009993	0.0150	0.058	0.0150	0.1792	0.0000	0.0000
27.2	0.010067	0.0151	0.058	0.0151	0.1805	0.0000	0.0000
27.4	0.010142	0.0152	0.058	0.0152	0.1819	0.0000	0.0000
27.6	0.010216	0.0153	0.058	0.0153	0.1832	0.0000	0.0000
27.8	0.010291	0.0154	0.058	0.0154	0.1846	0.0000	0.0000
28	0.010365	0.0155	0.058	0.0155	0.1859	0.0000	0.0000
28.2	0.01044	0.0157	0.058	0.0157	0.1872	0.0000	0.0000
28.4	0.010514	0.0158	0.058	0.0158	0.1886	0.0000	0.0000
28.6	0.010589	0.0159	0.058	0.0159	0.1899	0.0000	0.0000
28.8	0.010663	0.0160	0.058	0.0160	0.1913	0.0000	0.0000
29	0.010738	0.0161	0.058	0.0161	0.1926	0.0000	0.0000
29.2	0.010812	0.0162	0.058	0.0162	0.1939	0.0000	0.0000
29.4	0.010887	0.0163	0.058	0.0163	0.1953	0.0000	0.0000
29.6	0.010961	0.0164	0.058	0.0164	0.1966	0.0000	0.0000
29.8	0.011036	0.0166	0.058	0.0166	0.1980	0.0000	0.0000
30	0.01111	0.0167	0.058	0.0167	0.1993	0.0000	0.0000
30.2	0.011185	0.0168	0.058	0.0168	0.2007	0.0000	0.0000
30.4	0.011259	0.0169	0.058	0.0169	0.2020	0.0000	0.0000
30.6	0.011334	0.0170	0.058	0.0170	0.2033	0.0000	0.0000
30.8	0.011408	0.0171	0.058	0.0171	0.2047	0.0000	0.0000
31	0.011483	0.0172	0.058	0.0172	0.2060	0.0000	0.0000
31.2	0.011557	0.0173	0.058	0.0173	0.2074	0.0000	0.0000
31.4	0.011632	0.0174	0.058	0.0174	0.2087	0.0000	0.0000
31.6	0.011707	0.0176	0.058	0.0176	0.2100	0.0000	0.0000
31.8	0.011781	0.0177	0.058	0.0177	0.2114	0.0000	0.0000
32	0.011856	0.0178	0.058	0.0178	0.2127	0.0000	0.0000
32.2	0.01193	0.0179	0.058	0.0179	0.2141	0.0000	0.0000
32.4	0.012005	0.0180	0.058	0.0180	0.2154	0.0000	0.0000
32.6	0.01208	0.0181	0.058	0.0181	0.2168	0.0000	0.0000
32.8	0.012154	0.0182	0.058	0.0182	0.2181	0.0000	0.0000
33	0.012229	0.0183	0.058	0.0183	0.2194	0.0000	0.0000
33.2	0.012303	0.0185	0.058	0.0185	0.2208	0.0000	0.0000
33.4	0.012378	0.0186	0.058	0.0186	0.2221	0.0000	0.0000
33.6	0.012453	0.0187	0.058	0.0187	0.2235	0.0000	0.0000
33.8	0.012527	0.0188	0.058	0.0188	0.2248	0.0000	0.0000
34	0.012602	0.0189	0.058	0.0189	0.2262	0.0000	0.0000
34.2	0.012677	0.0190	0.058	0.0190	0.2275	0.0000	0.0000
34.4	0.012751	0.0191	0.058	0.0191	0.2289	0.0000	0.0000
34.6	0.012826	0.0192	0.058	0.0192	0.2302	0.0000	0.0000
34.8	0.012901	0.0194	0.058	0.0194	0.2315	0.0000	0.0000
35	0.012975	0.0195	0.058	0.0195	0.2329	0.0000	0.0000
35.2	0.01305	0.0196	0.058	0.0196	0.2342	0.0000	0.0000
35.4	0.013125	0.0197	0.058	0.0197	0.2356	0.0000	0.0000
35.6	0.013199	0.0198	0.058	0.0198	0.2369	0.0000	0.0000
35.8	0.013274	0.0199	0.058	0.0199	0.2383	0.0000	0.0000
36	0.013349	0.0200	0.058	0.0200	0.2396	0.0000	0.0000

36.2	0.013424	0.0201	0.058	0.0201	0.2410	0.0000	0.0000
36.4	0.013498	0.0202	0.058	0.0202	0.2423	0.0000	0.0000
36.6	0.013573	0.0204	0.058	0.0204	0.2436	0.0000	0.0000
36.8	0.013648	0.0205	0.058	0.0205	0.2450	0.0000	0.0000
37	0.013722	0.0206	0.058	0.0206	0.2463	0.0000	0.0000
37.2	0.013797	0.0207	0.058	0.0207	0.2477	0.0000	0.0000
37.4	0.013872	0.0208	0.058	0.0208	0.2490	0.0000	0.0000
37.6	0.013947	0.0209	0.058	0.0209	0.2504	0.0000	0.0000
37.8	0.014022	0.0210	0.058	0.0210	0.2517	0.0000	0.0000
38	0.014096	0.0211	0.058	0.0211	0.2531	0.0000	0.0000
38.2	0.014171	0.0213	0.058	0.0213	0.2544	0.0000	0.0000
38.4	0.014246	0.0214	0.058	0.0214	0.2558	0.0000	0.0000
38.6	0.014321	0.0215	0.058	0.0215	0.2571	0.0000	0.0000
38.8	0.014395	0.0216	0.058	0.0216	0.2584	0.0000	0.0000
39	0.01447	0.0217	0.058	0.0217	0.2598	0.0000	0.0000
39.2	0.014545	0.0218	0.058	0.0218	0.2611	0.0000	0.0000
39.4	0.01462	0.0219	0.058	0.0219	0.2625	0.0000	0.0000
39.6	0.014695	0.0220	0.058	0.0220	0.2638	0.0000	0.0000
39.8	0.01477	0.0222	0.058	0.0222	0.2652	0.0000	0.0000
40	0.014844	0.0223	0.058	0.0223	0.2665	0.0000	0.0000
40.2	0.014919	0.0224	0.058	0.0224	0.2679	0.0000	0.0000
40.4	0.014994	0.0225	0.058	0.0225	0.2692	0.0000	0.0000
40.6	0.015069	0.0226	0.058	0.0226	0.2706	0.0000	0.0000
40.8	0.015144	0.0227	0.058	0.0227	0.2719	0.0000	0.0000
41	0.015219	0.0228	0.058	0.0228	0.2733	0.0000	0.0000
41.2	0.015294	0.0229	0.058	0.0229	0.2746	0.0000	0.0000
41.4	0.015369	0.0231	0.058	0.0231	0.2760	0.0000	0.0000
41.6	0.015443	0.0232	0.058	0.0232	0.2773	0.0000	0.0000
41.8	0.015518	0.0233	0.058	0.0233	0.2787	0.0000	0.0000
42	0.015593	0.0234	0.058	0.0234	0.2800	0.0000	0.0000
42.2	0.015668	0.0235	0.058	0.0235	0.2814	0.0000	0.0000
42.4	0.015743	0.0236	0.058	0.0236	0.2827	0.0000	0.0000
42.6	0.015818	0.0237	0.058	0.0237	0.2840	0.0000	0.0000
42.8	0.015893	0.0238	0.058	0.0238	0.2854	0.0000	0.0000
43	0.015968	0.0240	0.058	0.0240	0.2867	0.0000	0.0000
43.2	0.016043	0.0241	0.058	0.0241	0.2881	0.0000	0.0000
43.4	0.016118	0.0242	0.058	0.0242	0.2894	0.0000	0.0000
43.6	0.016193	0.0243	0.058	0.0243	0.2908	0.0000	0.0000
43.8	0.016268	0.0244	0.058	0.0244	0.2921	0.0000	0.0000
44	0.016343	0.0245	0.058	0.0245	0.2935	0.0000	0.0000
44.2	0.016418	0.0246	0.058	0.0246	0.2948	0.0000	0.0000
44.4	0.016493	0.0247	0.058	0.0247	0.2962	0.0000	0.0000
44.6	0.016568	0.0249	0.058	0.0249	0.2975	0.0000	0.0000
44.8	0.016643	0.0250	0.058	0.0250	0.2989	0.0000	0.0000
45	0.016718	0.0251	0.058	0.0251	0.3002	0.0000	0.0000
45.2	0.016793	0.0252	0.058	0.0252	0.3016	0.0000	0.0000
45.4	0.016868	0.0253	0.058	0.0253	0.3029	0.0000	0.0000

45.6	0.016943	0.0254	0.058	0.0254	0.3043	0.0000	0.0000
45.8	0.017018	0.0255	0.058	0.0255	0.3056	0.0000	0.0000
46	0.017093	0.0256	0.058	0.0256	0.3070	0.0000	0.0000
46.2	0.017168	0.0258	0.058	0.0258	0.3083	0.0000	0.0000
46.4	0.017243	0.0259	0.058	0.0259	0.3097	0.0000	0.0000
46.6	0.017318	0.0260	0.058	0.0260	0.3110	0.0000	0.0000
46.8	0.017393	0.0261	0.058	0.0261	0.3124	0.0000	0.0000
47	0.017468	0.0262	0.058	0.0262	0.3137	0.0000	0.0000
47.2	0.017543	0.0263	0.058	0.0263	0.3151	0.0000	0.0000
47.4	0.017618	0.0264	0.058	0.0264	0.3164	0.0000	0.0000
47.6	0.017693	0.0265	0.058	0.0265	0.3178	0.0000	0.0000
47.8	0.017768	0.0267	0.058	0.0267	0.3192	0.0000	0.0000
48	0.017843	0.0268	0.058	0.0268	0.3205	0.0000	0.0000
48.2	0.017918	0.0269	0.058	0.0269	0.3219	0.0000	0.0000
48.4	0.017993	0.0270	0.058	0.0270	0.3232	0.0000	0.0000
48.6	0.018069	0.0271	0.058	0.0271	0.3246	0.0000	0.0000
48.8	0.018144	0.0272	0.058	0.0272	0.3259	0.0000	0.0000
49	0.018219	0.0273	0.058	0.0273	0.3273	0.0000	0.0000
49.2	0.018294	0.0274	0.058	0.0274	0.3286	0.0000	0.0000
49.4	0.018369	0.0276	0.058	0.0276	0.3300	0.0000	0.0000
49.6	0.018444	0.0277	0.058	0.0277	0.3313	0.0000	0.0000
49.8	0.018519	0.0278	0.058	0.0278	0.3327	0.0000	0.0000
50	0.018595	0.0279	0.058	0.0279	0.3340	0.0000	0.0000
50.2	0.01867	0.0280	0.058	0.0280	0.3354	0.0000	0.0000
50.4	0.018745	0.0281	0.058	0.0281	0.3367	0.0000	0.0000
50.6	0.01882	0.0282	0.058	0.0282	0.3381	0.0000	0.0000
50.8	0.018895	0.0283	0.058	0.0283	0.3394	0.0000	0.0000
51	0.01897	0.0285	0.058	0.0285	0.3408	0.0000	0.0000
51.2	0.019046	0.0286	0.058	0.0286	0.3421	0.0000	0.0000
51.4	0.019121	0.0287	0.058	0.0287	0.3435	0.0000	0.0000
51.6	0.019196	0.0288	0.058	0.0288	0.3449	0.0000	0.0000
51.8	0.019271	0.0289	0.058	0.0289	0.3462	0.0000	0.0000
52	0.019347	0.0290	0.058	0.0290	0.3476	0.0000	0.0000
52.2	0.019422	0.0291	0.058	0.0291	0.3489	0.0000	0.0000
52.4	0.019497	0.0292	0.058	0.0292	0.3503	0.0000	0.0000
52.6	0.019572	0.0294	0.058	0.0294	0.3516	0.0000	0.0000
52.8	0.019647	0.0295	0.058	0.0295	0.3530	0.0000	0.0000
53	0.019723	0.0296	0.058	0.0296	0.3543	0.0000	0.0000
53.2	0.019798	0.0297	0.058	0.0297	0.3557	0.0000	0.0000
53.4	0.019873	0.0298	0.058	0.0298	0.3570	0.0000	0.0000
53.6	0.019949	0.0299	0.058	0.0299	0.3584	0.0000	0.0000
53.8	0.020024	0.0300	0.058	0.0300	0.3598	0.0000	0.0000
54	0.020099	0.0301	0.058	0.0301	0.3611	0.0000	0.0000
54.2	0.020174	0.0303	0.058	0.0303	0.3625	0.0000	0.0000
54.4	0.02025	0.0304	0.058	0.0304	0.3638	0.0000	0.0000
54.6	0.020325	0.0305	0.058	0.0305	0.3652	0.0000	0.0000
54.8	0.0204	0.0306	0.058	0.0306	0.3665	0.0000	0.0000

55	0.020476	0.0307	0.058	0.0307	0.3679	0.0000	0.0000
55.2	0.020551	0.0308	0.058	0.0308	0.3692	0.0000	0.0000
55.4	0.020626	0.0309	0.058	0.0309	0.3706	0.0000	0.0000
55.6	0.020702	0.0311	0.058	0.0311	0.3720	0.0000	0.0000
55.8	0.020777	0.0312	0.058	0.0312	0.3733	0.0000	0.0000
56	0.020852	0.0313	0.058	0.0313	0.3747	0.0000	0.0000
56.2	0.020928	0.0314	0.058	0.0314	0.3760	0.0000	0.0000
56.4	0.021003	0.0315	0.058	0.0315	0.3774	0.0000	0.0000
56.6	0.021078	0.0316	0.058	0.0316	0.3787	0.0000	0.0000
56.8	0.021154	0.0317	0.058	0.0317	0.3801	0.0000	0.0000
57	0.021229	0.0318	0.058	0.0318	0.3814	0.0000	0.0000
57.2	0.021305	0.0320	0.058	0.0320	0.3828	0.0000	0.0000
57.4	0.02138	0.0321	0.058	0.0321	0.3842	0.0000	0.0000
57.6	0.021455	0.0322	0.058	0.0322	0.3855	0.0000	0.0000
57.8	0.021531	0.0323	0.058	0.0323	0.3869	0.0000	0.0000
58	0.021606	0.0324	0.058	0.0324	0.3882	0.0000	0.0000
58.2	0.021682	0.0325	0.058	0.0325	0.3896	0.0000	0.0000
58.4	0.021757	0.0326	0.058	0.0326	0.3909	0.0000	0.0000
58.6	0.021833	0.0327	0.058	0.0327	0.3923	0.0000	0.0000
58.8	0.021908	0.0329	0.058	0.0329	0.3937	0.0000	0.0000
59	0.021983	0.0330	0.058	0.0330	0.3950	0.0000	0.0000
59.2	0.022059	0.0331	0.058	0.0331	0.3964	0.0000	0.0000
59.4	0.022134	0.0332	0.058	0.0332	0.3977	0.0000	0.0000
59.6	0.02221	0.0333	0.058	0.0333	0.3991	0.0000	0.0000
59.8	0.022285	0.0334	0.058	0.0334	0.4005	0.0000	0.0000
60	0.022361	0.0335	0.058	0.0335	0.4018	0.0000	0.0000
60.2	0.022436	0.0337	0.058	0.0337	0.4032	0.0000	0.0000
60.4	0.022512	0.0338	0.058	0.0338	0.4045	0.0000	0.0000
60.6	0.022587	0.0339	0.058	0.0339	0.4059	0.0000	0.0000
60.8	0.022663	0.0340	0.058	0.0340	0.4072	0.0000	0.0000
61	0.022738	0.0341	0.058	0.0341	0.4086	0.0000	0.0000
61.2	0.022814	0.0342	0.058	0.0342	0.4100	0.0000	0.0000
61.4	0.022889	0.0343	0.058	0.0343	0.4113	0.0000	0.0000
61.6	0.022965	0.0344	0.058	0.0344	0.4127	0.0000	0.0000
61.8	0.02304	0.0346	0.058	0.0346	0.4140	0.0000	0.0000
62	0.023116	0.0347	0.058	0.0347	0.4154	0.0000	0.0000
62.2	0.023191	0.0348	0.058	0.0348	0.4168	0.0000	0.0000
62.4	0.023267	0.0349	0.058	0.0349	0.4181	0.0000	0.0000
62.6	0.023343	0.0350	0.058	0.0350	0.4195	0.0000	0.0000
62.8	0.023418	0.0351	0.058	0.0351	0.4208	0.0000	0.0000
63	0.023494	0.0352	0.058	0.0352	0.4222	0.0000	0.0000
63.2	0.023569	0.0354	0.058	0.0354	0.4236	0.0000	0.0000
63.4	0.023645	0.0355	0.058	0.0355	0.4249	0.0000	0.0000
63.6	0.023721	0.0356	0.058	0.0356	0.4263	0.0000	0.0000
63.8	0.023796	0.0357	0.058	0.0357	0.4277	0.0000	0.0000
64	0.023872	0.0358	0.058	0.0358	0.4290	0.0000	0.0000
64.2	0.023947	0.0359	0.058	0.0359	0.4304	0.0000	0.0000

64.4	0.024023	0.0360	0.058	0.0360	0.4317	0.0000	0.0000
64.6	0.024099	0.0361	0.058	0.0361	0.4331	0.0000	0.0000
64.8	0.024174	0.0363	0.058	0.0363	0.4345	0.0000	0.0000
65	0.02425	0.0364	0.058	0.0364	0.4358	0.0000	0.0000
65.2	0.024326	0.0365	0.058	0.0365	0.4372	0.0000	0.0000
65.4	0.024401	0.0366	0.058	0.0366	0.4385	0.0000	0.0000
65.6	0.024477	0.0367	0.058	0.0367	0.4399	0.0000	0.0000
65.8	0.024553	0.0368	0.058	0.0368	0.4413	0.0000	0.0000
66	0.024628	0.0369	0.058	0.0369	0.4426	0.0000	0.0000
66.2	0.024704	0.0371	0.058	0.0371	0.4440	0.0000	0.0000
66.4	0.02478	0.0372	0.058	0.0372	0.4454	0.0000	0.0000
66.6	0.024855	0.0373	0.058	0.0373	0.4467	0.0000	0.0000
66.8	0.024931	0.0374	0.058	0.0374	0.4481	0.0000	0.0000
67	0.025007	0.0375	0.058	0.0375	0.4494	0.0000	0.0000
67.2	0.025082	0.0376	0.058	0.0376	0.4508	0.0000	0.0000
67.4	0.025158	0.0377	0.058	0.0377	0.4522	0.0000	0.0000
67.6	0.025234	0.0379	0.058	0.0379	0.4535	0.0000	0.0000
67.8	0.02531	0.0380	0.058	0.0380	0.4549	0.0000	0.0000
68	0.025385	0.0381	0.058	0.0381	0.4563	0.0000	0.0000
68.2	0.025461	0.0382	0.058	0.0382	0.4576	0.0000	0.0000
68.4	0.025537	0.0383	0.058	0.0383	0.4590	0.0000	0.0000
68.6	0.025613	0.0384	0.058	0.0384	0.4603	0.0000	0.0000
68.8	0.025688	0.0385	0.058	0.0385	0.4617	0.0000	0.0000
69	0.025764	0.0386	0.058	0.0386	0.4631	0.0000	0.0000
69.2	0.02584	0.0388	0.058	0.0388	0.4644	0.0000	0.0000
69.4	0.025916	0.0389	0.058	0.0389	0.4658	0.0000	0.0000
69.6	0.025992	0.0390	0.058	0.0390	0.4672	0.0000	0.0000
69.8	0.026067	0.0391	0.058	0.0391	0.4685	0.0000	0.0000
70	0.026143	0.0392	0.058	0.0392	0.4699	0.0000	0.0000
70.2	0.026219	0.0393	0.058	0.0393	0.4713	0.0000	0.0000
70.4	0.026295	0.0394	0.058	0.0394	0.4726	0.0000	0.0000
70.6	0.026371	0.0396	0.058	0.0396	0.4740	0.0000	0.0000
70.8	0.026446	0.0397	0.058	0.0397	0.4754	0.0000	0.0000
71	0.026522	0.0398	0.058	0.0398	0.4767	0.0000	0.0000
71.2	0.026598	0.0399	0.058	0.0399	0.4781	0.0000	0.0000
71.4	0.026674	0.0400	0.058	0.0400	0.4794	0.0000	0.0000
71.6	0.02675	0.0401	0.058	0.0401	0.4808	0.0000	0.0000
71.8	0.026826	0.0402	0.058	0.0402	0.4822	0.0000	0.0000
72	0.026902	0.0404	0.058	0.0404	0.4835	0.0000	0.0000
72.2	0.026978	0.0405	0.058	0.0405	0.4849	0.0000	0.0000
72.4	0.027053	0.0406	0.058	0.0406	0.4863	0.0000	0.0000
72.6	0.027129	0.0407	0.058	0.0407	0.4876	0.0000	0.0000
72.8	0.027205	0.0408	0.058	0.0408	0.4890	0.0000	0.0000
73	0.027281	0.0409	0.058	0.0409	0.4904	0.0000	0.0000
73.2	0.027357	0.0410	0.058	0.0410	0.4917	0.0000	0.0000
73.4	0.027433	0.0411	0.058	0.0411	0.4931	0.0000	0.0000
73.6	0.027509	0.0413	0.058	0.0413	0.4945	0.0000	0.0000

73.8	0.027585	0.0414	0.058	0.0414	0.4958	0.0000	0.0000
74	0.027661	0.0415	0.058	0.0415	0.4972	0.0000	0.0000
74.2	0.027737	0.0416	0.058	0.0416	0.4986	0.0000	0.0000
74.4	0.027813	0.0417	0.058	0.0417	0.4999	0.0000	0.0000
74.6	0.027889	0.0418	0.058	0.0418	0.5013	0.0000	0.0000
74.8	0.027965	0.0419	0.058	0.0419	0.5027	0.0000	0.0000
75	0.028041	0.0421	0.058	0.0421	0.5040	0.0000	0.0000
75.2	0.028117	0.0422	0.058	0.0422	0.5054	0.0000	0.0000
75.4	0.028193	0.0423	0.058	0.0423	0.5068	0.0000	0.0000
75.6	0.028268	0.0424	0.058	0.0424	0.5081	0.0000	0.0000
75.8	0.028344	0.0425	0.058	0.0425	0.5095	0.0000	0.0000
76	0.028421	0.0426	0.058	0.0426	0.5109	0.0000	0.0000
76.2	0.028497	0.0427	0.058	0.0427	0.5123	0.0000	0.0000
76.4	0.028573	0.0429	0.058	0.0429	0.5136	0.0000	0.0000
76.6	0.028649	0.0430	0.058	0.0430	0.5150	0.0000	0.0000
76.8	0.028725	0.0431	0.058	0.0431	0.5164	0.0000	0.0000
77	0.028801	0.0432	0.058	0.0432	0.5177	0.0000	0.0000
77.2	0.028877	0.0433	0.058	0.0433	0.5191	0.0000	0.0000
77.4	0.028953	0.0434	0.058	0.0434	0.5205	0.0000	0.0000
77.6	0.029029	0.0435	0.058	0.0435	0.5218	0.0000	0.0000
77.8	0.029105	0.0437	0.058	0.0437	0.5232	0.0000	0.0000
78	0.029181	0.0438	0.058	0.0438	0.5246	0.0000	0.0000
78.2	0.029257	0.0439	0.058	0.0439	0.5259	0.0000	0.0000
78.4	0.029333	0.0440	0.058	0.0440	0.5273	0.0000	0.0000
78.6	0.029409	0.0441	0.058	0.0441	0.5287	0.0000	0.0000
78.8	0.029485	0.0442	0.058	0.0442	0.5301	0.0000	0.0000
79	0.029561	0.0443	0.058	0.0443	0.5314	0.0000	0.0000
79.2	0.029638	0.0445	0.058	0.0445	0.5328	0.0000	0.0000
79.4	0.029714	0.0446	0.058	0.0446	0.5342	0.0000	0.0000
79.6	0.02979	0.0447	0.058	0.0447	0.5355	0.0000	0.0000
79.8	0.029866	0.0448	0.058	0.0448	0.5369	0.0000	0.0000
80	0.029942	0.0449	0.058	0.0449	0.5383	0.0000	0.0000
80.2	0.030018	0.0450	0.058	0.0450	0.5396	0.0000	0.0000
80.4	0.030094	0.0451	0.058	0.0451	0.5410	0.0000	0.0000
80.6	0.030171	0.0453	0.058	0.0453	0.5424	0.0000	0.0000
80.8	0.030247	0.0454	0.058	0.0454	0.5438	0.0000	0.0000
81	0.030323	0.0455	0.058	0.0455	0.5451	0.0000	0.0000
81.2	0.030399	0.0456	0.058	0.0456	0.5465	0.0000	0.0000
81.4	0.030475	0.0457	0.058	0.0457	0.5479	0.0000	0.0000
81.6	0.030551	0.0458	0.058	0.0458	0.5492	0.0000	0.0000
81.8	0.030628	0.0459	0.058	0.0459	0.5506	0.0000	0.0000
82	0.030704	0.0461	0.058	0.0461	0.5520	0.0000	0.0000
82.2	0.03078	0.0462	0.058	0.0462	0.5534	0.0000	0.0000
82.4	0.030856	0.0463	0.058	0.0463	0.5547	0.0000	0.0000
82.6	0.030932	0.0464	0.058	0.0464	0.5561	0.0000	0.0000
82.8	0.031009	0.0465	0.058	0.0465	0.5575	0.0000	0.0000
83	0.031085	0.0466	0.058	0.0466	0.5588	0.0000	0.0000

83.2	0.031161	0.0467	0.058	0.0467	0.5602	0.0000	0.0000
83.4	0.031237	0.0469	0.058	0.0469	0.5616	0.0000	0.0000
83.6	0.031314	0.0470	0.058	0.0470	0.5630	0.0000	0.0000
83.8	0.03139	0.0471	0.058	0.0471	0.5643	0.0000	0.0000
84	0.031466	0.0472	0.058	0.0472	0.5657	0.0000	0.0000
84.2	0.031543	0.0473	0.058	0.0473	0.5671	0.0000	0.0000
84.4	0.031619	0.0474	0.058	0.0474	0.5685	0.0000	0.0000
84.6	0.031695	0.0475	0.058	0.0475	0.5698	0.0000	0.0000
84.8	0.031771	0.0477	0.058	0.0477	0.5712	0.0000	0.0000
85	0.031848	0.0478	0.058	0.0478	0.5726	0.0000	0.0000
85.2	0.031924	0.0479	0.058	0.0479	0.5739	0.0000	0.0000
85.4	0.032	0.0480	0.058	0.0480	0.5753	0.0000	0.0000
85.6	0.032077	0.0481	0.058	0.0481	0.5767	0.0000	0.0000
85.8	0.032153	0.0482	0.058	0.0482	0.5781	0.0000	0.0000
86	0.032229	0.0483	0.058	0.0483	0.5794	0.0000	0.0000
86.2	0.032306	0.0485	0.058	0.0485	0.5808	0.0000	0.0000
86.4	0.032382	0.0486	0.058	0.0486	0.5822	0.0000	0.0000
86.6	0.032458	0.0487	0.058	0.0487	0.5836	0.0000	0.0000
86.8	0.032535	0.0488	0.058	0.0488	0.5849	0.0000	0.0000
87	0.032611	0.0489	0.058	0.0489	0.5863	0.0000	0.0000
87.2	0.032688	0.0490	0.058	0.0490	0.5877	0.0000	0.0000
87.4	0.032764	0.0491	0.058	0.0491	0.5891	0.0000	0.0000
87.6	0.03284	0.0493	0.058	0.0493	0.5904	0.0000	0.0000
87.8	0.032917	0.0494	0.058	0.0494	0.5918	0.0000	0.0000
88	0.032993	0.0495	0.058	0.0495	0.5932	0.0000	0.0000
88.2	0.03307	0.0496	0.058	0.0496	0.5946	0.0000	0.0000
88.4	0.033146	0.0497	0.058	0.0497	0.5959	0.0000	0.0000
88.6	0.033222	0.0498	0.058	0.0498	0.5973	0.0000	0.0000
88.8	0.033299	0.0499	0.058	0.0499	0.5987	0.0000	0.0000
89	0.033375	0.0501	0.058	0.0501	0.6001	0.0000	0.0000
89.2	0.033452	0.0502	0.058	0.0502	0.6014	0.0000	0.0000
89.4	0.033528	0.0503	0.058	0.0503	0.6028	0.0000	0.0000
89.6	0.033605	0.0504	0.058	0.0504	0.6042	0.0000	0.0000
89.8	0.033681	0.0505	0.058	0.0505	0.6056	0.0000	0.0000
90	0.033758	0.0506	0.058	0.0506	0.6069	0.0000	0.0000
90.2	0.033834	0.0508	0.058	0.0508	0.6083	0.0000	0.0000
90.4	0.033911	0.0509	0.058	0.0509	0.6097	0.0000	0.0000
90.6	0.033987	0.0510	0.058	0.0510	0.6111	0.0000	0.0000
90.8	0.034064	0.0511	0.058	0.0511	0.6125	0.0000	0.0000
91	0.03414	0.0512	0.058	0.0512	0.6138	0.0000	0.0000
91.2	0.034217	0.0513	0.058	0.0513	0.6152	0.0000	0.0000
91.4	0.034293	0.0514	0.058	0.0514	0.6166	0.0000	0.0000
91.6	0.03437	0.0516	0.058	0.0516	0.6180	0.0000	0.0000
91.8	0.034446	0.0517	0.058	0.0517	0.6193	0.0000	0.0000
92	0.034523	0.0518	0.058	0.0518	0.6207	0.0000	0.0000
92.2	0.034599	0.0519	0.058	0.0519	0.6221	0.0000	0.0000
92.4	0.034676	0.0520	0.058	0.0520	0.6235	0.0000	0.0000

92.6	0.034752	0.0521	0.058	0.0521	0.6249	0.0000	0.0000
92.8	0.034829	0.0522	0.058	0.0522	0.6262	0.0000	0.0000
93	0.034906	0.0524	0.058	0.0524	0.6276	0.0000	0.0000
93.2	0.034982	0.0525	0.058	0.0525	0.6290	0.0000	0.0000
93.4	0.035059	0.0526	0.058	0.0526	0.6304	0.0000	0.0000
93.6	0.035135	0.0527	0.058	0.0527	0.6317	0.0000	0.0000
93.8	0.035212	0.0528	0.058	0.0528	0.6331	0.0000	0.0000
94	0.035289	0.0529	0.058	0.0529	0.6345	0.0000	0.0000
94.2	0.035365	0.0530	0.058	0.0530	0.6359	0.0000	0.0000
94.4	0.035442	0.0532	0.058	0.0532	0.6373	0.0000	0.0000
94.6	0.035518	0.0533	0.058	0.0533	0.6386	0.0000	0.0000
94.8	0.035595	0.0534	0.058	0.0534	0.6400	0.0000	0.0000
95	0.035672	0.0535	0.058	0.0535	0.6414	0.0000	0.0000
95.2	0.035748	0.0536	0.058	0.0536	0.6428	0.0000	0.0000
95.4	0.035825	0.0537	0.058	0.0537	0.6442	0.0000	0.0000
95.6	0.035902	0.0539	0.058	0.0539	0.6455	0.0000	0.0000
95.8	0.035978	0.0540	0.058	0.0540	0.6469	0.0000	0.0000
96	0.036055	0.0541	0.058	0.0541	0.6483	0.0000	0.0000
96.2	0.036132	0.0542	0.058	0.0542	0.6497	0.0000	0.0000
96.4	0.036208	0.0543	0.058	0.0543	0.6511	0.0000	0.0000
96.6	0.036285	0.0544	0.058	0.0544	0.6524	0.0000	0.0000
96.8	0.036362	0.0545	0.058	0.0545	0.6538	0.0000	0.0000
97	0.036439	0.0547	0.058	0.0547	0.6552	0.0000	0.0000
97.2	0.036515	0.0548	0.058	0.0548	0.6566	0.0000	0.0000
97.4	0.036592	0.0549	0.058	0.0549	0.6580	0.0000	0.0000
97.6	0.036669	0.0550	0.058	0.0550	0.6593	0.0000	0.0000
97.8	0.036746	0.0551	0.058	0.0551	0.6607	0.0000	0.0000
98	0.036822	0.0552	0.058	0.0552	0.6621	0.0000	0.0000
98.2	0.036899	0.0553	0.058	0.0553	0.6635	0.0000	0.0000
98.4	0.036976	0.0555	0.058	0.0555	0.6649	0.0000	0.0000
98.6	0.037053	0.0556	0.058	0.0556	0.6663	0.0000	0.0000
98.8	0.037129	0.0557	0.058	0.0557	0.6676	0.0000	0.0000
99	0.037206	0.0558	0.058	0.0558	0.6690	0.0000	0.0000
99.2	0.037283	0.0559	0.058	0.0559	0.6704	0.0000	0.0000
99.4	0.03736	0.0560	0.058	0.0560	0.6718	0.0000	0.0000
99.6	0.037436	0.0562	0.058	0.0562	0.6732	0.0000	0.0000
99.8	0.037513	0.0563	0.058	0.0563	0.6745	0.0000	0.0000
100	0.03759	0.0564	0.058	0.0564	0.6759	0.0000	0.0000
100.2	0.037667	0.0565	0.058	0.0565	0.6773	0.0000	0.0000
100.4	0.037744	0.0566	0.058	0.0566	0.6787	0.0000	0.0000
100.6	0.037821	0.0567	0.058	0.0567	0.6801	0.0000	0.0000
100.8	0.037897	0.0568	0.058	0.0568	0.6815	0.0000	0.0000
101	0.037974	0.0570	0.058	0.0570	0.6828	0.0000	0.0000
101.2	0.038051	0.0571	0.058	0.0571	0.6842	0.0000	0.0000
101.4	0.038128	0.0572	0.058	0.0572	0.6856	0.0000	0.0000
101.6	0.038205	0.0573	0.058	0.0573	0.6870	0.0000	0.0000
101.8	0.038282	0.0574	0.058	0.0574	0.6884	0.0000	0.0000

102	0.038359	0.0575	0.058	0.0575	0.6898	0.0000	0.0000
102.2	0.038436	0.0577	0.058	0.0577	0.6911	0.0000	0.0000
102.4	0.038512	0.0578	0.058	0.0578	0.6925	0.0000	0.0000
102.6	0.038589	0.0579	0.058	0.0579	0.6938	0.0000	0.0001
102.8	0.038666	0.0580	0.058	0.0579	0.6944	0.0001	0.0009
103	0.038743	0.0581	0.058	0.0579	0.6944	0.0002	0.0022
103.2	0.03882	0.0582	0.058	0.0579	0.6944	0.0004	0.0036
103.4	0.038897	0.0583	0.058	0.0579	0.6944	0.0005	0.0050
103.6	0.038974	0.0585	0.058	0.0579	0.6944	0.0006	0.0064
103.8	0.039051	0.0586	0.058	0.0579	0.6944	0.0007	0.0078
104	0.039128	0.0587	0.058	0.0579	0.6944	0.0008	0.0092
104.2	0.039205	0.0588	0.058	0.0579	0.6944	0.0009	0.0106
104.4	0.039282	0.0589	0.058	0.0579	0.6944	0.0011	0.0119
104.6	0.039359	0.0590	0.058	0.0579	0.6944	0.0012	0.0133
104.8	0.039436	0.0592	0.058	0.0579	0.6944	0.0013	0.0147
105	0.039513	0.0593	0.058	0.0579	0.6944	0.0014	0.0161
105.2	0.03959	0.0594	0.058	0.0579	0.6944	0.0015	0.0175
105.4	0.039667	0.0595	0.058	0.0579	0.6944	0.0016	0.0189
105.6	0.039744	0.0596	0.058	0.0579	0.6944	0.0017	0.0203
105.8	0.039821	0.0597	0.058	0.0579	0.6944	0.0019	0.0216
106	0.039898	0.0598	0.058	0.0579	0.6944	0.0020	0.0230
106.2	0.039975	0.0600	0.058	0.0579	0.6944	0.0021	0.0244
106.4	0.040052	0.0601	0.058	0.0579	0.6944	0.0022	0.0258
106.6	0.040129	0.0602	0.058	0.0579	0.6944	0.0023	0.0272
106.8	0.040206	0.0603	0.058	0.0579	0.6944	0.0024	0.0286
107	0.040283	0.0604	0.058	0.0579	0.6944	0.0026	0.0300
107.2	0.04036	0.0605	0.058	0.0579	0.6944	0.0027	0.0313
107.4	0.040437	0.0607	0.058	0.0579	0.6944	0.0028	0.0327
107.6	0.040514	0.0608	0.058	0.0579	0.6944	0.0029	0.0341
107.8	0.040591	0.0609	0.058	0.0579	0.6944	0.0030	0.0355
108	0.040668	0.0610	0.058	0.0579	0.6944	0.0031	0.0369
108.2	0.040746	0.0611	0.058	0.0579	0.6944	0.0032	0.0383
108.4	0.040823	0.0612	0.058	0.0579	0.6944	0.0034	0.0397
108.6	0.0409	0.0613	0.058	0.0579	0.6944	0.0035	0.0411
108.8	0.040977	0.0615	0.058	0.0579	0.6944	0.0036	0.0424
109	0.041054	0.0616	0.058	0.0579	0.6944	0.0037	0.0438
109.2	0.041131	0.0617	0.058	0.0579	0.6944	0.0038	0.0452
109.4	0.041208	0.0618	0.058	0.0579	0.6944	0.0039	0.0466
109.6	0.041285	0.0619	0.058	0.0579	0.6944	0.0041	0.0480
109.8	0.041363	0.0620	0.058	0.0579	0.6944	0.0042	0.0494
110	0.04144	0.0622	0.058	0.0579	0.6944	0.0043	0.0508
110.2	0.041517	0.0623	0.058	0.0579	0.6944	0.0044	0.0522
110.4	0.041594	0.0624	0.058	0.0579	0.6944	0.0045	0.0536
110.6	0.041671	0.0625	0.058	0.0579	0.6944	0.0046	0.0549
110.8	0.041749	0.0626	0.058	0.0579	0.6944	0.0048	0.0563
111	0.041826	0.0627	0.058	0.0579	0.6944	0.0049	0.0577
111.2	0.041903	0.0629	0.058	0.0579	0.6944	0.0050	0.0591

111.4	0.04198	0.0630	0.058	0.0579	0.6944	0.0051	0.0605
111.6	0.042057	0.0631	0.058	0.0579	0.6944	0.0052	0.0619
111.8	0.042135	0.0632	0.058	0.0579	0.6944	0.0053	0.0633
112	0.042212	0.0633	0.058	0.0579	0.6944	0.0054	0.0647
112.2	0.042289	0.0634	0.058	0.0579	0.6944	0.0056	0.0661
112.4	0.042366	0.0635	0.058	0.0579	0.6944	0.0057	0.0675
112.6	0.042444	0.0637	0.058	0.0579	0.6944	0.0058	0.0688
112.8	0.042521	0.0638	0.058	0.0579	0.6944	0.0059	0.0702
113	0.042598	0.0639	0.058	0.0579	0.6944	0.0060	0.0716
113.2	0.042675	0.0640	0.058	0.0579	0.6944	0.0061	0.0730
113.4	0.042753	0.0641	0.058	0.0579	0.6944	0.0063	0.0744
113.6	0.04283	0.0642	0.058	0.0579	0.6944	0.0064	0.0758
113.8	0.042907	0.0644	0.058	0.0579	0.6944	0.0065	0.0772
114	0.042985	0.0645	0.058	0.0579	0.6944	0.0066	0.0786
114.2	0.043062	0.0646	0.058	0.0579	0.6944	0.0067	0.0800
114.4	0.043139	0.0647	0.058	0.0579	0.6944	0.0068	0.0814
114.6	0.043216	0.0648	0.058	0.0579	0.6944	0.0070	0.0828
114.8	0.043294	0.0649	0.058	0.0579	0.6944	0.0071	0.0841
115	0.043371	0.0651	0.058	0.0579	0.6944	0.0072	0.0855
115.2	0.043448	0.0652	0.058	0.0579	0.6944	0.0073	0.0869
115.4	0.043526	0.0653	0.058	0.0579	0.6944	0.0074	0.0883
115.6	0.043603	0.0654	0.058	0.0579	0.6944	0.0075	0.0897
115.8	0.043681	0.0655	0.058	0.0579	0.6944	0.0077	0.0911
116	0.043758	0.0656	0.058	0.0579	0.6944	0.0078	0.0925
116.2	0.043835	0.0658	0.058	0.0579	0.6944	0.0079	0.0939
116.4	0.043913	0.0659	0.058	0.0579	0.6944	0.0080	0.0953
116.6	0.04399	0.0660	0.058	0.0579	0.6944	0.0081	0.0967
116.8	0.044067	0.0661	0.058	0.0579	0.6944	0.0082	0.0981
117	0.044145	0.0662	0.058	0.0579	0.6944	0.0083	0.0995
117.2	0.044222	0.0663	0.058	0.0579	0.6944	0.0085	0.1009
117.4	0.0443	0.0664	0.058	0.0579	0.6944	0.0086	0.1023
117.6	0.044377	0.0666	0.058	0.0579	0.6944	0.0087	0.1036
117.8	0.044455	0.0667	0.058	0.0579	0.6944	0.0088	0.1050
118	0.044532	0.0668	0.058	0.0579	0.6944	0.0089	0.1064
118.2	0.044609	0.0669	0.058	0.0579	0.6944	0.0090	0.1078
118.4	0.044687	0.0670	0.058	0.0579	0.6944	0.0092	0.1092
118.6	0.044764	0.0671	0.058	0.0579	0.6944	0.0093	0.1106
118.8	0.044842	0.0673	0.058	0.0579	0.6944	0.0094	0.1120
119	0.044919	0.0674	0.058	0.0579	0.6944	0.0095	0.1134
119.2	0.044997	0.0675	0.058	0.0579	0.6944	0.0096	0.1148
119.4	0.045074	0.0676	0.058	0.0579	0.6944	0.0097	0.1162
119.6	0.045152	0.0677	0.058	0.0579	0.6944	0.0099	0.1176
119.8	0.045229	0.0678	0.058	0.0579	0.6944	0.0100	0.1190
120	0.045307	0.0680	0.058	0.0579	0.6944	0.0101	0.1204
120.2	0.045384	0.0681	0.058	0.0579	0.6944	0.0102	0.1218
120.4	0.045462	0.0682	0.058	0.0579	0.6944	0.0103	0.1232
120.6	0.045539	0.0683	0.058	0.0579	0.6944	0.0104	0.1246

120.8	0.045617	0.0684	0.058	0.0579	0.6944	0.0106	0.1260
121	0.045695	0.0685	0.058	0.0579	0.6944	0.0107	0.1274
121.2	0.045772	0.0687	0.058	0.0579	0.6944	0.0108	0.1288
121.4	0.04585	0.0688	0.058	0.0579	0.6944	0.0109	0.1302
121.6	0.045927	0.0689	0.058	0.0579	0.6944	0.0110	0.1315
121.8	0.046005	0.0690	0.058	0.0579	0.6944	0.0111	0.1329
122	0.046082	0.0691	0.058	0.0579	0.6944	0.0113	0.1343
122.2	0.04616	0.0692	0.058	0.0579	0.6944	0.0114	0.1357
122.4	0.046238	0.0694	0.058	0.0579	0.6944	0.0115	0.1371
122.6	0.046315	0.0695	0.058	0.0579	0.6944	0.0116	0.1385
122.8	0.046393	0.0696	0.058	0.0579	0.6944	0.0117	0.1399
123	0.04647	0.0697	0.058	0.0579	0.6944	0.0118	0.1413
123.2	0.046548	0.0698	0.058	0.0579	0.6944	0.0120	0.1427
123.4	0.046626	0.0699	0.058	0.0579	0.6944	0.0121	0.1441
123.6	0.046703	0.0701	0.058	0.0579	0.6944	0.0122	0.1455
123.8	0.046781	0.0702	0.058	0.0579	0.6944	0.0123	0.1469
124	0.046859	0.0703	0.058	0.0579	0.6944	0.0124	0.1483
124.2	0.046936	0.0704	0.058	0.0579	0.6944	0.0125	0.1497
124.4	0.047014	0.0705	0.058	0.0579	0.6944	0.0127	0.1511
124.6	0.047092	0.0706	0.058	0.0579	0.6944	0.0128	0.1525
124.8	0.047169	0.0708	0.058	0.0579	0.6944	0.0129	0.1539
125	0.047247	0.0709	0.058	0.0579	0.6944	0.0130	0.1553
125.2	0.047325	0.0710	0.058	0.0579	0.6944	0.0131	0.1567
125.4	0.047402	0.0711	0.058	0.0579	0.6944	0.0132	0.1581
125.6	0.04748	0.0712	0.058	0.0579	0.6944	0.0133	0.1595
125.8	0.047558	0.0713	0.058	0.0579	0.6944	0.0135	0.1609
126	0.047636	0.0715	0.058	0.0579	0.6944	0.0136	0.1623
126.2	0.047713	0.0716	0.058	0.0579	0.6944	0.0137	0.1637
126.4	0.047791	0.0717	0.058	0.0579	0.6944	0.0138	0.1651
126.6	0.047869	0.0718	0.058	0.0579	0.6944	0.0139	0.1665
126.8	0.047947	0.0719	0.058	0.0579	0.6944	0.0140	0.1679
127	0.048024	0.0720	0.058	0.0579	0.6944	0.0142	0.1693
127.2	0.048102	0.0722	0.058	0.0579	0.6944	0.0143	0.1707
127.4	0.04818	0.0723	0.058	0.0579	0.6944	0.0144	0.1721
127.6	0.048258	0.0724	0.058	0.0579	0.6944	0.0145	0.1735
127.8	0.048335	0.0725	0.058	0.0579	0.6944	0.0146	0.1749
128	0.048413	0.0726	0.058	0.0579	0.6944	0.0147	0.1763
128.2	0.048491	0.0727	0.058	0.0579	0.6944	0.0149	0.1777
128.4	0.048569	0.0729	0.058	0.0579	0.6944	0.0150	0.1791
128.6	0.048647	0.0730	0.058	0.0579	0.6944	0.0151	0.1805
128.8	0.048724	0.0731	0.058	0.0579	0.6944	0.0152	0.1819
129	0.048802	0.0732	0.058	0.0579	0.6944	0.0153	0.1833
129.2	0.04888	0.0733	0.058	0.0579	0.6944	0.0154	0.1847
129.4	0.048958	0.0734	0.058	0.0579	0.6944	0.0156	0.1861
129.6	0.049036	0.0736	0.058	0.0579	0.6944	0.0157	0.1875
129.8	0.049114	0.0737	0.058	0.0579	0.6944	0.0158	0.1889
130	0.049192	0.0738	0.058	0.0579	0.6944	0.0159	0.1903

130.2	0.049269	0.0739	0.058	0.0579	0.6944	0.0160	0.1917
130.4	0.049347	0.0740	0.058	0.0579	0.6944	0.0162	0.1931
130.6	0.049425	0.0741	0.058	0.0579	0.6944	0.0163	0.1945
130.8	0.049503	0.0743	0.058	0.0579	0.6944	0.0164	0.1959
131	0.049581	0.0744	0.058	0.0579	0.6944	0.0165	0.1973
131.2	0.049659	0.0745	0.058	0.0579	0.6944	0.0166	0.1987
131.4	0.049737	0.0746	0.058	0.0579	0.6944	0.0167	0.2001
131.6	0.049815	0.0747	0.058	0.0579	0.6944	0.0169	0.2015
131.8	0.049893	0.0748	0.058	0.0579	0.6944	0.0170	0.2029
132	0.049971	0.0750	0.058	0.0579	0.6944	0.0171	0.2043
132.2	0.050049	0.0751	0.058	0.0579	0.6944	0.0172	0.2057
132.4	0.050127	0.0752	0.058	0.0579	0.6944	0.0173	0.2071
132.6	0.050205	0.0753	0.058	0.0579	0.6944	0.0174	0.2085
132.8	0.050282	0.0754	0.058	0.0579	0.6944	0.0176	0.2099
133	0.05036	0.0755	0.058	0.0579	0.6944	0.0177	0.2113
133.2	0.050438	0.0757	0.058	0.0579	0.6944	0.0178	0.2127
133.4	0.050516	0.0758	0.058	0.0579	0.6944	0.0179	0.2141
133.6	0.050594	0.0759	0.058	0.0579	0.6944	0.0180	0.2156
133.8	0.050672	0.0760	0.058	0.0579	0.6944	0.0181	0.2170
134	0.05075	0.0761	0.058	0.0579	0.6944	0.0183	0.2184
134.2	0.050828	0.0762	0.058	0.0579	0.6944	0.0184	0.2198
134.4	0.050906	0.0764	0.058	0.0579	0.6944	0.0185	0.2212
134.6	0.050985	0.0765	0.058	0.0579	0.6944	0.0186	0.2226
134.8	0.051063	0.0766	0.058	0.0579	0.6944	0.0187	0.2240
135	0.051141	0.0767	0.058	0.0579	0.6944	0.0188	0.2254
135.2	0.051219	0.0768	0.058	0.0579	0.6944	0.0190	0.2268
135.4	0.051297	0.0769	0.058	0.0579	0.6944	0.0191	0.2282
135.6	0.051375	0.0771	0.058	0.0579	0.6944	0.0192	0.2296
135.8	0.051453	0.0772	0.058	0.0579	0.6944	0.0193	0.2310
136	0.051531	0.0773	0.058	0.0579	0.6944	0.0194	0.2324
136.2	0.051609	0.0774	0.058	0.0579	0.6944	0.0195	0.2338
136.4	0.051687	0.0775	0.058	0.0579	0.6944	0.0197	0.2352
136.6	0.051765	0.0776	0.058	0.0579	0.6944	0.0198	0.2366
136.8	0.051843	0.0778	0.058	0.0579	0.6944	0.0199	0.2380
137	0.051921	0.0779	0.058	0.0579	0.6944	0.0200	0.2394
137.2	0.052	0.0780	0.058	0.0579	0.6944	0.0201	0.2408
137.4	0.052078	0.0781	0.058	0.0579	0.6944	0.0202	0.2423
137.6	0.052156	0.0782	0.058	0.0579	0.6944	0.0204	0.2437
137.8	0.052234	0.0784	0.058	0.0579	0.6944	0.0205	0.2451
138	0.052312	0.0785	0.058	0.0579	0.6944	0.0206	0.2465
138.2	0.05239	0.0786	0.058	0.0579	0.6944	0.0207	0.2479
138.4	0.052469	0.0787	0.058	0.0579	0.6944	0.0208	0.2493
138.6	0.052547	0.0788	0.058	0.0579	0.6944	0.0209	0.2507
138.8	0.052625	0.0789	0.058	0.0579	0.6944	0.0211	0.2521
139	0.052703	0.0791	0.058	0.0579	0.6944	0.0212	0.2535
139.2	0.052781	0.0792	0.058	0.0579	0.6944	0.0213	0.2549
139.4	0.05286	0.0793	0.058	0.0579	0.6944	0.0214	0.2563

139.6	0.052938	0.0794	0.058	0.0579	0.6944	0.0215	0.2577
139.8	0.053016	0.0795	0.058	0.0579	0.6944	0.0217	0.2591
140	0.053094	0.0796	0.058	0.0579	0.6944	0.0218	0.2605
140.2	0.053172	0.0798	0.058	0.0579	0.6944	0.0219	0.2620
140.4	0.053251	0.0799	0.058	0.0579	0.6944	0.0220	0.2634
140.6	0.053329	0.0800	0.058	0.0579	0.6944	0.0221	0.2648
140.8	0.053407	0.0801	0.058	0.0579	0.6944	0.0222	0.2662
141	0.053485	0.0802	0.058	0.0579	0.6944	0.0224	0.2676
141.2	0.053564	0.0803	0.058	0.0579	0.6944	0.0225	0.2690
141.4	0.053642	0.0805	0.058	0.0579	0.6944	0.0226	0.2704
141.6	0.05372	0.0806	0.058	0.0579	0.6944	0.0227	0.2718
141.8	0.053799	0.0807	0.058	0.0579	0.6944	0.0228	0.2732
142	0.053877	0.0808	0.058	0.0579	0.6944	0.0229	0.2746
142.2	0.053955	0.0809	0.058	0.0579	0.6944	0.0231	0.2760
142.4	0.054034	0.0811	0.058	0.0579	0.6944	0.0232	0.2775
142.6	0.054112	0.0812	0.058	0.0579	0.6944	0.0233	0.2789
142.8	0.05419	0.0813	0.058	0.0579	0.6944	0.0234	0.2803
143	0.054268	0.0814	0.058	0.0579	0.6944	0.0235	0.2817
143.2	0.054347	0.0815	0.058	0.0579	0.6944	0.0236	0.2831
143.4	0.054425	0.0816	0.058	0.0579	0.6944	0.0238	0.2845
143.6	0.054504	0.0818	0.058	0.0579	0.6944	0.0239	0.2859
143.8	0.054582	0.0819	0.058	0.0579	0.6944	0.0240	0.2873
144	0.05466	0.0820	0.058	0.0579	0.6944	0.0241	0.2887
144.2	0.054739	0.0821	0.058	0.0579	0.6944	0.0242	0.2901
144.4	0.054817	0.0822	0.058	0.0579	0.6944	0.0244	0.2916
144.6	0.054895	0.0823	0.058	0.0579	0.6944	0.0245	0.2930
144.8	0.054974	0.0825	0.058	0.0579	0.6944	0.0246	0.2944
145	0.055052	0.0826	0.058	0.0579	0.6944	0.0247	0.2958
145.2	0.055131	0.0827	0.058	0.0579	0.6944	0.0248	0.2972
145.4	0.055209	0.0828	0.058	0.0579	0.6944	0.0249	0.2986
145.6	0.055288	0.0829	0.058	0.0579	0.6944	0.0251	0.3000
145.8	0.055366	0.0830	0.058	0.0579	0.6944	0.0252	0.3014
146	0.055444	0.0832	0.058	0.0579	0.6944	0.0253	0.3028
146.2	0.055523	0.0833	0.058	0.0579	0.6944	0.0254	0.3043
146.4	0.055601	0.0834	0.058	0.0579	0.6944	0.0255	0.3057
146.6	0.05568	0.0835	0.058	0.0579	0.6944	0.0256	0.3071
146.8	0.055758	0.0836	0.058	0.0579	0.6944	0.0258	0.3085
147	0.055837	0.0838	0.058	0.0579	0.6944	0.0259	0.3099
147.2	0.055915	0.0839	0.058	0.0579	0.6944	0.0260	0.3113
147.4	0.055994	0.0840	0.058	0.0579	0.6944	0.0261	0.3127
147.6	0.056072	0.0841	0.058	0.0579	0.6944	0.0262	0.3142
147.8	0.056151	0.0842	0.058	0.0579	0.6944	0.0264	0.3156
148	0.056229	0.0843	0.058	0.0579	0.6944	0.0265	0.3170
148.2	0.056308	0.0845	0.058	0.0579	0.6944	0.0266	0.3184
148.4	0.056386	0.0846	0.058	0.0579	0.6944	0.0267	0.3198
148.6	0.056465	0.0847	0.058	0.0579	0.6944	0.0268	0.3212
148.8	0.056544	0.0848	0.058	0.0579	0.6944	0.0269	0.3226

149	0.056622	0.0849	0.058	0.0579	0.6944	0.0271	0.3240
149.2	0.056701	0.0851	0.058	0.0579	0.6944	0.0272	0.3255
149.4	0.056779	0.0852	0.058	0.0579	0.6944	0.0273	0.3269
149.6	0.056858	0.0853	0.058	0.0579	0.6944	0.0274	0.3283
149.8	0.056936	0.0854	0.058	0.0579	0.6944	0.0275	0.3297
150	0.057015	0.0855	0.058	0.0579	0.6944	0.0277	0.3311
150.2	0.057094	0.0856	0.058	0.0579	0.6944	0.0278	0.3325
150.4	0.057172	0.0858	0.058	0.0579	0.6944	0.0279	0.3339
150.6	0.057251	0.0859	0.058	0.0579	0.6944	0.0280	0.3354
150.8	0.057329	0.0860	0.058	0.0579	0.6944	0.0281	0.3368
151	0.057408	0.0861	0.058	0.0579	0.6944	0.0282	0.3382
151.2	0.057487	0.0862	0.058	0.0579	0.6944	0.0284	0.3396
151.4	0.057565	0.0863	0.058	0.0579	0.6944	0.0285	0.3410
151.6	0.057644	0.0865	0.058	0.0579	0.6944	0.0286	0.3424
151.8	0.057723	0.0866	0.058	0.0579	0.6944	0.0287	0.3439
152	0.057801	0.0867	0.058	0.0579	0.6944	0.0288	0.3453
152.2	0.05788	0.0868	0.058	0.0579	0.6944	0.0289	0.3467
152.4	0.057959	0.0869	0.058	0.0579	0.6944	0.0291	0.3481
152.6	0.058037	0.0871	0.058	0.0579	0.6944	0.0292	0.3495
152.8	0.058116	0.0872	0.058	0.0579	0.6944	0.0293	0.3509
153	0.058195	0.0873	0.058	0.0579	0.6944	0.0294	0.3524
153.2	0.058273	0.0874	0.058	0.0579	0.6944	0.0295	0.3538
153.4	0.058352	0.0875	0.058	0.0579	0.6944	0.0297	0.3552
153.6	0.058431	0.0876	0.058	0.0579	0.6944	0.0298	0.3566
153.8	0.05851	0.0878	0.058	0.0579	0.6944	0.0299	0.3580
154	0.058588	0.0879	0.058	0.0579	0.6944	0.0300	0.3594
154.2	0.058667	0.0880	0.058	0.0579	0.6944	0.0301	0.3609
154.4	0.058746	0.0881	0.058	0.0579	0.6944	0.0302	0.3623
154.6	0.058825	0.0882	0.058	0.0579	0.6944	0.0304	0.3637
154.8	0.058903	0.0884	0.058	0.0579	0.6944	0.0305	0.3651
155	0.058982	0.0885	0.058	0.0579	0.6944	0.0306	0.3665
155.2	0.059061	0.0886	0.058	0.0579	0.6944	0.0307	0.3679
155.4	0.05914	0.0887	0.058	0.0579	0.6944	0.0308	0.3694
155.6	0.059219	0.0888	0.058	0.0579	0.6944	0.0310	0.3708
155.8	0.059297	0.0889	0.058	0.0579	0.6944	0.0311	0.3722
156	0.059376	0.0891	0.058	0.0579	0.6944	0.0312	0.3736
156.2	0.059455	0.0892	0.058	0.0579	0.6944	0.0313	0.3750
156.4	0.059534	0.0893	0.058	0.0579	0.6944	0.0314	0.3765
156.6	0.059613	0.0894	0.058	0.0579	0.6944	0.0315	0.3779
156.8	0.059692	0.0895	0.058	0.0579	0.6944	0.0317	0.3793
157	0.05977	0.0897	0.058	0.0579	0.6944	0.0318	0.3807
157.2	0.059849	0.0898	0.058	0.0579	0.6944	0.0319	0.3821
157.4	0.059928	0.0899	0.058	0.0579	0.6944	0.0320	0.3836
157.6	0.060007	0.0900	0.058	0.0579	0.6944	0.0321	0.3850
157.8	0.060086	0.0901	0.058	0.0579	0.6944	0.0323	0.3864
158	0.060165	0.0902	0.058	0.0579	0.6944	0.0324	0.3878
158.2	0.060244	0.0904	0.058	0.0579	0.6944	0.0325	0.3892

158.4	0.060323	0.0905	0.058	0.0579	0.6944	0.0326	0.3907
158.6	0.060402	0.0906	0.058	0.0579	0.6944	0.0327	0.3921
158.8	0.060481	0.0907	0.058	0.0579	0.6944	0.0329	0.3935
159	0.060559	0.0908	0.058	0.0579	0.6944	0.0330	0.3949
159.2	0.060638	0.0910	0.058	0.0579	0.6944	0.0331	0.3963
159.4	0.060717	0.0911	0.058	0.0579	0.6944	0.0332	0.3978
159.6	0.060796	0.0912	0.058	0.0579	0.6944	0.0333	0.3992
159.8	0.060875	0.0913	0.058	0.0579	0.6944	0.0334	0.4006
160	0.060954	0.0914	0.058	0.0579	0.6944	0.0336	0.4020
160.2	0.061033	0.0915	0.058	0.0579	0.6944	0.0337	0.4034
160.4	0.061112	0.0917	0.058	0.0579	0.6944	0.0338	0.4049
160.6	0.061191	0.0918	0.058	0.0579	0.6944	0.0339	0.4063
160.8	0.06127	0.0919	0.058	0.0579	0.6944	0.0340	0.4077
161	0.061349	0.0920	0.058	0.0579	0.6944	0.0342	0.4091
161.2	0.061428	0.0921	0.058	0.0579	0.6944	0.0343	0.4106
161.4	0.061507	0.0923	0.058	0.0579	0.6944	0.0344	0.4120
161.6	0.061586	0.0924	0.058	0.0579	0.6944	0.0345	0.4134
161.8	0.061665	0.0925	0.058	0.0579	0.6944	0.0346	0.4148
162	0.061744	0.0926	0.058	0.0579	0.6944	0.0347	0.4162
162.2	0.061823	0.0927	0.058	0.0579	0.6944	0.0349	0.4177
162.4	0.061902	0.0929	0.058	0.0579	0.6944	0.0350	0.4191
162.6	0.061981	0.0930	0.058	0.0579	0.6944	0.0351	0.4205
162.8	0.062061	0.0931	0.058	0.0579	0.6944	0.0352	0.4219
163	0.06214	0.0932	0.058	0.0579	0.6944	0.0353	0.4234
163.2	0.062219	0.0933	0.058	0.0579	0.6944	0.0355	0.4248
163.4	0.062298	0.0934	0.058	0.0579	0.6944	0.0356	0.4262
163.6	0.062377	0.0936	0.058	0.0579	0.6944	0.0357	0.4276
163.8	0.062456	0.0937	0.058	0.0579	0.6944	0.0358	0.4291
164	0.062535	0.0938	0.058	0.0579	0.6944	0.0359	0.4305
164.2	0.062614	0.0939	0.058	0.0579	0.6944	0.0361	0.4319
164.4	0.062693	0.0940	0.058	0.0579	0.6944	0.0362	0.4333
164.6	0.062772	0.0942	0.058	0.0579	0.6944	0.0363	0.4347
164.8	0.062852	0.0943	0.058	0.0579	0.6944	0.0364	0.4362
165	0.062931	0.0944	0.058	0.0579	0.6944	0.0365	0.4376
165.2	0.06301	0.0945	0.058	0.0579	0.6944	0.0366	0.4390
165.4	0.063089	0.0946	0.058	0.0579	0.6944	0.0368	0.4404
165.6	0.063168	0.0948	0.058	0.0579	0.6944	0.0369	0.4419
165.8	0.063247	0.0949	0.058	0.0579	0.6944	0.0370	0.4433
166	0.063327	0.0950	0.058	0.0579	0.6944	0.0371	0.4447
166.2	0.063406	0.0951	0.058	0.0579	0.6944	0.0372	0.4461
166.4	0.063485	0.0952	0.058	0.0579	0.6944	0.0374	0.4476
166.6	0.063564	0.0953	0.058	0.0579	0.6944	0.0375	0.4490
166.8	0.063644	0.0955	0.058	0.0579	0.6944	0.0376	0.4504
167	0.063723	0.0956	0.058	0.0579	0.6944	0.0377	0.4519
167.2	0.063802	0.0957	0.058	0.0579	0.6944	0.0378	0.4533
167.4	0.063881	0.0958	0.058	0.0579	0.6944	0.0380	0.4547
167.6	0.06396	0.0959	0.058	0.0579	0.6944	0.0381	0.4561

167.8	0.06404	0.0961	0.058	0.0579	0.6944	0.0382	0.4576
168	0.064119	0.0962	0.058	0.0579	0.6944	0.0383	0.4590
168.2	0.064198	0.0963	0.058	0.0579	0.6944	0.0384	0.4604
168.4	0.064278	0.0964	0.058	0.0579	0.6944	0.0385	0.4618
168.6	0.064357	0.0965	0.058	0.0579	0.6944	0.0387	0.4633
168.8	0.064436	0.0967	0.058	0.0579	0.6944	0.0388	0.4647
169	0.064515	0.0968	0.058	0.0579	0.6944	0.0389	0.4661
169.2	0.064595	0.0969	0.058	0.0579	0.6944	0.0390	0.4675
169.4	0.064674	0.0970	0.058	0.0579	0.6944	0.0391	0.4690
169.6	0.064753	0.0971	0.058	0.0579	0.6944	0.0393	0.4704
169.8	0.064833	0.0972	0.058	0.0579	0.6944	0.0394	0.4718
170	0.064912	0.0974	0.058	0.0579	0.6944	0.0395	0.4733
170.2	0.064991	0.0975	0.058	0.0579	0.6944	0.0396	0.4747
170.4	0.065071	0.0976	0.058	0.0579	0.6944	0.0397	0.4761
170.6	0.06515	0.0977	0.058	0.0579	0.6944	0.0399	0.4775
170.8	0.06523	0.0978	0.058	0.0579	0.6944	0.0400	0.4790
171	0.065309	0.0980	0.058	0.0579	0.6944	0.0401	0.4804
171.2	0.065388	0.0981	0.058	0.0579	0.6944	0.0402	0.4818
171.4	0.065468	0.0982	0.058	0.0579	0.6944	0.0403	0.4833
171.6	0.065547	0.0983	0.058	0.0579	0.6944	0.0405	0.4847
171.8	0.065627	0.0984	0.058	0.0579	0.6944	0.0406	0.4861
172	0.065706	0.0986	0.058	0.0579	0.6944	0.0407	0.4875
172.2	0.065785	0.0987	0.058	0.0579	0.6944	0.0408	0.4890
172.4	0.065865	0.0988	0.058	0.0579	0.6944	0.0409	0.4904
172.6	0.065944	0.0989	0.058	0.0579	0.6944	0.0410	0.4918
172.8	0.066024	0.0990	0.058	0.0579	0.6944	0.0412	0.4933
173	0.066103	0.0992	0.058	0.0579	0.6944	0.0413	0.4947
173.2	0.066183	0.0993	0.058	0.0579	0.6944	0.0414	0.4961
173.4	0.066262	0.0994	0.058	0.0579	0.6944	0.0415	0.4976
173.6	0.066342	0.0995	0.058	0.0579	0.6944	0.0416	0.4990
173.8	0.066421	0.0996	0.058	0.0579	0.6944	0.0418	0.5004
174	0.066501	0.0998	0.058	0.0579	0.6944	0.0419	0.5019
174.2	0.06658	0.0999	0.058	0.0579	0.6944	0.0420	0.5033
174.4	0.06666	0.1000	0.058	0.0579	0.6944	0.0421	0.5047
174.6	0.066739	0.1001	0.058	0.0579	0.6944	0.0422	0.5061
174.8	0.066819	0.1002	0.058	0.0579	0.6944	0.0424	0.5076
175	0.066898	0.1003	0.058	0.0579	0.6944	0.0425	0.5090
175.2	0.066978	0.1005	0.058	0.0579	0.6944	0.0426	0.5104
175.4	0.067057	0.1006	0.058	0.0579	0.6944	0.0427	0.5119
175.6	0.067137	0.1007	0.058	0.0579	0.6944	0.0428	0.5133
175.8	0.067216	0.1008	0.058	0.0579	0.6944	0.0430	0.5147
176	0.067296	0.1009	0.058	0.0579	0.6944	0.0431	0.5162
176.2	0.067376	0.1011	0.058	0.0579	0.6944	0.0432	0.5176
176.4	0.067455	0.1012	0.058	0.0579	0.6944	0.0433	0.5190
176.6	0.067535	0.1013	0.058	0.0579	0.6944	0.0434	0.5205
176.8	0.067614	0.1014	0.058	0.0579	0.6944	0.0436	0.5219
177	0.067694	0.1015	0.058	0.0579	0.6944	0.0437	0.5233

177.2	0.067774	0.1017	0.058	0.0579	0.6944	0.0438	0.5248
177.4	0.067853	0.1018	0.058	0.0579	0.6944	0.0439	0.5262
177.6	0.067933	0.1019	0.058	0.0579	0.6944	0.0440	0.5276
177.8	0.068012	0.1020	0.058	0.0579	0.6944	0.0441	0.5291
178	0.068092	0.1021	0.058	0.0579	0.6944	0.0443	0.5305
178.2	0.068172	0.1023	0.058	0.0579	0.6944	0.0444	0.5319
178.4	0.068251	0.1024	0.058	0.0579	0.6944	0.0445	0.5334
178.6	0.068331	0.1025	0.058	0.0579	0.6944	0.0446	0.5348
178.8	0.068411	0.1026	0.058	0.0579	0.6944	0.0447	0.5362
179	0.06849	0.1027	0.058	0.0579	0.6944	0.0449	0.5377
179.2	0.06857	0.1029	0.058	0.0579	0.6944	0.0450	0.5391
179.4	0.06865	0.1030	0.058	0.0579	0.6944	0.0451	0.5405
179.6	0.06873	0.1031	0.058	0.0579	0.6944	0.0452	0.5420
179.8	0.068809	0.1032	0.058	0.0579	0.6944	0.0453	0.5434
180	0.068889	0.1033	0.058	0.0579	0.6944	0.0455	0.5448
180.2	0.068969	0.1035	0.058	0.0579	0.6944	0.0456	0.5463
180.4	0.069049	0.1036	0.058	0.0579	0.6944	0.0457	0.5477
180.6	0.069128	0.1037	0.058	0.0579	0.6944	0.0458	0.5491
180.8	0.069208	0.1038	0.058	0.0579	0.6944	0.0459	0.5506
181	0.069288	0.1039	0.058	0.0579	0.6944	0.0461	0.5520
181.2	0.069368	0.1041	0.058	0.0579	0.6944	0.0462	0.5535
181.4	0.069447	0.1042	0.058	0.0579	0.6944	0.0463	0.5549
181.6	0.069527	0.1043	0.058	0.0579	0.6944	0.0464	0.5563
181.8	0.069607	0.1044	0.058	0.0579	0.6944	0.0465	0.5578
182	0.069687	0.1045	0.058	0.0579	0.6944	0.0467	0.5592
182.2	0.069767	0.1046	0.058	0.0579	0.6944	0.0468	0.5606
182.4	0.069846	0.1048	0.058	0.0579	0.6944	0.0469	0.5621
182.6	0.069926	0.1049	0.058	0.0579	0.6944	0.0470	0.5635
182.8	0.070006	0.1050	0.058	0.0579	0.6944	0.0471	0.5649
183	0.070086	0.1051	0.058	0.0579	0.6944	0.0473	0.5664
183.2	0.070166	0.1052	0.058	0.0579	0.6944	0.0474	0.5678
183.4	0.070246	0.1054	0.058	0.0579	0.6944	0.0475	0.5693
183.6	0.070325	0.1055	0.058	0.0579	0.6944	0.0476	0.5707
183.8	0.070405	0.1056	0.058	0.0579	0.6944	0.0477	0.5721
184	0.070485	0.1057	0.058	0.0579	0.6944	0.0479	0.5736
184.2	0.070565	0.1058	0.058	0.0579	0.6944	0.0480	0.5750
184.4	0.070645	0.1060	0.058	0.0579	0.6944	0.0481	0.5764
184.6	0.070725	0.1061	0.058	0.0579	0.6944	0.0482	0.5779
184.8	0.070805	0.1062	0.058	0.0579	0.6944	0.0483	0.5793
185	0.070885	0.1063	0.058	0.0579	0.6944	0.0485	0.5808
185.2	0.070965	0.1064	0.058	0.0579	0.6944	0.0486	0.5822
185.4	0.071045	0.1066	0.058	0.0579	0.6944	0.0487	0.5836
185.6	0.071125	0.1067	0.058	0.0579	0.6944	0.0488	0.5851
185.8	0.071204	0.1068	0.058	0.0579	0.6944	0.0489	0.5865
186	0.071284	0.1069	0.058	0.0579	0.6944	0.0491	0.5880
186.2	0.071364	0.1070	0.058	0.0579	0.6944	0.0492	0.5894
186.4	0.071444	0.1072	0.058	0.0579	0.6944	0.0493	0.5908

186.6	0.071524	0.1073	0.058	0.0579	0.6944	0.0494	0.5923
186.8	0.071604	0.1074	0.058	0.0579	0.6944	0.0495	0.5937
187	0.071684	0.1075	0.058	0.0579	0.6944	0.0497	0.5952
187.2	0.071764	0.1076	0.058	0.0579	0.6944	0.0498	0.5966
187.4	0.071844	0.1078	0.058	0.0579	0.6944	0.0499	0.5980
187.6	0.071924	0.1079	0.058	0.0579	0.6944	0.0500	0.5995
187.8	0.072004	0.1080	0.058	0.0579	0.6944	0.0501	0.6009
188	0.072084	0.1081	0.058	0.0579	0.6944	0.0503	0.6024
188.2	0.072164	0.1082	0.058	0.0579	0.6944	0.0504	0.6038
188.4	0.072245	0.1084	0.058	0.0579	0.6944	0.0505	0.6052
188.6	0.072325	0.1085	0.058	0.0579	0.6944	0.0506	0.6067
188.8	0.072405	0.1086	0.058	0.0579	0.6944	0.0507	0.6081
189	0.072485	0.1087	0.058	0.0579	0.6944	0.0509	0.6096
189.2	0.072565	0.1088	0.058	0.0579	0.6944	0.0510	0.6110
189.4	0.072645	0.1090	0.058	0.0579	0.6944	0.0511	0.6124
189.6	0.072725	0.1091	0.058	0.0579	0.6944	0.0512	0.6139
189.8	0.072805	0.1092	0.058	0.0579	0.6944	0.0513	0.6153
190	0.072885	0.1093	0.058	0.0579	0.6944	0.0515	0.6168
190.2	0.072965	0.1094	0.058	0.0579	0.6944	0.0516	0.6182
190.4	0.073045	0.1096	0.058	0.0579	0.6944	0.0517	0.6197
190.6	0.073126	0.1097	0.058	0.0579	0.6944	0.0518	0.6211
190.8	0.073206	0.1098	0.058	0.0579	0.6944	0.0519	0.6225
191	0.073286	0.1099	0.058	0.0579	0.6944	0.0521	0.6240
191.2	0.073366	0.1100	0.058	0.0579	0.6944	0.0522	0.6254
191.4	0.073446	0.1102	0.058	0.0579	0.6944	0.0523	0.6269
191.6	0.073526	0.1103	0.058	0.0579	0.6944	0.0524	0.6283
191.8	0.073607	0.1104	0.058	0.0579	0.6944	0.0525	0.6298
192	0.073687	0.1105	0.058	0.0579	0.6944	0.0527	0.6312
192.2	0.073767	0.1107	0.058	0.0579	0.6944	0.0528	0.6326
192.4	0.073847	0.1108	0.058	0.0579	0.6944	0.0529	0.6341
192.6	0.073927	0.1109	0.058	0.0579	0.6944	0.0530	0.6355
192.8	0.074008	0.1110	0.058	0.0579	0.6944	0.0531	0.6370
193	0.074088	0.1111	0.058	0.0579	0.6944	0.0533	0.6384
193.2	0.074168	0.1113	0.058	0.0579	0.6944	0.0534	0.6399
193.4	0.074248	0.1114	0.058	0.0579	0.6944	0.0535	0.6413
193.6	0.074329	0.1115	0.058	0.0579	0.6944	0.0536	0.6427
193.8	0.074409	0.1116	0.058	0.0579	0.6944	0.0537	0.6442
194	0.074489	0.1117	0.058	0.0579	0.6944	0.0539	0.6456
194.2	0.074569	0.1119	0.058	0.0579	0.6944	0.0540	0.6471
194.4	0.07465	0.1120	0.058	0.0579	0.6944	0.0541	0.6485
194.6	0.07473	0.1121	0.058	0.0579	0.6944	0.0542	0.6500
194.8	0.07481	0.1122	0.058	0.0579	0.6944	0.0543	0.6514
195	0.074891	0.1123	0.058	0.0579	0.6944	0.0545	0.6529
195.2	0.074971	0.1125	0.058	0.0579	0.6944	0.0546	0.6543
195.4	0.075051	0.1126	0.058	0.0579	0.6944	0.0547	0.6558
195.6	0.075132	0.1127	0.058	0.0579	0.6944	0.0548	0.6572
195.8	0.075212	0.1128	0.058	0.0579	0.6944	0.0549	0.6586

196	0.075292	0.1129	0.058	0.0579	0.6944	0.0551	0.6601
196.2	0.075373	0.1131	0.058	0.0579	0.6944	0.0552	0.6615
196.4	0.075453	0.1132	0.058	0.0579	0.6944	0.0553	0.6630
196.6	0.075533	0.1133	0.058	0.0579	0.6944	0.0554	0.6644
196.8	0.075614	0.1134	0.058	0.0579	0.6944	0.0556	0.6659
197	0.075694	0.1135	0.058	0.0579	0.6944	0.0557	0.6673
197.2	0.075775	0.1137	0.058	0.0579	0.6944	0.0558	0.6688
197.4	0.075855	0.1138	0.058	0.0579	0.6944	0.0559	0.6702
197.6	0.075935	0.1139	0.058	0.0579	0.6944	0.0560	0.6717
197.8	0.076016	0.1140	0.058	0.0579	0.6944	0.0562	0.6731
198	0.076096	0.1141	0.058	0.0579	0.6944	0.0563	0.6746
198.2	0.076177	0.1143	0.058	0.0579	0.6944	0.0564	0.6760
198.4	0.076257	0.1144	0.058	0.0579	0.6944	0.0565	0.6775
198.6	0.076338	0.1145	0.058	0.0579	0.6944	0.0566	0.6789
198.8	0.076418	0.1146	0.058	0.0579	0.6944	0.0568	0.6804
199	0.076499	0.1147	0.058	0.0579	0.6944	0.0569	0.6818
199.2	0.076579	0.1149	0.058	0.0579	0.6944	0.0570	0.6833
199.4	0.07666	0.1150	0.058	0.0579	0.6944	0.0571	0.6847
199.6	0.07674	0.1151	0.058	0.0579	0.6944	0.0572	0.6862
199.8	0.07682	0.1152	0.058	0.0579	0.6944	0.0574	0.6876
200	0.076901	0.1154	0.058	0.0579	0.6944	0.0575	0.6890
200.2	0.076982	0.1155	0.058	0.0579	0.6944	0.0576	0.6905
200.4	0.077062	0.1156	0.058	0.0579	0.6944	0.0577	0.6919
200.6	0.077143	0.1157	0.058	0.0579	0.6944	0.0578	0.6934
200.8	0.077223	0.1158	0.058	0.0579	0.6944	0.0580	0.6948
201	0.077304	0.1160	0.058	0.0579	0.6944	0.0581	0.6963
201.2	0.077384	0.1161	0.058	0.0579	0.6944	0.0582	0.6977
201.4	0.077465	0.1162	0.058	0.0579	0.6944	0.0583	0.6992
201.6	0.077545	0.1163	0.058	0.0579	0.6944	0.0584	0.7006
201.8	0.077626	0.1164	0.058	0.0579	0.6944	0.0586	0.7021
202	0.077707	0.1166	0.058	0.0579	0.6944	0.0587	0.7035
202.2	0.077787	0.1167	0.058	0.0579	0.6944	0.0588	0.7050
202.4	0.077868	0.1168	0.058	0.0579	0.6944	0.0589	0.7064
202.6	0.077948	0.1169	0.058	0.0579	0.6944	0.0591	0.7079
202.8	0.078029	0.1170	0.058	0.0579	0.6944	0.0592	0.7094
203	0.07811	0.1172	0.058	0.0579	0.6944	0.0593	0.7108
203.2	0.07819	0.1173	0.058	0.0579	0.6944	0.0594	0.7123
203.4	0.078271	0.1174	0.058	0.0579	0.6944	0.0595	0.7137
203.6	0.078352	0.1175	0.058	0.0579	0.6944	0.0597	0.7152
203.8	0.078432	0.1176	0.058	0.0579	0.6944	0.0598	0.7166
204	0.078513	0.1178	0.058	0.0579	0.6944	0.0599	0.7181
204.2	0.078594	0.1179	0.058	0.0579	0.6944	0.0600	0.7195
204.4	0.078674	0.1180	0.058	0.0579	0.6944	0.0601	0.7210
204.6	0.078755	0.1181	0.058	0.0579	0.6944	0.0603	0.7224
204.8	0.078836	0.1183	0.058	0.0579	0.6944	0.0604	0.7239
205	0.078916	0.1184	0.058	0.0579	0.6944	0.0605	0.7253
205.2	0.078997	0.1185	0.058	0.0579	0.6944	0.0606	0.7268

205.4	0.079078	0.1186	0.058	0.0579	0.6944	0.0607	0.7282
205.6	0.079159	0.1187	0.058	0.0579	0.6944	0.0609	0.7297
205.8	0.079239	0.1189	0.058	0.0579	0.6944	0.0610	0.7311
206	0.07932	0.1190	0.058	0.0579	0.6944	0.0611	0.7326
206.2	0.079401	0.1191	0.058	0.0579	0.6944	0.0612	0.7340
206.4	0.079482	0.1192	0.058	0.0579	0.6944	0.0614	0.7355
206.6	0.079562	0.1193	0.058	0.0579	0.6944	0.0615	0.7369
206.8	0.079643	0.1195	0.058	0.0579	0.6944	0.0616	0.7384
207	0.079724	0.1196	0.058	0.0579	0.6944	0.0617	0.7399
207.2	0.079805	0.1197	0.058	0.0579	0.6944	0.0618	0.7413
207.4	0.079885	0.1198	0.058	0.0579	0.6944	0.0620	0.7428
207.6	0.079966	0.1199	0.058	0.0579	0.6944	0.0621	0.7442
207.8	0.080047	0.1201	0.058	0.0579	0.6944	0.0622	0.7457
208	0.080128	0.1202	0.058	0.0579	0.6944	0.0623	0.7471
208.2	0.080209	0.1203	0.058	0.0579	0.6944	0.0624	0.7486
208.4	0.08029	0.1204	0.058	0.0579	0.6944	0.0626	0.7500
208.6	0.08037	0.1206	0.058	0.0579	0.6944	0.0627	0.7515
208.8	0.080451	0.1207	0.058	0.0579	0.6944	0.0628	0.7530
209	0.080532	0.1208	0.058	0.0579	0.6944	0.0629	0.7544
209.2	0.080613	0.1209	0.058	0.0579	0.6944	0.0630	0.7559
209.4	0.080694	0.1210	0.058	0.0579	0.6944	0.0632	0.7573
209.6	0.080775	0.1212	0.058	0.0579	0.6944	0.0633	0.7588
209.8	0.080856	0.1213	0.058	0.0579	0.6944	0.0634	0.7602
210	0.080937	0.1214	0.058	0.0579	0.6944	0.0635	0.7617
210.2	0.081018	0.1215	0.058	0.0579	0.6944	0.0637	0.7631
210.4	0.081098	0.1216	0.058	0.0579	0.6944	0.0638	0.7646
210.6	0.081179	0.1218	0.058	0.0579	0.6944	0.0639	0.7661
210.8	0.08126	0.1219	0.058	0.0579	0.6944	0.0640	0.7675
211	0.081341	0.1220	0.058	0.0579	0.6944	0.0641	0.7690
211.2	0.081422	0.1221	0.058	0.0579	0.6944	0.0643	0.7704
211.4	0.081503	0.1223	0.058	0.0579	0.6944	0.0644	0.7719
211.6	0.081584	0.1224	0.058	0.0579	0.6944	0.0645	0.7733
211.8	0.081665	0.1225	0.058	0.0579	0.6944	0.0646	0.7748
212	0.081746	0.1226	0.058	0.0579	0.6944	0.0647	0.7763
212.2	0.081827	0.1227	0.058	0.0579	0.6944	0.0649	0.7777
212.4	0.081908	0.1229	0.058	0.0579	0.6944	0.0650	0.7792
212.6	0.081989	0.1230	0.058	0.0579	0.6944	0.0651	0.7806
212.8	0.08207	0.1231	0.058	0.0579	0.6944	0.0652	0.7821
213	0.082151	0.1232	0.058	0.0579	0.6944	0.0654	0.7835
213.2	0.082232	0.1233	0.058	0.0579	0.6944	0.0655	0.7850
213.4	0.082313	0.1235	0.058	0.0579	0.6944	0.0656	0.7865
213.6	0.082394	0.1236	0.058	0.0579	0.6944	0.0657	0.7879
213.8	0.082475	0.1237	0.058	0.0579	0.6944	0.0658	0.7894
214	0.082557	0.1238	0.058	0.0579	0.6944	0.0660	0.7908
214.2	0.082638	0.1240	0.058	0.0579	0.6944	0.0661	0.7923
214.4	0.082719	0.1241	0.058	0.0579	0.6944	0.0662	0.7938
214.6	0.0828	0.1242	0.058	0.0579	0.6944	0.0663	0.7952

214.8	0.082881	0.1243	0.058	0.0579	0.6944	0.0665	0.7967
215	0.082962	0.1244	0.058	0.0579	0.6944	0.0666	0.7981
215.2	0.083043	0.1246	0.058	0.0579	0.6944	0.0667	0.7996
215.4	0.083124	0.1247	0.058	0.0579	0.6944	0.0668	0.8011
215.6	0.083205	0.1248	0.058	0.0579	0.6944	0.0669	0.8025
215.8	0.083287	0.1249	0.058	0.0579	0.6944	0.0671	0.8040
216	0.083368	0.1251	0.058	0.0579	0.6944	0.0672	0.8054
216.2	0.083449	0.1252	0.058	0.0579	0.6944	0.0673	0.8069
216.4	0.08353	0.1253	0.058	0.0579	0.6944	0.0674	0.8084
216.6	0.083611	0.1254	0.058	0.0579	0.6944	0.0675	0.8098
216.8	0.083692	0.1255	0.058	0.0579	0.6944	0.0677	0.8113
217	0.083774	0.1257	0.058	0.0579	0.6944	0.0678	0.8127
217.2	0.083855	0.1258	0.058	0.0579	0.6944	0.0679	0.8142
217.4	0.083936	0.1259	0.058	0.0579	0.6944	0.0680	0.8157
217.6	0.084017	0.1260	0.058	0.0579	0.6944	0.0682	0.8171
217.8	0.084098	0.1261	0.058	0.0579	0.6944	0.0683	0.8186
218	0.08418	0.1263	0.058	0.0579	0.6944	0.0684	0.8201
218.2	0.084261	0.1264	0.058	0.0579	0.6944	0.0685	0.8215
218.4	0.084342	0.1265	0.058	0.0579	0.6944	0.0686	0.8230
218.6	0.084423	0.1266	0.058	0.0579	0.6944	0.0688	0.8244
218.8	0.084505	0.1268	0.058	0.0579	0.6944	0.0689	0.8259
219	0.084586	0.1269	0.058	0.0579	0.6944	0.0690	0.8274
219.2	0.084667	0.1270	0.058	0.0579	0.6944	0.0691	0.8288
219.4	0.084749	0.1271	0.058	0.0579	0.6944	0.0693	0.8303
219.6	0.08483	0.1272	0.058	0.0579	0.6944	0.0694	0.8318
219.8	0.084911	0.1274	0.058	0.0579	0.6944	0.0695	0.8332
220	0.084992	0.1275	0.058	0.0579	0.6944	0.0696	0.8347
220.2	0.085074	0.1276	0.058	0.0579	0.6944	0.0697	0.8362
220.4	0.085155	0.1277	0.058	0.0579	0.6944	0.0699	0.8376
220.6	0.085236	0.1279	0.058	0.0579	0.6944	0.0700	0.8391
220.8	0.085318	0.1280	0.058	0.0579	0.6944	0.0701	0.8405
221	0.085399	0.1281	0.058	0.0579	0.6944	0.0702	0.8420
221.2	0.085481	0.1282	0.058	0.0579	0.6944	0.0704	0.8435
221.4	0.085562	0.1283	0.058	0.0579	0.6944	0.0705	0.8449
221.6	0.085643	0.1285	0.058	0.0579	0.6944	0.0706	0.8464
221.8	0.085725	0.1286	0.058	0.0579	0.6944	0.0707	0.8479
222	0.085806	0.1287	0.058	0.0579	0.6944	0.0708	0.8493
222.2	0.085888	0.1288	0.058	0.0579	0.6944	0.0710	0.8508
222.4	0.085969	0.1290	0.058	0.0579	0.6944	0.0711	0.8523
222.6	0.08605	0.1291	0.058	0.0579	0.6944	0.0712	0.8537
222.8	0.086132	0.1292	0.058	0.0579	0.6944	0.0713	0.8552
223	0.086213	0.1293	0.058	0.0579	0.6944	0.0714	0.8567
223.2	0.086295	0.1294	0.058	0.0579	0.6944	0.0716	0.8581
223.4	0.086376	0.1296	0.058	0.0579	0.6944	0.0717	0.8596
223.6	0.086458	0.1297	0.058	0.0579	0.6944	0.0718	0.8611
223.8	0.086539	0.1298	0.058	0.0579	0.6944	0.0719	0.8625
224	0.086621	0.1299	0.058	0.0579	0.6944	0.0721	0.8640

224.2	0.086702	0.1301	0.058	0.0579	0.6944	0.0722	0.8655
224.4	0.086784	0.1302	0.058	0.0579	0.6944	0.0723	0.8669
224.6	0.086865	0.1303	0.058	0.0579	0.6944	0.0724	0.8684
224.8	0.086947	0.1304	0.058	0.0579	0.6944	0.0725	0.8699
225	0.087028	0.1305	0.058	0.0579	0.6944	0.0727	0.8713
225.2	0.08711	0.1307	0.058	0.0579	0.6944	0.0728	0.8728
225.4	0.087191	0.1308	0.058	0.0579	0.6944	0.0729	0.8743
225.6	0.087273	0.1309	0.058	0.0579	0.6944	0.0730	0.8757
225.8	0.087354	0.1310	0.058	0.0579	0.6944	0.0732	0.8772
226	0.087436	0.1312	0.058	0.0579	0.6944	0.0733	0.8787
226.2	0.087517	0.1313	0.058	0.0579	0.6944	0.0734	0.8801
226.4	0.087599	0.1314	0.058	0.0579	0.6944	0.0735	0.8816
226.6	0.087681	0.1315	0.058	0.0579	0.6944	0.0737	0.8831
226.8	0.087762	0.1316	0.058	0.0579	0.6944	0.0738	0.8845
227	0.087844	0.1318	0.058	0.0579	0.6944	0.0739	0.8860
227.2	0.087925	0.1319	0.058	0.0579	0.6944	0.0740	0.8875
227.4	0.088007	0.1320	0.058	0.0579	0.6944	0.0741	0.8889
227.6	0.088089	0.1321	0.058	0.0579	0.6944	0.0743	0.8904
227.8	0.08817	0.1323	0.058	0.0579	0.6944	0.0744	0.8919
228	0.088252	0.1324	0.058	0.0579	0.6944	0.0745	0.8934
228.2	0.088334	0.1325	0.058	0.0579	0.6944	0.0746	0.8948
228.4	0.088415	0.1326	0.058	0.0579	0.6944	0.0748	0.8963
228.6	0.088497	0.1327	0.058	0.0579	0.6944	0.0749	0.8978
228.8	0.088579	0.1329	0.058	0.0579	0.6944	0.0750	0.8992
229	0.08866	0.1330	0.058	0.0579	0.6944	0.0751	0.9007
229.2	0.088742	0.1331	0.058	0.0579	0.6944	0.0752	0.9022
229.4	0.088824	0.1332	0.058	0.0579	0.6944	0.0754	0.9036
229.6	0.088905	0.1334	0.058	0.0579	0.6944	0.0755	0.9051
229.8	0.088987	0.1335	0.058	0.0579	0.6944	0.0756	0.9066
230	0.089069	0.1336	0.058	0.0579	0.6944	0.0757	0.9081
230.2	0.089151	0.1337	0.058	0.0579	0.6944	0.0759	0.9095
230.4	0.089232	0.1338	0.058	0.0579	0.6944	0.0760	0.9110
230.6	0.089314	0.1340	0.058	0.0579	0.6944	0.0761	0.9125
230.8	0.089396	0.1341	0.058	0.0579	0.6944	0.0762	0.9139
231	0.089478	0.1342	0.058	0.0579	0.6944	0.0763	0.9154
231.2	0.089559	0.1343	0.058	0.0579	0.6944	0.0765	0.9169
231.4	0.089641	0.1345	0.058	0.0579	0.6944	0.0766	0.9184
231.6	0.089723	0.1346	0.058	0.0579	0.6944	0.0767	0.9198
231.8	0.089805	0.1347	0.058	0.0579	0.6944	0.0768	0.9213
232	0.089887	0.1348	0.058	0.0579	0.6944	0.0770	0.9228
232.2	0.089968	0.1350	0.058	0.0579	0.6944	0.0771	0.9243
232.4	0.09005	0.1351	0.058	0.0579	0.6944	0.0772	0.9257
232.6	0.090132	0.1352	0.058	0.0579	0.6944	0.0773	0.9272
232.8	0.090214	0.1353	0.058	0.0579	0.6944	0.0775	0.9287
233	0.090296	0.1354	0.058	0.0579	0.6944	0.0776	0.9301
233.2	0.090378	0.1356	0.058	0.0579	0.6944	0.0777	0.9316
233.4	0.09046	0.1357	0.058	0.0579	0.6944	0.0778	0.9331

233.6	0.090541	0.1358	0.058	0.0579	0.6944	0.0779	0.9346
233.8	0.090623	0.1359	0.058	0.0579	0.6944	0.0781	0.9360
234	0.090705	0.1361	0.058	0.0579	0.6944	0.0782	0.9375
234.2	0.090787	0.1362	0.058	0.0579	0.6944	0.0783	0.9390
234.4	0.090869	0.1363	0.058	0.0579	0.6944	0.0784	0.9405
234.6	0.090951	0.1364	0.058	0.0579	0.6944	0.0786	0.9419
234.8	0.091033	0.1365	0.058	0.0579	0.6944	0.0787	0.9434
235	0.091115	0.1367	0.058	0.0579	0.6944	0.0788	0.9449
235.2	0.091197	0.1368	0.058	0.0579	0.6944	0.0789	0.9464
235.4	0.091279	0.1369	0.058	0.0579	0.6944	0.0790	0.9478
235.6	0.091361	0.1370	0.058	0.0579	0.6944	0.0792	0.9493
235.8	0.091443	0.1372	0.058	0.0579	0.6944	0.0793	0.9508
236	0.091525	0.1373	0.058	0.0579	0.6944	0.0794	0.9523
236.2	0.091607	0.1374	0.058	0.0579	0.6944	0.0795	0.9537
236.4	0.091689	0.1375	0.058	0.0579	0.6944	0.0797	0.9552
236.6	0.091771	0.1377	0.058	0.0579	0.6944	0.0798	0.9567
236.8	0.091853	0.1378	0.058	0.0579	0.6944	0.0799	0.9582
237	0.091935	0.1379	0.058	0.0579	0.6944	0.0800	0.9596
237.2	0.092017	0.1380	0.058	0.0579	0.6944	0.0802	0.9611
237.4	0.092099	0.1381	0.058	0.0579	0.6944	0.0803	0.9626
237.6	0.092181	0.1383	0.058	0.0579	0.6944	0.0804	0.9641
237.8	0.092263	0.1384	0.058	0.0579	0.6944	0.0805	0.9655
238	0.092345	0.1385	0.058	0.0579	0.6944	0.0806	0.9670
238.2	0.092427	0.1386	0.058	0.0579	0.6944	0.0808	0.9685
238.4	0.092509	0.1388	0.058	0.0579	0.6944	0.0809	0.9700
238.6	0.092591	0.1389	0.058	0.0579	0.6944	0.0810	0.9715
238.8	0.092673	0.1390	0.058	0.0579	0.6944	0.0811	0.9729
239	0.092755	0.1391	0.058	0.0579	0.6944	0.0813	0.9744
239.2	0.092837	0.1393	0.058	0.0579	0.6944	0.0814	0.9759
239.4	0.09292	0.1394	0.058	0.0579	0.6944	0.0815	0.9774
239.6	0.093002	0.1395	0.058	0.0579	0.6944	0.0816	0.9788
239.8	0.093084	0.1396	0.058	0.0579	0.6944	0.0818	0.9803
240	0.093166	0.1397	0.058	0.0579	0.6944	0.0819	0.9818
240.2	0.093248	0.1399	0.058	0.0579	0.6944	0.0820	0.9833
240.4	0.09333	0.1400	0.058	0.0579	0.6944	0.0821	0.9848
240.6	0.093412	0.1401	0.058	0.0579	0.6944	0.0822	0.9862
240.8	0.093495	0.1402	0.058	0.0579	0.6944	0.0824	0.9877
241	0.093577	0.1404	0.058	0.0579	0.6944	0.0825	0.9892
241.2	0.093659	0.1405	0.058	0.0579	0.6944	0.0826	0.9907
241.4	0.093741	0.1406	0.058	0.0579	0.6944	0.0827	0.9922
241.6	0.093823	0.1407	0.058	0.0579	0.6944	0.0829	0.9936
241.8	0.093906	0.1409	0.058	0.0579	0.6944	0.0830	0.9951
242	0.093988	0.1410	0.058	0.0579	0.6944	0.0831	0.9966
242.2	0.09407	0.1411	0.058	0.0579	0.6944	0.0832	0.9981
242.4	0.094152	0.1412	0.058	0.0579	0.6944	0.0834	0.9996
242.6	0.094235	0.1414	0.058	0.0579	0.6944	0.0835	1.0010
242.8	0.094317	0.1415	0.058	0.0579	0.6944	0.0836	1.0025

243	0.094399	0.1416	0.058	0.0579	0.6944	0.0837	1.0040
243.2	0.094482	0.1417	0.058	0.0579	0.6944	0.0839	1.0055
243.4	0.094564	0.1418	0.058	0.0579	0.6944	0.0840	1.0070
243.6	0.094646	0.1420	0.058	0.0579	0.6944	0.0841	1.0084
243.8	0.094728	0.1421	0.058	0.0579	0.6944	0.0842	1.0099
244	0.094811	0.1422	0.058	0.0579	0.6944	0.0843	1.0114
244.2	0.094893	0.1423	0.058	0.0579	0.6944	0.0845	1.0129
244.4	0.094975	0.1425	0.058	0.0579	0.6944	0.0846	1.0144
244.6	0.095058	0.1426	0.058	0.0579	0.6944	0.0847	1.0159
244.8	0.09514	0.1427	0.058	0.0579	0.6944	0.0848	1.0173
245	0.095222	0.1428	0.058	0.0579	0.6944	0.0850	1.0188
245.2	0.095305	0.1430	0.058	0.0579	0.6944	0.0851	1.0203
245.4	0.095387	0.1431	0.058	0.0579	0.6944	0.0852	1.0218
245.6	0.09547	0.1432	0.058	0.0579	0.6944	0.0853	1.0233
245.8	0.095552	0.1433	0.058	0.0579	0.6944	0.0855	1.0248
246	0.095634	0.1435	0.058	0.0579	0.6944	0.0856	1.0262
246.2	0.095717	0.1436	0.058	0.0579	0.6944	0.0857	1.0277
246.4	0.095799	0.1437	0.058	0.0579	0.6944	0.0858	1.0292
246.6	0.095882	0.1438	0.058	0.0579	0.6944	0.0860	1.0307
246.8	0.095964	0.1439	0.058	0.0579	0.6944	0.0861	1.0322
247	0.096047	0.1441	0.058	0.0579	0.6944	0.0862	1.0337
247.2	0.096129	0.1442	0.058	0.0579	0.6944	0.0863	1.0351
247.4	0.096212	0.1443	0.058	0.0579	0.6944	0.0864	1.0366
247.6	0.096294	0.1444	0.058	0.0579	0.6944	0.0866	1.0381
247.8	0.096376	0.1446	0.058	0.0579	0.6944	0.0867	1.0396
248	0.096459	0.1447	0.058	0.0579	0.6944	0.0868	1.0411
248.2	0.096541	0.1448	0.058	0.0579	0.6944	0.0869	1.0426
248.4	0.096624	0.1449	0.058	0.0579	0.6944	0.0871	1.0440
248.6	0.096706	0.1451	0.058	0.0579	0.6944	0.0872	1.0455
248.8	0.096789	0.1452	0.058	0.0579	0.6944	0.0873	1.0470
249	0.096872	0.1453	0.058	0.0579	0.6944	0.0874	1.0485
249.2	0.096954	0.1454	0.058	0.0579	0.6944	0.0876	1.0500
249.4	0.097037	0.1456	0.058	0.0579	0.6944	0.0877	1.0515
249.6	0.097119	0.1457	0.058	0.0579	0.6944	0.0878	1.0530
249.8	0.097202	0.1458	0.058	0.0579	0.6944	0.0879	1.0544
250	0.097284	0.1459	0.058	0.0579	0.6944	0.0881	1.0559
250.2	0.097367	0.1461	0.058	0.0579	0.6944	0.0882	1.0574
250.4	0.09745	0.1462	0.058	0.0579	0.6944	0.0883	1.0589
250.6	0.097532	0.1463	0.058	0.0579	0.6944	0.0884	1.0604
250.8	0.097615	0.1464	0.058	0.0579	0.6944	0.0886	1.0619
251	0.097697	0.1465	0.058	0.0579	0.6944	0.0887	1.0634
251.2	0.09778	0.1467	0.058	0.0579	0.6944	0.0888	1.0649
251.4	0.097863	0.1468	0.058	0.0579	0.6944	0.0889	1.0663
251.6	0.097945	0.1469	0.058	0.0579	0.6944	0.0890	1.0678
251.8	0.098028	0.1470	0.058	0.0579	0.6944	0.0892	1.0693
252	0.098111	0.1472	0.058	0.0579	0.6944	0.0893	1.0708
252.2	0.098193	0.1473	0.058	0.0579	0.6944	0.0894	1.0723

252.4	0.098276	0.1474	0.058	0.0579	0.6944	0.0895	1.0738
252.6	0.098359	0.1475	0.058	0.0579	0.6944	0.0897	1.0753
252.8	0.098441	0.1477	0.058	0.0579	0.6944	0.0898	1.0768
253	0.098524	0.1478	0.058	0.0579	0.6944	0.0899	1.0782
253.2	0.098607	0.1479	0.058	0.0579	0.6944	0.0900	1.0797
253.4	0.098689	0.1480	0.058	0.0579	0.6944	0.0902	1.0812
253.6	0.098772	0.1482	0.058	0.0579	0.6944	0.0903	1.0827
253.8	0.098855	0.1483	0.058	0.0579	0.6944	0.0904	1.0842
254	0.098938	0.1484	0.058	0.0579	0.6944	0.0905	1.0857
254.2	0.09902	0.1485	0.058	0.0579	0.6944	0.0907	1.0872
254.4	0.099103	0.1487	0.058	0.0579	0.6944	0.0908	1.0887
254.6	0.099186	0.1488	0.058	0.0579	0.6944	0.0909	1.0902
254.8	0.099269	0.1489	0.058	0.0579	0.6944	0.0910	1.0916
255	0.099352	0.1490	0.058	0.0579	0.6944	0.0912	1.0931
255.2	0.099434	0.1492	0.058	0.0579	0.6944	0.0913	1.0946
255.4	0.099517	0.1493	0.058	0.0579	0.6944	0.0914	1.0961
255.6	0.0996	0.1494	0.058	0.0579	0.6944	0.0915	1.0976
255.8	0.099683	0.1495	0.058	0.0579	0.6944	0.0917	1.0991
256	0.099766	0.1496	0.058	0.0579	0.6944	0.0918	1.1006
256.2	0.099848	0.1498	0.058	0.0579	0.6944	0.0919	1.1021
256.4	0.099931	0.1499	0.058	0.0579	0.6944	0.0920	1.1036
256.6	0.100014	0.1500	0.058	0.0579	0.6944	0.0922	1.1051
256.8	0.100097	0.1501	0.058	0.0579	0.6944	0.0923	1.1066
257	0.10018	0.1503	0.058	0.0579	0.6944	0.0924	1.1080
257.2	0.100263	0.1504	0.058	0.0579	0.6944	0.0925	1.1095
257.4	0.100346	0.1505	0.058	0.0579	0.6944	0.0926	1.1110
257.6	0.100429	0.1506	0.058	0.0579	0.6944	0.0928	1.1125
257.8	0.100512	0.1508	0.058	0.0579	0.6944	0.0929	1.1140
258	0.100594	0.1509	0.058	0.0579	0.6944	0.0930	1.1155
258.2	0.100677	0.1510	0.058	0.0579	0.6944	0.0931	1.1170
258.4	0.10076	0.1511	0.058	0.0579	0.6944	0.0933	1.1185
258.6	0.100843	0.1513	0.058	0.0579	0.6944	0.0934	1.1200
258.8	0.100926	0.1514	0.058	0.0579	0.6944	0.0935	1.1215
259	0.101009	0.1515	0.058	0.0579	0.6944	0.0936	1.1230
259.2	0.101092	0.1516	0.058	0.0579	0.6944	0.0938	1.1245
259.4	0.101175	0.1518	0.058	0.0579	0.6944	0.0939	1.1260
259.6	0.101258	0.1519	0.058	0.0579	0.6944	0.0940	1.1275
259.8	0.101341	0.1520	0.058	0.0579	0.6944	0.0941	1.1289
260	0.101424	0.1521	0.058	0.0579	0.6944	0.0943	1.1304
260.2	0.101507	0.1523	0.058	0.0579	0.6944	0.0944	1.1319
260.4	0.10159	0.1524	0.058	0.0579	0.6944	0.0945	1.1334
260.6	0.101673	0.1525	0.058	0.0579	0.6944	0.0946	1.1349
260.8	0.101756	0.1526	0.058	0.0579	0.6944	0.0948	1.1364
261	0.101839	0.1528	0.058	0.0579	0.6944	0.0949	1.1379
261.2	0.101922	0.1529	0.058	0.0579	0.6944	0.0950	1.1394
261.4	0.102006	0.1530	0.058	0.0579	0.6944	0.0951	1.1409
261.6	0.102089	0.1531	0.058	0.0579	0.6944	0.0953	1.1424

261.8	0.102172	0.1533	0.058	0.0579	0.6944	0.0954	1.1439
262	0.102255	0.1534	0.058	0.0579	0.6944	0.0955	1.1454
262.2	0.102338	0.1535	0.058	0.0579	0.6944	0.0956	1.1469
262.4	0.102421	0.1536	0.058	0.0579	0.6944	0.0958	1.1484
262.6	0.102504	0.1538	0.058	0.0579	0.6944	0.0959	1.1499
262.8	0.102587	0.1539	0.058	0.0579	0.6944	0.0960	1.1514
263	0.10267	0.1540	0.058	0.0579	0.6944	0.0961	1.1529
263.2	0.102754	0.1541	0.058	0.0579	0.6944	0.0963	1.1544
263.4	0.102837	0.1543	0.058	0.0579	0.6944	0.0964	1.1559
263.6	0.10292	0.1544	0.058	0.0579	0.6944	0.0965	1.1574
263.8	0.103003	0.1545	0.058	0.0579	0.6944	0.0966	1.1589
264	0.103086	0.1546	0.058	0.0579	0.6944	0.0968	1.1604
264.2	0.103169	0.1548	0.058	0.0579	0.6944	0.0969	1.1619
264.4	0.103253	0.1549	0.058	0.0579	0.6944	0.0970	1.1634
264.6	0.103336	0.1550	0.058	0.0579	0.6944	0.0971	1.1649
264.8	0.103419	0.1551	0.058	0.0579	0.6944	0.0973	1.1663
265	0.103502	0.1553	0.058	0.0579	0.6944	0.0974	1.1678
265.2	0.103586	0.1554	0.058	0.0579	0.6944	0.0975	1.1693
265.4	0.103669	0.1555	0.058	0.0579	0.6944	0.0976	1.1708
265.6	0.103752	0.1556	0.058	0.0579	0.6944	0.0978	1.1723
265.8	0.103835	0.1558	0.058	0.0579	0.6944	0.0979	1.1738
266	0.103919	0.1559	0.058	0.0579	0.6944	0.0980	1.1753
266.2	0.104002	0.1560	0.058	0.0579	0.6944	0.0981	1.1768
266.4	0.104085	0.1561	0.058	0.0579	0.6944	0.0983	1.1783
266.6	0.104168	0.1563	0.058	0.0579	0.6944	0.0984	1.1798
266.8	0.104252	0.1564	0.058	0.0579	0.6944	0.0985	1.1813
267	0.104335	0.1565	0.058	0.0579	0.6944	0.0986	1.1828
267.2	0.104418	0.1566	0.058	0.0579	0.6944	0.0988	1.1843
267.4	0.104502	0.1568	0.058	0.0579	0.6944	0.0989	1.1858
267.6	0.104585	0.1569	0.058	0.0579	0.6944	0.0990	1.1873
267.8	0.104668	0.1570	0.058	0.0579	0.6944	0.0991	1.1888
268	0.104752	0.1571	0.058	0.0579	0.6944	0.0993	1.1903
268.2	0.104835	0.1573	0.058	0.0579	0.6944	0.0994	1.1918
268.4	0.104919	0.1574	0.058	0.0579	0.6944	0.0995	1.1933
268.6	0.105002	0.1575	0.058	0.0579	0.6944	0.0996	1.1948
268.8	0.105085	0.1576	0.058	0.0579	0.6944	0.0998	1.1963
269	0.105169	0.1578	0.058	0.0579	0.6944	0.0999	1.1978
269.2	0.105252	0.1579	0.058	0.0579	0.6944	0.1000	1.1993
269.4	0.105336	0.1580	0.058	0.0579	0.6944	0.1001	1.2008
269.6	0.105419	0.1581	0.058	0.0579	0.6944	0.1003	1.2023
269.8	0.105502	0.1583	0.058	0.0579	0.6944	0.1004	1.2038
270	0.105586	0.1584	0.058	0.0579	0.6944	0.1005	1.2054
270.2	0.105669	0.1585	0.058	0.0579	0.6944	0.1006	1.2069
270.4	0.105753	0.1586	0.058	0.0579	0.6944	0.1008	1.2084
270.6	0.105836	0.1588	0.058	0.0579	0.6944	0.1009	1.2099
270.8	0.10592	0.1589	0.058	0.0579	0.6944	0.1010	1.2114
271	0.106003	0.1590	0.058	0.0579	0.6944	0.1011	1.2129

271.2	0.106087	0.1591	0.058	0.0579	0.6944	0.1013	1.2144
271.4	0.10617	0.1593	0.058	0.0579	0.6944	0.1014	1.2159
271.6	0.106254	0.1594	0.058	0.0579	0.6944	0.1015	1.2174
271.8	0.106337	0.1595	0.058	0.0579	0.6944	0.1016	1.2189
272	0.106421	0.1596	0.058	0.0579	0.6944	0.1018	1.2204
272.2	0.106504	0.1598	0.058	0.0579	0.6944	0.1019	1.2219
272.4	0.106588	0.1599	0.058	0.0579	0.6944	0.1020	1.2234
272.6	0.106672	0.1600	0.058	0.0579	0.6944	0.1021	1.2249
272.8	0.106755	0.1601	0.058	0.0579	0.6944	0.1023	1.2264
273	0.106839	0.1603	0.058	0.0579	0.6944	0.1024	1.2279
273.2	0.106922	0.1604	0.058	0.0579	0.6944	0.1025	1.2294
273.4	0.107006	0.1605	0.058	0.0579	0.6944	0.1026	1.2309
273.6	0.10709	0.1606	0.058	0.0579	0.6944	0.1028	1.2324
273.8	0.107173	0.1608	0.058	0.0579	0.6944	0.1029	1.2339
274	0.107257	0.1609	0.058	0.0579	0.6944	0.1030	1.2354
274.2	0.10734	0.1610	0.058	0.0579	0.6944	0.1031	1.2369
274.4	0.107424	0.1611	0.058	0.0579	0.6944	0.1033	1.2384
274.6	0.107508	0.1613	0.058	0.0579	0.6944	0.1034	1.2399
274.8	0.107591	0.1614	0.058	0.0579	0.6944	0.1035	1.2414
275	0.107675	0.1615	0.058	0.0579	0.6944	0.1036	1.2430
275.2	0.107759	0.1616	0.058	0.0579	0.6944	0.1038	1.2445
275.4	0.107842	0.1618	0.058	0.0579	0.6944	0.1039	1.2460
275.6	0.107926	0.1619	0.058	0.0579	0.6944	0.1040	1.2475
275.8	0.10801	0.1620	0.058	0.0579	0.6944	0.1041	1.2490
276	0.108094	0.1621	0.058	0.0579	0.6944	0.1043	1.2505
276.2	0.108177	0.1623	0.058	0.0579	0.6944	0.1044	1.2520
276.4	0.108261	0.1624	0.058	0.0579	0.6944	0.1045	1.2535
276.6	0.108345	0.1625	0.058	0.0579	0.6944	0.1046	1.2550
276.8	0.108429	0.1626	0.058	0.0579	0.6944	0.1048	1.2565
277	0.108512	0.1628	0.058	0.0579	0.6944	0.1049	1.2580
277.2	0.108596	0.1629	0.058	0.0579	0.6944	0.1050	1.2595
277.4	0.10868	0.1630	0.058	0.0579	0.6944	0.1051	1.2610
277.6	0.108764	0.1631	0.058	0.0579	0.6944	0.1053	1.2625
277.8	0.108847	0.1633	0.058	0.0579	0.6944	0.1054	1.2641
278	0.108931	0.1634	0.058	0.0579	0.6944	0.1055	1.2656
278.2	0.109015	0.1635	0.058	0.0579	0.6944	0.1057	1.2671
278.4	0.109099	0.1636	0.058	0.0579	0.6944	0.1058	1.2686
278.6	0.109183	0.1638	0.058	0.0579	0.6944	0.1059	1.2701
278.8	0.109267	0.1639	0.058	0.0579	0.6944	0.1060	1.2716
279	0.10935	0.1640	0.058	0.0579	0.6944	0.1062	1.2731
279.2	0.109434	0.1642	0.058	0.0579	0.6944	0.1063	1.2746
279.4	0.109518	0.1643	0.058	0.0579	0.6944	0.1064	1.2761
279.6	0.109602	0.1644	0.058	0.0579	0.6944	0.1065	1.2776
279.8	0.109686	0.1645	0.058	0.0579	0.6944	0.1067	1.2791
280	0.10977	0.1647	0.058	0.0579	0.6944	0.1068	1.2807
280.2	0.109854	0.1648	0.058	0.0579	0.6944	0.1069	1.2822
280.4	0.109938	0.1649	0.058	0.0579	0.6944	0.1070	1.2837

280.6	0.110022	0.1650	0.058	0.0579	0.6944	0.1072	1.2852
280.8	0.110106	0.1652	0.058	0.0579	0.6944	0.1073	1.2867
281	0.11019	0.1653	0.058	0.0579	0.6944	0.1074	1.2882
281.2	0.110273	0.1654	0.058	0.0579	0.6944	0.1075	1.2897
281.4	0.110357	0.1655	0.058	0.0579	0.6944	0.1077	1.2912
281.6	0.110441	0.1657	0.058	0.0579	0.6944	0.1078	1.2927
281.8	0.110525	0.1658	0.058	0.0579	0.6944	0.1079	1.2943
282	0.110609	0.1659	0.058	0.0579	0.6944	0.1080	1.2958
282.2	0.110693	0.1660	0.058	0.0579	0.6944	0.1082	1.2973
282.4	0.110777	0.1662	0.058	0.0579	0.6944	0.1083	1.2988
282.6	0.110861	0.1663	0.058	0.0579	0.6944	0.1084	1.3003
282.8	0.110945	0.1664	0.058	0.0579	0.6944	0.1085	1.3018
283	0.111029	0.1665	0.058	0.0579	0.6944	0.1087	1.3033
283.2	0.111114	0.1667	0.058	0.0579	0.6944	0.1088	1.3048
283.4	0.111198	0.1668	0.058	0.0579	0.6944	0.1089	1.3064
283.6	0.111282	0.1669	0.058	0.0579	0.6944	0.1091	1.3079
283.8	0.111366	0.1670	0.058	0.0579	0.6944	0.1092	1.3094
284	0.11145	0.1672	0.058	0.0579	0.6944	0.1093	1.3109
284.2	0.111534	0.1673	0.058	0.0579	0.6944	0.1094	1.3124
284.4	0.111618	0.1674	0.058	0.0579	0.6944	0.1096	1.3139
284.6	0.111702	0.1676	0.058	0.0579	0.6944	0.1097	1.3154
284.8	0.111786	0.1677	0.058	0.0579	0.6944	0.1098	1.3169
285	0.11187	0.1678	0.058	0.0579	0.6944	0.1099	1.3185
285.2	0.111954	0.1679	0.058	0.0579	0.6944	0.1101	1.3200
285.4	0.112039	0.1681	0.058	0.0579	0.6944	0.1102	1.3215
285.6	0.112123	0.1682	0.058	0.0579	0.6944	0.1103	1.3230
285.8	0.112207	0.1683	0.058	0.0579	0.6944	0.1104	1.3245
286	0.112291	0.1684	0.058	0.0579	0.6944	0.1106	1.3260
286.2	0.112375	0.1686	0.058	0.0579	0.6944	0.1107	1.3276
286.4	0.112459	0.1687	0.058	0.0579	0.6944	0.1108	1.3291
286.6	0.112544	0.1688	0.058	0.0579	0.6944	0.1109	1.3306
286.8	0.112628	0.1689	0.058	0.0579	0.6944	0.1111	1.3321
287	0.112712	0.1691	0.058	0.0579	0.6944	0.1112	1.3336
287.2	0.112796	0.1692	0.058	0.0579	0.6944	0.1113	1.3351
287.4	0.112881	0.1693	0.058	0.0579	0.6944	0.1115	1.3366
287.6	0.112965	0.1694	0.058	0.0579	0.6944	0.1116	1.3382
287.8	0.113049	0.1696	0.058	0.0579	0.6944	0.1117	1.3397
288	0.113133	0.1697	0.058	0.0579	0.6944	0.1118	1.3412
288.2	0.113218	0.1698	0.058	0.0579	0.6944	0.1120	1.3427
288.4	0.113302	0.1700	0.058	0.0579	0.6944	0.1121	1.3442
288.6	0.113386	0.1701	0.058	0.0579	0.6944	0.1122	1.3457
288.8	0.11347	0.1702	0.058	0.0579	0.6944	0.1123	1.3473
289	0.113555	0.1703	0.058	0.0579	0.6944	0.1125	1.3488
289.2	0.113639	0.1705	0.058	0.0579	0.6944	0.1126	1.3503
289.4	0.113723	0.1706	0.058	0.0579	0.6944	0.1127	1.3518
289.6	0.113808	0.1707	0.058	0.0579	0.6944	0.1128	1.3533
289.8	0.113892	0.1708	0.058	0.0579	0.6944	0.1130	1.3549

290	0.113976	0.1710	0.058	0.0579	0.6944	0.1131	1.3564
290.2	0.114061	0.1711	0.058	0.0579	0.6944	0.1132	1.3579
290.4	0.114145	0.1712	0.058	0.0579	0.6944	0.1133	1.3594
290.6	0.11423	0.1713	0.058	0.0579	0.6944	0.1135	1.3609
290.8	0.114314	0.1715	0.058	0.0579	0.6944	0.1136	1.3624
291	0.114398	0.1716	0.058	0.0579	0.6944	0.1137	1.3640
291.2	0.114483	0.1717	0.058	0.0579	0.6944	0.1139	1.3655
291.4	0.114567	0.1719	0.058	0.0579	0.6944	0.1140	1.3670
291.6	0.114652	0.1720	0.058	0.0579	0.6944	0.1141	1.3685
291.8	0.114736	0.1721	0.058	0.0579	0.6944	0.1142	1.3700
292	0.114821	0.1722	0.058	0.0579	0.6944	0.1144	1.3716
292.2	0.114905	0.1724	0.058	0.0579	0.6944	0.1145	1.3731
292.4	0.114989	0.1725	0.058	0.0579	0.6944	0.1146	1.3746
292.6	0.115074	0.1726	0.058	0.0579	0.6944	0.1147	1.3761
292.8	0.115158	0.1727	0.058	0.0579	0.6944	0.1149	1.3776
293	0.115243	0.1729	0.058	0.0579	0.6944	0.1150	1.3792
293.2	0.115327	0.1730	0.058	0.0579	0.6944	0.1151	1.3807
293.4	0.115412	0.1731	0.058	0.0579	0.6944	0.1152	1.3822
293.6	0.115496	0.1732	0.058	0.0579	0.6944	0.1154	1.3837
293.8	0.115581	0.1734	0.058	0.0579	0.6944	0.1155	1.3853
294	0.115665	0.1735	0.058	0.0579	0.6944	0.1156	1.3868
294.2	0.11575	0.1736	0.058	0.0579	0.6944	0.1158	1.3883
294.4	0.115835	0.1738	0.058	0.0579	0.6944	0.1159	1.3898
294.6	0.115919	0.1739	0.058	0.0579	0.6944	0.1160	1.3913
294.8	0.116004	0.1740	0.058	0.0579	0.6944	0.1161	1.3929
295	0.116088	0.1741	0.058	0.0579	0.6944	0.1163	1.3944
295.2	0.116173	0.1743	0.058	0.0579	0.6944	0.1164	1.3959
295.4	0.116258	0.1744	0.058	0.0579	0.6944	0.1165	1.3974
295.6	0.116342	0.1745	0.058	0.0579	0.6944	0.1166	1.3990
295.8	0.116427	0.1746	0.058	0.0579	0.6944	0.1168	1.4005
296	0.116511	0.1748	0.058	0.0579	0.6944	0.1169	1.4020
296.2	0.116596	0.1749	0.058	0.0579	0.6944	0.1170	1.4035
296.4	0.116681	0.1750	0.058	0.0579	0.6944	0.1172	1.4050
296.6	0.116765	0.1751	0.058	0.0579	0.6944	0.1173	1.4066
296.8	0.11685	0.1753	0.058	0.0579	0.6944	0.1174	1.4081
297	0.116935	0.1754	0.058	0.0579	0.6944	0.1175	1.4096
297.2	0.117019	0.1755	0.058	0.0579	0.6944	0.1177	1.4111
297.4	0.117104	0.1757	0.058	0.0579	0.6944	0.1178	1.4127
297.6	0.117189	0.1758	0.058	0.0579	0.6944	0.1179	1.4142
297.8	0.117274	0.1759	0.058	0.0579	0.6944	0.1180	1.4157
298	0.117358	0.1760	0.058	0.0579	0.6944	0.1182	1.4172
298.2	0.117443	0.1762	0.058	0.0579	0.6944	0.1183	1.4188
298.4	0.117528	0.1763	0.058	0.0579	0.6944	0.1184	1.4203
298.6	0.117612	0.1764	0.058	0.0579	0.6944	0.1185	1.4218
298.8	0.117697	0.1765	0.058	0.0579	0.6944	0.1187	1.4233
299	0.117782	0.1767	0.058	0.0579	0.6944	0.1188	1.4249
299.2	0.117867	0.1768	0.058	0.0579	0.6944	0.1189	1.4264

299.4	0.117952	0.1769	0.058	0.0579	0.6944	0.1191	1.4279
299.6	0.118036	0.1771	0.058	0.0579	0.6944	0.1192	1.4294
299.8	0.118121	0.1772	0.058	0.0579	0.6944	0.1193	1.4310
300	0.118206	0.1773	0.058	0.0579	0.6944	0.1194	1.4325
300.2	0.118291	0.1774	0.058	0.0579	0.6944	0.1196	1.4340
300.4	0.118376	0.1776	0.058	0.0579	0.6944	0.1197	1.4356
300.6	0.118461	0.1777	0.058	0.0579	0.6944	0.1198	1.4371
300.8	0.118545	0.1778	0.058	0.0579	0.6944	0.1199	1.4386
301	0.11863	0.1779	0.058	0.0579	0.6944	0.1201	1.4401
301.2	0.118715	0.1781	0.058	0.0579	0.6944	0.1202	1.4417
301.4	0.1188	0.1782	0.058	0.0579	0.6944	0.1203	1.4432
301.6	0.118885	0.1783	0.058	0.0579	0.6944	0.1205	1.4447
301.8	0.11897	0.1785	0.058	0.0579	0.6944	0.1206	1.4462
302	0.119055	0.1786	0.058	0.0579	0.6944	0.1207	1.4478
302.2	0.11914	0.1787	0.058	0.0579	0.6944	0.1208	1.4493
302.4	0.119225	0.1788	0.058	0.0579	0.6944	0.1210	1.4508
302.6	0.11931	0.1790	0.058	0.0579	0.6944	0.1211	1.4524
302.8	0.119394	0.1791	0.058	0.0579	0.6944	0.1212	1.4539
303	0.119479	0.1792	0.058	0.0579	0.6944	0.1213	1.4554
303.2	0.119564	0.1793	0.058	0.0579	0.6944	0.1215	1.4570
303.4	0.119649	0.1795	0.058	0.0579	0.6944	0.1216	1.4585
303.6	0.119734	0.1796	0.058	0.0579	0.6944	0.1217	1.4600
303.8	0.119819	0.1797	0.058	0.0579	0.6944	0.1219	1.4615
304	0.119904	0.1799	0.058	0.0579	0.6944	0.1220	1.4631
304.2	0.119989	0.1800	0.058	0.0579	0.6944	0.1221	1.4646
304.4	0.120074	0.1801	0.058	0.0579	0.6944	0.1222	1.4661
304.6	0.120159	0.1802	0.058	0.0579	0.6944	0.1224	1.4677
304.8	0.120245	0.1804	0.058	0.0579	0.6944	0.1225	1.4692
305	0.12033	0.1805	0.058	0.0579	0.6944	0.1226	1.4707
305.2	0.120415	0.1806	0.058	0.0579	0.6944	0.1228	1.4723
305.4	0.1205	0.1807	0.058	0.0579	0.6944	0.1229	1.4738
305.6	0.120585	0.1809	0.058	0.0579	0.6944	0.1230	1.4753
305.8	0.12067	0.1810	0.058	0.0579	0.6944	0.1231	1.4768
306	0.120755	0.1811	0.058	0.0579	0.6944	0.1233	1.4784
306.2	0.12084	0.1813	0.058	0.0579	0.6944	0.1234	1.4799
306.4	0.120925	0.1814	0.058	0.0579	0.6944	0.1235	1.4814
306.6	0.12101	0.1815	0.058	0.0579	0.6944	0.1236	1.4830
306.8	0.121095	0.1816	0.058	0.0579	0.6944	0.1238	1.4845
307	0.121181	0.1818	0.058	0.0579	0.6944	0.1239	1.4860
307.2	0.121266	0.1819	0.058	0.0579	0.6944	0.1240	1.4876
307.4	0.121351	0.1820	0.058	0.0579	0.6944	0.1242	1.4891
307.6	0.121436	0.1822	0.058	0.0579	0.6944	0.1243	1.4906
307.8	0.121521	0.1823	0.058	0.0579	0.6944	0.1244	1.4922
308	0.121607	0.1824	0.058	0.0579	0.6944	0.1245	1.4937
308.2	0.121692	0.1825	0.058	0.0579	0.6944	0.1247	1.4952
308.4	0.121777	0.1827	0.058	0.0579	0.6944	0.1248	1.4968
308.6	0.121862	0.1828	0.058	0.0579	0.6944	0.1249	1.4983

308.8	0.121947	0.1829	0.058	0.0579	0.6944	0.1251	1.4998
309	0.122033	0.1830	0.058	0.0579	0.6944	0.1252	1.5014
309.2	0.122118	0.1832	0.058	0.0579	0.6944	0.1253	1.5029
309.4	0.122203	0.1833	0.058	0.0579	0.6944	0.1254	1.5044
309.6	0.122288	0.1834	0.058	0.0579	0.6944	0.1256	1.5060
309.8	0.122374	0.1836	0.058	0.0579	0.6944	0.1257	1.5075
310	0.122459	0.1837	0.058	0.0579	0.6944	0.1258	1.5090
310.2	0.122544	0.1838	0.058	0.0579	0.6944	0.1259	1.5106
310.4	0.12263	0.1839	0.058	0.0579	0.6944	0.1261	1.5121
310.6	0.122715	0.1841	0.058	0.0579	0.6944	0.1262	1.5137
310.8	0.1228	0.1842	0.058	0.0579	0.6944	0.1263	1.5152
311	0.122886	0.1843	0.058	0.0579	0.6944	0.1265	1.5167
311.2	0.122971	0.1845	0.058	0.0579	0.6944	0.1266	1.5183
311.4	0.123056	0.1846	0.058	0.0579	0.6944	0.1267	1.5198
311.6	0.123142	0.1847	0.058	0.0579	0.6944	0.1268	1.5213
311.8	0.123227	0.1848	0.058	0.0579	0.6944	0.1270	1.5229
312	0.123312	0.1850	0.058	0.0579	0.6944	0.1271	1.5244
312.2	0.123398	0.1851	0.058	0.0579	0.6944	0.1272	1.5259
312.4	0.123483	0.1852	0.058	0.0579	0.6944	0.1274	1.5275
312.6	0.123569	0.1854	0.058	0.0579	0.6944	0.1275	1.5290
312.8	0.123654	0.1855	0.058	0.0579	0.6944	0.1276	1.5306
313	0.12374	0.1856	0.058	0.0579	0.6944	0.1277	1.5321
313.2	0.123825	0.1857	0.058	0.0579	0.6944	0.1279	1.5336
313.4	0.12391	0.1859	0.058	0.0579	0.6944	0.1280	1.5352
313.6	0.123996	0.1860	0.058	0.0579	0.6944	0.1281	1.5367
313.8	0.124081	0.1861	0.058	0.0579	0.6944	0.1283	1.5383
314	0.124167	0.1863	0.058	0.0579	0.6944	0.1284	1.5398
314.2	0.124252	0.1864	0.058	0.0579	0.6944	0.1285	1.5413
314.4	0.124338	0.1865	0.058	0.0579	0.6944	0.1286	1.5429
314.6	0.124423	0.1866	0.058	0.0579	0.6944	0.1288	1.5444
314.8	0.124509	0.1868	0.058	0.0579	0.6944	0.1289	1.5459
315	0.124594	0.1869	0.058	0.0579	0.6944	0.1290	1.5475
315.2	0.12468	0.1870	0.058	0.0579	0.6944	0.1291	1.5490
315.4	0.124765	0.1871	0.058	0.0579	0.6944	0.1293	1.5506
315.6	0.124851	0.1873	0.058	0.0579	0.6944	0.1294	1.5521
315.8	0.124937	0.1874	0.058	0.0579	0.6944	0.1295	1.5536
316	0.125022	0.1875	0.058	0.0579	0.6944	0.1297	1.5552
316.2	0.125108	0.1877	0.058	0.0579	0.6944	0.1298	1.5567
316.4	0.125193	0.1878	0.058	0.0579	0.6944	0.1299	1.5583
316.6	0.125279	0.1879	0.058	0.0579	0.6944	0.1300	1.5598
316.8	0.125365	0.1880	0.058	0.0579	0.6944	0.1302	1.5613
317	0.12545	0.1882	0.058	0.0579	0.6944	0.1303	1.5629
317.2	0.125536	0.1883	0.058	0.0579	0.6944	0.1304	1.5644
317.4	0.125622	0.1884	0.058	0.0579	0.6944	0.1306	1.5660
317.6	0.125707	0.1886	0.058	0.0579	0.6944	0.1307	1.5675
317.8	0.125793	0.1887	0.058	0.0579	0.6944	0.1308	1.5691
318	0.125878	0.1888	0.058	0.0579	0.6944	0.1309	1.5706

318.2	0.125964	0.1889	0.058	0.0579	0.6944	0.1311	1.5721
318.4	0.12605	0.1891	0.058	0.0579	0.6944	0.1312	1.5737
318.6	0.126136	0.1892	0.058	0.0579	0.6944	0.1313	1.5752
318.8	0.126221	0.1893	0.058	0.0579	0.6944	0.1315	1.5768
319	0.126307	0.1895	0.058	0.0579	0.6944	0.1316	1.5783
319.2	0.126393	0.1896	0.058	0.0579	0.6944	0.1317	1.5799
319.4	0.126478	0.1897	0.058	0.0579	0.6944	0.1318	1.5814
319.6	0.126564	0.1898	0.058	0.0579	0.6944	0.1320	1.5829
319.8	0.12665	0.1900	0.058	0.0579	0.6944	0.1321	1.5845
320	0.126736	0.1901	0.058	0.0579	0.6944	0.1322	1.5860
320.2	0.126822	0.1902	0.058	0.0579	0.6944	0.1324	1.5876
320.4	0.126907	0.1904	0.058	0.0579	0.6944	0.1325	1.5891
320.6	0.126993	0.1905	0.058	0.0579	0.6944	0.1326	1.5907
320.8	0.127079	0.1906	0.058	0.0579	0.6944	0.1327	1.5922
321	0.127165	0.1907	0.058	0.0579	0.6944	0.1329	1.5937
321.2	0.127251	0.1909	0.058	0.0579	0.6944	0.1330	1.5953
321.4	0.127336	0.1910	0.058	0.0579	0.6944	0.1331	1.5968
321.6	0.127422	0.1911	0.058	0.0579	0.6944	0.1333	1.5984
321.8	0.127508	0.1913	0.058	0.0579	0.6944	0.1334	1.5999
322	0.127594	0.1914	0.058	0.0579	0.6944	0.1335	1.6015
322.2	0.12768	0.1915	0.058	0.0579	0.6944	0.1336	1.6030
322.4	0.127766	0.1916	0.058	0.0579	0.6944	0.1338	1.6046
322.6	0.127852	0.1918	0.058	0.0579	0.6944	0.1339	1.6061
322.8	0.127938	0.1919	0.058	0.0579	0.6944	0.1340	1.6077
323	0.128024	0.1920	0.058	0.0579	0.6944	0.1342	1.6092
323.2	0.128109	0.1922	0.058	0.0579	0.6944	0.1343	1.6108
323.4	0.128195	0.1923	0.058	0.0579	0.6944	0.1344	1.6123
323.6	0.128281	0.1924	0.058	0.0579	0.6944	0.1346	1.6138
323.8	0.128367	0.1926	0.058	0.0579	0.6944	0.1347	1.6154
324	0.128453	0.1927	0.058	0.0579	0.6944	0.1348	1.6169
324.2	0.128539	0.1928	0.058	0.0579	0.6944	0.1349	1.6185
324.4	0.128625	0.1929	0.058	0.0579	0.6944	0.1351	1.6200
324.6	0.128711	0.1931	0.058	0.0579	0.6944	0.1352	1.6216
324.8	0.128797	0.1932	0.058	0.0579	0.6944	0.1353	1.6231
325	0.128883	0.1933	0.058	0.0579	0.6944	0.1355	1.6247
325.2	0.128969	0.1935	0.058	0.0579	0.6944	0.1356	1.6262
325.4	0.129055	0.1936	0.058	0.0579	0.6944	0.1357	1.6278
325.6	0.129141	0.1937	0.058	0.0579	0.6944	0.1358	1.6293
325.8	0.129227	0.1938	0.058	0.0579	0.6944	0.1360	1.6309
326	0.129313	0.1940	0.058	0.0579	0.6944	0.1361	1.6324
326.2	0.1294	0.1941	0.058	0.0579	0.6944	0.1362	1.6340
326.4	0.129486	0.1942	0.058	0.0579	0.6944	0.1364	1.6355
326.6	0.129572	0.1944	0.058	0.0579	0.6944	0.1365	1.6371
326.8	0.129658	0.1945	0.058	0.0579	0.6944	0.1366	1.6386
327	0.129744	0.1946	0.058	0.0579	0.6944	0.1367	1.6402
327.2	0.12983	0.1947	0.058	0.0579	0.6944	0.1369	1.6417
327.4	0.129916	0.1949	0.058	0.0579	0.6944	0.1370	1.6433

327.6	0.130002	0.1950	0.058	0.0579	0.6944	0.1371	1.6448
327.8	0.130088	0.1951	0.058	0.0579	0.6944	0.1373	1.6464
328	0.130175	0.1953	0.058	0.0579	0.6944	0.1374	1.6479
328.2	0.130261	0.1954	0.058	0.0579	0.6944	0.1375	1.6495
328.4	0.130347	0.1955	0.058	0.0579	0.6944	0.1377	1.6510
328.6	0.130433	0.1956	0.058	0.0579	0.6944	0.1378	1.6526
328.8	0.130519	0.1958	0.058	0.0579	0.6944	0.1379	1.6541
329	0.130606	0.1959	0.058	0.0579	0.6944	0.1380	1.6557
329.2	0.130692	0.1960	0.058	0.0579	0.6944	0.1382	1.6572
329.4	0.130778	0.1962	0.058	0.0579	0.6944	0.1383	1.6588
329.6	0.130864	0.1963	0.058	0.0579	0.6944	0.1384	1.6603
329.8	0.130951	0.1964	0.058	0.0579	0.6944	0.1386	1.6619
330	0.131037	0.1966	0.058	0.0579	0.6944	0.1387	1.6634
330.2	0.131123	0.1967	0.058	0.0579	0.6944	0.1388	1.6650
330.4	0.131209	0.1968	0.058	0.0579	0.6944	0.1389	1.6665
330.6	0.131296	0.1969	0.058	0.0579	0.6944	0.1391	1.6681
330.8	0.131382	0.1971	0.058	0.0579	0.6944	0.1392	1.6697
331	0.131468	0.1972	0.058	0.0579	0.6944	0.1393	1.6712
331.2	0.131555	0.1973	0.058	0.0579	0.6944	0.1395	1.6728
331.4	0.131641	0.1975	0.058	0.0579	0.6944	0.1396	1.6743
331.6	0.131727	0.1976	0.058	0.0579	0.6944	0.1397	1.6759
331.8	0.131814	0.1977	0.058	0.0579	0.6944	0.1398	1.6774
332	0.1319	0.1978	0.058	0.0579	0.6944	0.1400	1.6790
332.2	0.131986	0.1980	0.058	0.0579	0.6944	0.1401	1.6805
332.4	0.132073	0.1981	0.058	0.0579	0.6944	0.1402	1.6821
332.6	0.132159	0.1982	0.058	0.0579	0.6944	0.1404	1.6836
332.8	0.132245	0.1984	0.058	0.0579	0.6944	0.1405	1.6852
333	0.132332	0.1985	0.058	0.0579	0.6944	0.1406	1.6868
333.2	0.132418	0.1986	0.058	0.0579	0.6944	0.1408	1.6883
333.4	0.132505	0.1988	0.058	0.0579	0.6944	0.1409	1.6899
333.6	0.132591	0.1989	0.058	0.0579	0.6944	0.1410	1.6914
333.8	0.132678	0.1990	0.058	0.0579	0.6944	0.1411	1.6930
334	0.132764	0.1991	0.058	0.0579	0.6944	0.1413	1.6945
334.2	0.132851	0.1993	0.058	0.0579	0.6944	0.1414	1.6961
334.4	0.132937	0.1994	0.058	0.0579	0.6944	0.1415	1.6976
334.6	0.133024	0.1995	0.058	0.0579	0.6944	0.1417	1.6992
334.8	0.13311	0.1997	0.058	0.0579	0.6944	0.1418	1.7008
335	0.133197	0.1998	0.058	0.0579	0.6944	0.1419	1.7023
335.2	0.133283	0.1999	0.058	0.0579	0.6944	0.1421	1.7039
335.4	0.13337	0.2001	0.058	0.0579	0.6944	0.1422	1.7054
335.6	0.133456	0.2002	0.058	0.0579	0.6944	0.1423	1.7070
335.8	0.133543	0.2003	0.058	0.0579	0.6944	0.1424	1.7085
336	0.133629	0.2004	0.058	0.0579	0.6944	0.1426	1.7101
336.2	0.133716	0.2006	0.058	0.0579	0.6944	0.1427	1.7117
336.4	0.133802	0.2007	0.058	0.0579	0.6944	0.1428	1.7132
336.6	0.133889	0.2008	0.058	0.0579	0.6944	0.1430	1.7148
336.8	0.133976	0.2010	0.058	0.0579	0.6944	0.1431	1.7163

337	0.134062	0.2011	0.058	0.0579	0.6944	0.1432	1.7179
337.2	0.134149	0.2012	0.058	0.0579	0.6944	0.1434	1.7195
337.4	0.134235	0.2014	0.058	0.0579	0.6944	0.1435	1.7210
337.6	0.134322	0.2015	0.058	0.0579	0.6944	0.1436	1.7226
337.8	0.134409	0.2016	0.058	0.0579	0.6944	0.1437	1.7241
338	0.134495	0.2017	0.058	0.0579	0.6944	0.1439	1.7257
338.2	0.134582	0.2019	0.058	0.0579	0.6944	0.1440	1.7273
338.4	0.134669	0.2020	0.058	0.0579	0.6944	0.1441	1.7288
338.6	0.134755	0.2021	0.058	0.0579	0.6944	0.1443	1.7304
338.8	0.134842	0.2023	0.058	0.0579	0.6944	0.1444	1.7319
339	0.134929	0.2024	0.058	0.0579	0.6944	0.1445	1.7335
339.2	0.135015	0.2025	0.058	0.0579	0.6944	0.1447	1.7351
339.4	0.135102	0.2027	0.058	0.0579	0.6944	0.1448	1.7366
339.6	0.135189	0.2028	0.058	0.0579	0.6944	0.1449	1.7382
339.8	0.135276	0.2029	0.058	0.0579	0.6944	0.1450	1.7397
340	0.135362	0.2030	0.058	0.0579	0.6944	0.1452	1.7413
340.2	0.135449	0.2032	0.058	0.0579	0.6944	0.1453	1.7429
340.4	0.135536	0.2033	0.058	0.0579	0.6944	0.1454	1.7444
340.6	0.135623	0.2034	0.058	0.0579	0.6944	0.1456	1.7460
340.8	0.13571	0.2036	0.058	0.0579	0.6944	0.1457	1.7475
341	0.135796	0.2037	0.058	0.0579	0.6944	0.1458	1.7491
341.2	0.135883	0.2038	0.058	0.0579	0.6944	0.1460	1.7507
341.4	0.13597	0.2040	0.058	0.0579	0.6944	0.1461	1.7522
341.6	0.136057	0.2041	0.058	0.0579	0.6944	0.1462	1.7538
341.8	0.136144	0.2042	0.058	0.0579	0.6944	0.1463	1.7554
342	0.136231	0.2043	0.058	0.0579	0.6944	0.1465	1.7569
342.2	0.136317	0.2045	0.058	0.0579	0.6944	0.1466	1.7585
342.4	0.136404	0.2046	0.058	0.0579	0.6944	0.1467	1.7601
342.6	0.136491	0.2047	0.058	0.0579	0.6944	0.1469	1.7616
342.8	0.136578	0.2049	0.058	0.0579	0.6944	0.1470	1.7632
343	0.136665	0.2050	0.058	0.0579	0.6944	0.1471	1.7647
343.2	0.136752	0.2051	0.058	0.0579	0.6944	0.1473	1.7663
343.4	0.136839	0.2053	0.058	0.0579	0.6944	0.1474	1.7679
343.6	0.136926	0.2054	0.058	0.0579	0.6944	0.1475	1.7694
343.8	0.137013	0.2055	0.058	0.0579	0.6944	0.1476	1.7710
344	0.1371	0.2056	0.058	0.0579	0.6944	0.1478	1.7726
344.2	0.137187	0.2058	0.058	0.0579	0.6944	0.1479	1.7741
344.4	0.137274	0.2059	0.058	0.0579	0.6944	0.1480	1.7757
344.6	0.137361	0.2060	0.058	0.0579	0.6944	0.1482	1.7773
344.8	0.137448	0.2062	0.058	0.0579	0.6944	0.1483	1.7788
345	0.137535	0.2063	0.058	0.0579	0.6944	0.1484	1.7804
345.2	0.137622	0.2064	0.058	0.0579	0.6944	0.1486	1.7820
345.4	0.137709	0.2066	0.058	0.0579	0.6944	0.1487	1.7835
345.6	0.137796	0.2067	0.058	0.0579	0.6944	0.1488	1.7851
345.8	0.137883	0.2068	0.058	0.0579	0.6944	0.1490	1.7867
346	0.13797	0.2070	0.058	0.0579	0.6944	0.1491	1.7882
346.2	0.138057	0.2071	0.058	0.0579	0.6944	0.1492	1.7898

346.4	0.138144	0.2072	0.058	0.0579	0.6944	0.1493	1.7914
346.6	0.138231	0.2073	0.058	0.0579	0.6944	0.1495	1.7929
346.8	0.138318	0.2075	0.058	0.0579	0.6944	0.1496	1.7945
347	0.138405	0.2076	0.058	0.0579	0.6944	0.1497	1.7961
347.2	0.138492	0.2077	0.058	0.0579	0.6944	0.1499	1.7976
347.4	0.13858	0.2079	0.058	0.0579	0.6944	0.1500	1.7992
347.6	0.138667	0.2080	0.058	0.0579	0.6944	0.1501	1.8008
347.8	0.138754	0.2081	0.058	0.0579	0.6944	0.1503	1.8023
348	0.138841	0.2083	0.058	0.0579	0.6944	0.1504	1.8039
348.2	0.138928	0.2084	0.058	0.0579	0.6944	0.1505	1.8055
348.4	0.139015	0.2085	0.058	0.0579	0.6944	0.1507	1.8070
348.6	0.139103	0.2087	0.058	0.0579	0.6944	0.1508	1.8086
348.8	0.13919	0.2088	0.058	0.0579	0.6944	0.1509	1.8102
349	0.139277	0.2089	0.058	0.0579	0.6944	0.1510	1.8118
349.2	0.139364	0.2090	0.058	0.0579	0.6944	0.1512	1.8133
349.4	0.139451	0.2092	0.058	0.0579	0.6944	0.1513	1.8149
349.6	0.139539	0.2093	0.058	0.0579	0.6944	0.1514	1.8165
349.8	0.139626	0.2094	0.058	0.0579	0.6944	0.1516	1.8180
350	0.139713	0.2096	0.058	0.0579	0.6944	0.1517	1.8196
350.2	0.139801	0.2097	0.058	0.0579	0.6944	0.1518	1.8212
350.4	0.139888	0.2098	0.058	0.0579	0.6944	0.1520	1.8228
350.6	0.139975	0.2100	0.058	0.0579	0.6944	0.1521	1.8243
350.8	0.140062	0.2101	0.058	0.0579	0.6944	0.1522	1.8259
351	0.14015	0.2102	0.058	0.0579	0.6944	0.1524	1.8275
351.2	0.140237	0.2104	0.058	0.0579	0.6944	0.1525	1.8290
351.4	0.140324	0.2105	0.058	0.0579	0.6944	0.1526	1.8306
351.6	0.140412	0.2106	0.058	0.0579	0.6944	0.1527	1.8322
351.8	0.140499	0.2107	0.058	0.0579	0.6944	0.1529	1.8338
352	0.140586	0.2109	0.058	0.0579	0.6944	0.1530	1.8353
352.2	0.140674	0.2110	0.058	0.0579	0.6944	0.1531	1.8369
352.4	0.140761	0.2111	0.058	0.0579	0.6944	0.1533	1.8385
352.6	0.140849	0.2113	0.058	0.0579	0.6944	0.1534	1.8400
352.8	0.140936	0.2114	0.058	0.0579	0.6944	0.1535	1.8416
353	0.141023	0.2115	0.058	0.0579	0.6944	0.1537	1.8432
353.2	0.141111	0.2117	0.058	0.0579	0.6944	0.1538	1.8448
353.4	0.141198	0.2118	0.058	0.0579	0.6944	0.1539	1.8463
353.6	0.141286	0.2119	0.058	0.0579	0.6944	0.1541	1.8479
353.8	0.141373	0.2121	0.058	0.0579	0.6944	0.1542	1.8495
354	0.141461	0.2122	0.058	0.0579	0.6944	0.1543	1.8511
354.2	0.141548	0.2123	0.058	0.0579	0.6944	0.1545	1.8526
354.4	0.141636	0.2125	0.058	0.0579	0.6944	0.1546	1.8542
354.6	0.141723	0.2126	0.058	0.0579	0.6944	0.1547	1.8558
354.8	0.141811	0.2127	0.058	0.0579	0.6944	0.1548	1.8574
355	0.141898	0.2128	0.058	0.0579	0.6944	0.1550	1.8589
355.2	0.141986	0.2130	0.058	0.0579	0.6944	0.1551	1.8605
355.4	0.142073	0.2131	0.058	0.0579	0.6944	0.1552	1.8621
355.6	0.142161	0.2132	0.058	0.0579	0.6944	0.1554	1.8637

355.8	0.142248	0.2134	0.058	0.0579	0.6944	0.1555	1.8652
356	0.142336	0.2135	0.058	0.0579	0.6944	0.1556	1.8668
356.2	0.142424	0.2136	0.058	0.0579	0.6944	0.1558	1.8684
356.4	0.142511	0.2138	0.058	0.0579	0.6944	0.1559	1.8700
356.6	0.142599	0.2139	0.058	0.0579	0.6944	0.1560	1.8715
356.8	0.142686	0.2140	0.058	0.0579	0.6944	0.1562	1.8731
357	0.142774	0.2142	0.058	0.0579	0.6944	0.1563	1.8747
357.2	0.142862	0.2143	0.058	0.0579	0.6944	0.1564	1.8763
357.4	0.142949	0.2144	0.058	0.0579	0.6944	0.1566	1.8779
357.6	0.143037	0.2146	0.058	0.0579	0.6944	0.1567	1.8794
357.8	0.143125	0.2147	0.058	0.0579	0.6944	0.1568	1.8810
358	0.143212	0.2148	0.058	0.0579	0.6944	0.1569	1.8826
358.2	0.1433	0.2149	0.058	0.0579	0.6944	0.1571	1.8842
358.4	0.143388	0.2151	0.058	0.0579	0.6944	0.1572	1.8857
358.6	0.143475	0.2152	0.058	0.0579	0.6944	0.1573	1.8873
358.8	0.143563	0.2153	0.058	0.0579	0.6944	0.1575	1.8889
359	0.143651	0.2155	0.058	0.0579	0.6944	0.1576	1.8905
359.2	0.143739	0.2156	0.058	0.0579	0.6944	0.1577	1.8921
359.4	0.143826	0.2157	0.058	0.0579	0.6944	0.1579	1.8936
359.6	0.143914	0.2159	0.058	0.0579	0.6944	0.1580	1.8952
359.8	0.144002	0.2160	0.058	0.0579	0.6944	0.1581	1.8968
360	0.14409	0.2161	0.058	0.0579	0.6944	0.1583	1.8984
360.2	0.144177	0.2163	0.058	0.0579	0.6944	0.1584	1.9000
360.4	0.144265	0.2164	0.058	0.0579	0.6944	0.1585	1.9015
360.6	0.144353	0.2165	0.058	0.0579	0.6944	0.1587	1.9031
360.8	0.144441	0.2167	0.058	0.0579	0.6944	0.1588	1.9047
361	0.144529	0.2168	0.058	0.0579	0.6944	0.1589	1.9063
361.2	0.144617	0.2169	0.058	0.0579	0.6944	0.1591	1.9079
361.4	0.144704	0.2171	0.058	0.0579	0.6944	0.1592	1.9094
361.6	0.144792	0.2172	0.058	0.0579	0.6944	0.1593	1.9110
361.8	0.14488	0.2173	0.058	0.0579	0.6944	0.1594	1.9126
362	0.144968	0.2175	0.058	0.0579	0.6944	0.1596	1.9142
362.2	0.145056	0.2176	0.058	0.0579	0.6944	0.1597	1.9158
362.4	0.145144	0.2177	0.058	0.0579	0.6944	0.1598	1.9174
362.6	0.145232	0.2178	0.058	0.0579	0.6944	0.1600	1.9189
362.8	0.14532	0.2180	0.058	0.0579	0.6944	0.1601	1.9205
363	0.145408	0.2181	0.058	0.0579	0.6944	0.1602	1.9221
363.2	0.145496	0.2182	0.058	0.0579	0.6944	0.1604	1.9237
363.4	0.145583	0.2184	0.058	0.0579	0.6944	0.1605	1.9253
363.6	0.145671	0.2185	0.058	0.0579	0.6944	0.1606	1.9268
363.8	0.145759	0.2186	0.058	0.0579	0.6944	0.1608	1.9284
364	0.145847	0.2188	0.058	0.0579	0.6944	0.1609	1.9300
364.2	0.145935	0.2189	0.058	0.0579	0.6944	0.1610	1.9316
364.4	0.146023	0.2190	0.058	0.0579	0.6944	0.1612	1.9332
364.6	0.146111	0.2192	0.058	0.0579	0.6944	0.1613	1.9348
364.8	0.146199	0.2193	0.058	0.0579	0.6944	0.1614	1.9364
365	0.146288	0.2194	0.058	0.0579	0.6944	0.1616	1.9379

365.2	0.146376	0.2196	0.058	0.0579	0.6944	0.1617	1.9395
365.4	0.146464	0.2197	0.058	0.0579	0.6944	0.1618	1.9411
365.6	0.146552	0.2198	0.058	0.0579	0.6944	0.1620	1.9427
365.8	0.14664	0.2200	0.058	0.0579	0.6944	0.1621	1.9443
366	0.146728	0.2201	0.058	0.0579	0.6944	0.1622	1.9459
366.2	0.146816	0.2202	0.058	0.0579	0.6944	0.1624	1.9475
366.4	0.146904	0.2204	0.058	0.0579	0.6944	0.1625	1.9490
366.6	0.146992	0.2205	0.058	0.0579	0.6944	0.1626	1.9506
366.8	0.14708	0.2206	0.058	0.0579	0.6944	0.1628	1.9522
367	0.147169	0.2208	0.058	0.0579	0.6944	0.1629	1.9538
367.2	0.147257	0.2209	0.058	0.0579	0.6944	0.1630	1.9554
367.4	0.147345	0.2210	0.058	0.0579	0.6944	0.1631	1.9570
367.6	0.147433	0.2211	0.058	0.0579	0.6944	0.1633	1.9586
367.8	0.147521	0.2213	0.058	0.0579	0.6944	0.1634	1.9601
368	0.147609	0.2214	0.058	0.0579	0.6944	0.1635	1.9617
368.2	0.147698	0.2215	0.058	0.0579	0.6944	0.1637	1.9633
368.4	0.147786	0.2217	0.058	0.0579	0.6944	0.1638	1.9649
368.6	0.147874	0.2218	0.058	0.0579	0.6944	0.1639	1.9665
368.8	0.147962	0.2219	0.058	0.0579	0.6944	0.1641	1.9681
369	0.148051	0.2221	0.058	0.0579	0.6944	0.1642	1.9697
369.2	0.148139	0.2222	0.058	0.0579	0.6944	0.1643	1.9713
369.4	0.148227	0.2223	0.058	0.0579	0.6944	0.1645	1.9728
369.6	0.148315	0.2225	0.058	0.0579	0.6944	0.1646	1.9744
369.8	0.148404	0.2226	0.058	0.0579	0.6944	0.1647	1.9760
370	0.148492	0.2227	0.058	0.0579	0.6944	0.1649	1.9776
370.2	0.14858	0.2229	0.058	0.0579	0.6944	0.1650	1.9792
370.4	0.148669	0.2230	0.058	0.0579	0.6944	0.1651	1.9808
370.6	0.148757	0.2231	0.058	0.0579	0.6944	0.1653	1.9824
370.8	0.148845	0.2233	0.058	0.0579	0.6944	0.1654	1.9840
371	0.148934	0.2234	0.058	0.0579	0.6944	0.1655	1.9856
371.2	0.149022	0.2235	0.058	0.0579	0.6944	0.1657	1.9872
371.4	0.14911	0.2237	0.058	0.0579	0.6944	0.1658	1.9887
371.6	0.149199	0.2238	0.058	0.0579	0.6944	0.1659	1.9903
371.8	0.149287	0.2239	0.058	0.0579	0.6944	0.1661	1.9919
372	0.149376	0.2241	0.058	0.0579	0.6944	0.1662	1.9935
372.2	0.149464	0.2242	0.058	0.0579	0.6944	0.1663	1.9951
372.4	0.149553	0.2243	0.058	0.0579	0.6944	0.1665	1.9967
372.6	0.149641	0.2245	0.058	0.0579	0.6944	0.1666	1.9983
372.8	0.149729	0.2246	0.058	0.0579	0.6944	0.1667	1.9999
373	0.149818	0.2247	0.058	0.0579	0.6944	0.1669	2.0015
373.2	0.149906	0.2249	0.058	0.0579	0.6944	0.1670	2.0031
373.4	0.149995	0.2250	0.058	0.0579	0.6944	0.1671	2.0047
373.6	0.150083	0.2251	0.058	0.0579	0.6944	0.1673	2.0063
373.8	0.150172	0.2253	0.058	0.0579	0.6944	0.1674	2.0079
374	0.15026	0.2254	0.058	0.0579	0.6944	0.1675	2.0094
374.2	0.150349	0.2255	0.058	0.0579	0.6944	0.1677	2.0110
374.4	0.150437	0.2257	0.058	0.0579	0.6944	0.1678	2.0126

374.6	0.150526	0.2258	0.058	0.0579	0.6944	0.1679	2.0142
374.8	0.150615	0.2259	0.058	0.0579	0.6944	0.1681	2.0158
375	0.150703	0.2261	0.058	0.0579	0.6944	0.1682	2.0174
375.2	0.150792	0.2262	0.058	0.0579	0.6944	0.1683	2.0190
375.4	0.15088	0.2263	0.058	0.0579	0.6944	0.1685	2.0206
375.6	0.150969	0.2265	0.058	0.0579	0.6944	0.1686	2.0222
375.8	0.151058	0.2266	0.058	0.0579	0.6944	0.1687	2.0238
376	0.151146	0.2267	0.058	0.0579	0.6944	0.1688	2.0254
376.2	0.151235	0.2269	0.058	0.0579	0.6944	0.1690	2.0270
376.4	0.151323	0.2270	0.058	0.0579	0.6944	0.1691	2.0286
376.6	0.151412	0.2271	0.058	0.0579	0.6944	0.1692	2.0302
376.8	0.151501	0.2273	0.058	0.0579	0.6944	0.1694	2.0318
377	0.151589	0.2274	0.058	0.0579	0.6944	0.1695	2.0334
377.2	0.151678	0.2275	0.058	0.0579	0.6944	0.1696	2.0350
377.4	0.151767	0.2277	0.058	0.0579	0.6944	0.1698	2.0366
377.6	0.151856	0.2278	0.058	0.0579	0.6944	0.1699	2.0382
377.8	0.151944	0.2279	0.058	0.0579	0.6944	0.1700	2.0398
378	0.152033	0.2280	0.058	0.0579	0.6944	0.1702	2.0414
378.2	0.152122	0.2282	0.058	0.0579	0.6944	0.1703	2.0429
378.4	0.152211	0.2283	0.058	0.0579	0.6944	0.1704	2.0445
378.6	0.152299	0.2284	0.058	0.0579	0.6944	0.1706	2.0461
378.8	0.152388	0.2286	0.058	0.0579	0.6944	0.1707	2.0477
379	0.152477	0.2287	0.058	0.0579	0.6944	0.1708	2.0493
379.2	0.152566	0.2288	0.058	0.0579	0.6944	0.1710	2.0509
379.4	0.152654	0.2290	0.058	0.0579	0.6944	0.1711	2.0525
379.6	0.152743	0.2291	0.058	0.0579	0.6944	0.1712	2.0541
379.8	0.152832	0.2292	0.058	0.0579	0.6944	0.1714	2.0557
380	0.152921	0.2294	0.058	0.0579	0.6944	0.1715	2.0573
380.2	0.15301	0.2295	0.058	0.0579	0.6944	0.1716	2.0589
380.4	0.153099	0.2296	0.058	0.0579	0.6944	0.1718	2.0605
380.6	0.153188	0.2298	0.058	0.0579	0.6944	0.1719	2.0621
380.8	0.153276	0.2299	0.058	0.0579	0.6944	0.1720	2.0637
381	0.153365	0.2300	0.058	0.0579	0.6944	0.1722	2.0653
381.2	0.153454	0.2302	0.058	0.0579	0.6944	0.1723	2.0669
381.4	0.153543	0.2303	0.058	0.0579	0.6944	0.1724	2.0685
381.6	0.153632	0.2304	0.058	0.0579	0.6944	0.1726	2.0701
381.8	0.153721	0.2306	0.058	0.0579	0.6944	0.1727	2.0717
382	0.15381	0.2307	0.058	0.0579	0.6944	0.1728	2.0733
382.2	0.153899	0.2308	0.058	0.0579	0.6944	0.1730	2.0749
382.4	0.153988	0.2310	0.058	0.0579	0.6944	0.1731	2.0765
382.6	0.154077	0.2311	0.058	0.0579	0.6944	0.1732	2.0781
382.8	0.154166	0.2312	0.058	0.0579	0.6944	0.1734	2.0797
383	0.154255	0.2314	0.058	0.0579	0.6944	0.1735	2.0813
383.2	0.154344	0.2315	0.058	0.0579	0.6944	0.1736	2.0829
383.4	0.154433	0.2316	0.058	0.0579	0.6944	0.1738	2.0845
383.6	0.154522	0.2318	0.058	0.0579	0.6944	0.1739	2.0861
383.8	0.154611	0.2319	0.058	0.0579	0.6944	0.1740	2.0878

384	0.1547	0.2321	0.058	0.0579	0.6944	0.1742	2.0894
384.2	0.154789	0.2322	0.058	0.0579	0.6944	0.1743	2.0910
384.4	0.154878	0.2323	0.058	0.0579	0.6944	0.1744	2.0926
384.6	0.154967	0.2325	0.058	0.0579	0.6944	0.1746	2.0942
384.8	0.155056	0.2326	0.058	0.0579	0.6944	0.1747	2.0958
385	0.155146	0.2327	0.058	0.0579	0.6944	0.1748	2.0974
385.2	0.155235	0.2329	0.058	0.0579	0.6944	0.1750	2.0990
385.4	0.155324	0.2330	0.058	0.0579	0.6944	0.1751	2.1006
385.6	0.155413	0.2331	0.058	0.0579	0.6944	0.1752	2.1022
385.8	0.155502	0.2333	0.058	0.0579	0.6944	0.1754	2.1038
386	0.155591	0.2334	0.058	0.0579	0.6944	0.1755	2.1054
386.2	0.15568	0.2335	0.058	0.0579	0.6944	0.1757	2.1070
386.4	0.15577	0.2337	0.058	0.0579	0.6944	0.1758	2.1086
386.6	0.155859	0.2338	0.058	0.0579	0.6944	0.1759	2.1102
386.8	0.155948	0.2339	0.058	0.0579	0.6944	0.1761	2.1118
387	0.156037	0.2341	0.058	0.0579	0.6944	0.1762	2.1134
387.2	0.156127	0.2342	0.058	0.0579	0.6944	0.1763	2.1150
387.4	0.156216	0.2343	0.058	0.0579	0.6944	0.1765	2.1166
387.6	0.156305	0.2345	0.058	0.0579	0.6944	0.1766	2.1182
387.8	0.156394	0.2346	0.058	0.0579	0.6944	0.1767	2.1198
388	0.156484	0.2347	0.058	0.0579	0.6944	0.1769	2.1215
388.2	0.156573	0.2349	0.058	0.0579	0.6944	0.1770	2.1231
388.4	0.156662	0.2350	0.058	0.0579	0.6944	0.1771	2.1247
388.6	0.156751	0.2351	0.058	0.0579	0.6944	0.1773	2.1263
388.8	0.156841	0.2353	0.058	0.0579	0.6944	0.1774	2.1279
389	0.15693	0.2354	0.058	0.0579	0.6944	0.1775	2.1295
389.2	0.157019	0.2355	0.058	0.0579	0.6944	0.1777	2.1311
389.4	0.157109	0.2357	0.058	0.0579	0.6944	0.1778	2.1327
389.6	0.157198	0.2358	0.058	0.0579	0.6944	0.1779	2.1343
389.8	0.157288	0.2359	0.058	0.0579	0.6944	0.1781	2.1359
390	0.157377	0.2361	0.058	0.0579	0.6944	0.1782	2.1375
390.2	0.157466	0.2362	0.058	0.0579	0.6944	0.1783	2.1391
390.4	0.157556	0.2363	0.058	0.0579	0.6944	0.1785	2.1408
390.6	0.157645	0.2365	0.058	0.0579	0.6944	0.1786	2.1424
390.8	0.157735	0.2366	0.058	0.0579	0.6944	0.1787	2.1440
391	0.157824	0.2367	0.058	0.0579	0.6944	0.1789	2.1456
391.2	0.157913	0.2369	0.058	0.0579	0.6944	0.1790	2.1472
391.4	0.158003	0.2370	0.058	0.0579	0.6944	0.1791	2.1488
391.6	0.158092	0.2371	0.058	0.0579	0.6944	0.1793	2.1504
391.8	0.158182	0.2373	0.058	0.0579	0.6944	0.1794	2.1520
392	0.158271	0.2374	0.058	0.0579	0.6944	0.1795	2.1536
392.2	0.158361	0.2375	0.058	0.0579	0.6944	0.1797	2.1552
392.4	0.15845	0.2377	0.058	0.0579	0.6944	0.1798	2.1569
392.6	0.15854	0.2378	0.058	0.0579	0.6944	0.1799	2.1585
392.8	0.15863	0.2379	0.058	0.0579	0.6944	0.1801	2.1601
393	0.158719	0.2381	0.058	0.0579	0.6944	0.1802	2.1617
393.2	0.158809	0.2382	0.058	0.0579	0.6944	0.1803	2.1633

393.4	0.158898	0.2383	0.058	0.0579	0.6944	0.1805	2.1649
393.6	0.158988	0.2385	0.058	0.0579	0.6944	0.1806	2.1665
393.8	0.159077	0.2386	0.058	0.0579	0.6944	0.1807	2.1681
394	0.159167	0.2388	0.058	0.0579	0.6944	0.1809	2.1698
394.2	0.159257	0.2389	0.058	0.0579	0.6944	0.1810	2.1714
394.4	0.159346	0.2390	0.058	0.0579	0.6944	0.1811	2.1730
394.6	0.159436	0.2392	0.058	0.0579	0.6944	0.1813	2.1746
394.8	0.159526	0.2393	0.058	0.0579	0.6944	0.1814	2.1762
395	0.159615	0.2394	0.058	0.0579	0.6944	0.1816	2.1778
395.2	0.159705	0.2396	0.058	0.0579	0.6944	0.1817	2.1794
395.4	0.159795	0.2397	0.058	0.0579	0.6944	0.1818	2.1811
395.6	0.159884	0.2398	0.058	0.0579	0.6944	0.1820	2.1827
395.8	0.159974	0.2400	0.058	0.0579	0.6944	0.1821	2.1843
396	0.160064	0.2401	0.058	0.0579	0.6944	0.1822	2.1859
396.2	0.160153	0.2402	0.058	0.0579	0.6944	0.1824	2.1875
396.4	0.160243	0.2404	0.058	0.0579	0.6944	0.1825	2.1891
396.6	0.160333	0.2405	0.058	0.0579	0.6944	0.1826	2.1907
396.8	0.160423	0.2406	0.058	0.0579	0.6944	0.1828	2.1924
397	0.160513	0.2408	0.058	0.0579	0.6944	0.1829	2.1940
397.2	0.160602	0.2409	0.058	0.0579	0.6944	0.1830	2.1956
397.4	0.160692	0.2410	0.058	0.0579	0.6944	0.1832	2.1972
397.6	0.160782	0.2412	0.058	0.0579	0.6944	0.1833	2.1988
397.8	0.160872	0.2413	0.058	0.0579	0.6944	0.1834	2.2004
398	0.160962	0.2414	0.058	0.0579	0.6944	0.1836	2.2021
398.2	0.161051	0.2416	0.058	0.0579	0.6944	0.1837	2.2037
398.4	0.161141	0.2417	0.058	0.0579	0.6944	0.1838	2.2053
398.6	0.161231	0.2418	0.058	0.0579	0.6944	0.1840	2.2069
398.8	0.161321	0.2420	0.058	0.0579	0.6944	0.1841	2.2085
399	0.161411	0.2421	0.058	0.0579	0.6944	0.1842	2.2101
399.2	0.161501	0.2423	0.058	0.0579	0.6944	0.1844	2.2118
399.4	0.161591	0.2424	0.058	0.0579	0.6944	0.1845	2.2134
399.6	0.161681	0.2425	0.058	0.0579	0.6944	0.1847	2.2150
399.8	0.161771	0.2427	0.058	0.0579	0.6944	0.1848	2.2166
400	0.16186	0.2428	0.058	0.0579	0.6944	0.1849	2.2182
400.2	0.16195	0.2429	0.058	0.0579	0.6944	0.1851	2.2199
400.4	0.16204	0.2431	0.058	0.0579	0.6944	0.1852	2.2215
400.6	0.16213	0.2432	0.058	0.0579	0.6944	0.1853	2.2231
400.8	0.16222	0.2433	0.058	0.0579	0.6944	0.1855	2.2247
401	0.16231	0.2435	0.058	0.0579	0.6944	0.1856	2.2263
401.2	0.1624	0.2436	0.058	0.0579	0.6944	0.1857	2.2280
401.4	0.16249	0.2437	0.058	0.0579	0.6944	0.1859	2.2296
401.6	0.16258	0.2439	0.058	0.0579	0.6944	0.1860	2.2312
401.8	0.162671	0.2440	0.058	0.0579	0.6944	0.1861	2.2328
402	0.162761	0.2441	0.058	0.0579	0.6944	0.1863	2.2344
402.2	0.162851	0.2443	0.058	0.0579	0.6944	0.1864	2.2361
402.4	0.162941	0.2444	0.058	0.0579	0.6944	0.1865	2.2377
402.6	0.163031	0.2445	0.058	0.0579	0.6944	0.1867	2.2393

402.8	0.163121	0.2447	0.058	0.0579	0.6944	0.1868	2.2409
403	0.163211	0.2448	0.058	0.0579	0.6944	0.1869	2.2425
403.2	0.163301	0.2450	0.058	0.0579	0.6944	0.1871	2.2442
403.4	0.163391	0.2451	0.058	0.0579	0.6944	0.1872	2.2458
403.6	0.163481	0.2452	0.058	0.0579	0.6944	0.1874	2.2474
403.8	0.163572	0.2454	0.058	0.0579	0.6944	0.1875	2.2490
404	0.163662	0.2455	0.058	0.0579	0.6944	0.1876	2.2507
404.2	0.163752	0.2456	0.058	0.0579	0.6944	0.1878	2.2523
404.4	0.163842	0.2458	0.058	0.0579	0.6944	0.1879	2.2539
404.6	0.163932	0.2459	0.058	0.0579	0.6944	0.1880	2.2555
404.8	0.164023	0.2460	0.058	0.0579	0.6944	0.1882	2.2571
405	0.164113	0.2462	0.058	0.0579	0.6944	0.1883	2.2588
405.2	0.164203	0.2463	0.058	0.0579	0.6944	0.1884	2.2604
405.4	0.164293	0.2464	0.058	0.0579	0.6944	0.1886	2.2620
405.6	0.164384	0.2466	0.058	0.0579	0.6944	0.1887	2.2636
405.8	0.164474	0.2467	0.058	0.0579	0.6944	0.1888	2.2653
406	0.164564	0.2468	0.058	0.0579	0.6944	0.1890	2.2669
406.2	0.164654	0.2470	0.058	0.0579	0.6944	0.1891	2.2685
406.4	0.164745	0.2471	0.058	0.0579	0.6944	0.1892	2.2701
406.6	0.164835	0.2473	0.058	0.0579	0.6944	0.1894	2.2718
406.8	0.164925	0.2474	0.058	0.0579	0.6944	0.1895	2.2734
407	0.165016	0.2475	0.058	0.0579	0.6944	0.1897	2.2750
407.2	0.165106	0.2477	0.058	0.0579	0.6944	0.1898	2.2767
407.4	0.165196	0.2478	0.058	0.0579	0.6944	0.1899	2.2783
407.6	0.165287	0.2479	0.058	0.0579	0.6944	0.1901	2.2799
407.8	0.165377	0.2481	0.058	0.0579	0.6944	0.1902	2.2815
408	0.165468	0.2482	0.058	0.0579	0.6944	0.1903	2.2832
408.2	0.165558	0.2483	0.058	0.0579	0.6944	0.1905	2.2848
408.4	0.165648	0.2485	0.058	0.0579	0.6944	0.1906	2.2864
408.6	0.165739	0.2486	0.058	0.0579	0.6944	0.1907	2.2880
408.8	0.165829	0.2487	0.058	0.0579	0.6944	0.1909	2.2897
409	0.16592	0.2489	0.058	0.0579	0.6944	0.1910	2.2913
409.2	0.16601	0.2490	0.058	0.0579	0.6944	0.1911	2.2929
409.4	0.166101	0.2492	0.058	0.0579	0.6944	0.1913	2.2946
409.6	0.166191	0.2493	0.058	0.0579	0.6944	0.1914	2.2962
409.8	0.166282	0.2494	0.058	0.0579	0.6944	0.1916	2.2978
410	0.166372	0.2496	0.058	0.0579	0.6944	0.1917	2.2994
410.2	0.166463	0.2497	0.058	0.0579	0.6944	0.1918	2.3011
410.4	0.166553	0.2498	0.058	0.0579	0.6944	0.1920	2.3027
410.6	0.166644	0.2500	0.058	0.0579	0.6944	0.1921	2.3043
410.8	0.166734	0.2501	0.058	0.0579	0.6944	0.1922	2.3060
411	0.166825	0.2502	0.058	0.0579	0.6944	0.1924	2.3076
411.2	0.166915	0.2504	0.058	0.0579	0.6944	0.1925	2.3092
411.4	0.167006	0.2505	0.058	0.0579	0.6944	0.1926	2.3108
411.6	0.167097	0.2506	0.058	0.0579	0.6944	0.1928	2.3125
411.8	0.167187	0.2508	0.058	0.0579	0.6944	0.1929	2.3141
412	0.167278	0.2509	0.058	0.0579	0.6944	0.1930	2.3157

412.2	0.167369	0.2511	0.058	0.0579	0.6944	0.1932	2.3174
412.4	0.167459	0.2512	0.058	0.0579	0.6944	0.1933	2.3190
412.6	0.16755	0.2513	0.058	0.0579	0.6944	0.1935	2.3206
412.8	0.167641	0.2515	0.058	0.0579	0.6944	0.1936	2.3223
413	0.167731	0.2516	0.058	0.0579	0.6944	0.1937	2.3239
413.2	0.167822	0.2517	0.058	0.0579	0.6944	0.1939	2.3255
413.4	0.167913	0.2519	0.058	0.0579	0.6944	0.1940	2.3272
413.6	0.168003	0.2520	0.058	0.0579	0.6944	0.1941	2.3288
413.8	0.168094	0.2521	0.058	0.0579	0.6944	0.1943	2.3304
414	0.168185	0.2523	0.058	0.0579	0.6944	0.1944	2.3321
414.2	0.168276	0.2524	0.058	0.0579	0.6944	0.1945	2.3337
414.4	0.168366	0.2525	0.058	0.0579	0.6944	0.1947	2.3353
414.6	0.168457	0.2527	0.058	0.0579	0.6944	0.1948	2.3370
414.8	0.168548	0.2528	0.058	0.0579	0.6944	0.1950	2.3386
415	0.168639	0.2530	0.058	0.0579	0.6944	0.1951	2.3402
415.2	0.16873	0.2531	0.058	0.0579	0.6944	0.1952	2.3419
415.4	0.16882	0.2532	0.058	0.0579	0.6944	0.1954	2.3435
415.6	0.168911	0.2534	0.058	0.0579	0.6944	0.1955	2.3451
415.8	0.169002	0.2535	0.058	0.0579	0.6944	0.1956	2.3468
416	0.169093	0.2536	0.058	0.0579	0.6944	0.1958	2.3484
416.2	0.169184	0.2538	0.058	0.0579	0.6944	0.1959	2.3500
416.4	0.169275	0.2539	0.058	0.0579	0.6944	0.1960	2.3517
416.6	0.169366	0.2540	0.058	0.0579	0.6944	0.1962	2.3533
416.8	0.169456	0.2542	0.058	0.0579	0.6944	0.1963	2.3550
417	0.169547	0.2543	0.058	0.0579	0.6944	0.1965	2.3566
417.2	0.169638	0.2545	0.058	0.0579	0.6944	0.1966	2.3582
417.4	0.169729	0.2546	0.058	0.0579	0.6944	0.1967	2.3599
417.6	0.16982	0.2547	0.058	0.0579	0.6944	0.1969	2.3615
417.8	0.169911	0.2549	0.058	0.0579	0.6944	0.1970	2.3631
418	0.170002	0.2550	0.058	0.0579	0.6944	0.1971	2.3648
418.2	0.170093	0.2551	0.058	0.0579	0.6944	0.1973	2.3664
418.4	0.170184	0.2553	0.058	0.0579	0.6944	0.1974	2.3681
418.6	0.170275	0.2554	0.058	0.0579	0.6944	0.1975	2.3697
418.8	0.170366	0.2555	0.058	0.0579	0.6944	0.1977	2.3713
419	0.170457	0.2557	0.058	0.0579	0.6944	0.1978	2.3730
419.2	0.170548	0.2558	0.058	0.0579	0.6944	0.1980	2.3746
419.4	0.170639	0.2560	0.058	0.0579	0.6944	0.1981	2.3762
419.6	0.17073	0.2561	0.058	0.0579	0.6944	0.1982	2.3779
419.8	0.170821	0.2562	0.058	0.0579	0.6944	0.1984	2.3795
420	0.170913	0.2564	0.058	0.0579	0.6944	0.1985	2.3812
420.2	0.171004	0.2565	0.058	0.0579	0.6944	0.1986	2.3828
420.4	0.171095	0.2566	0.058	0.0579	0.6944	0.1988	2.3844
420.6	0.171186	0.2568	0.058	0.0579	0.6944	0.1989	2.3861
420.8	0.171277	0.2569	0.058	0.0579	0.6944	0.1990	2.3877
421	0.171368	0.2571	0.058	0.0579	0.6944	0.1992	2.3894
421.2	0.171459	0.2572	0.058	0.0579	0.6944	0.1993	2.3910
421.4	0.17155	0.2573	0.058	0.0579	0.6944	0.1995	2.3926

421.6	0.171642	0.2575	0.058	0.0579	0.6944	0.1996	2.3943
421.8	0.171733	0.2576	0.058	0.0579	0.6944	0.1997	2.3959
422	0.171824	0.2577	0.058	0.0579	0.6944	0.1999	2.3976
422.2	0.171915	0.2579	0.058	0.0579	0.6944	0.2000	2.3992
422.4	0.172007	0.2580	0.058	0.0579	0.6944	0.2001	2.4009
422.6	0.172098	0.2581	0.058	0.0579	0.6944	0.2003	2.4025
422.8	0.172189	0.2583	0.058	0.0579	0.6944	0.2004	2.4041
423	0.17228	0.2584	0.058	0.0579	0.6944	0.2006	2.4058
423.2	0.172372	0.2586	0.058	0.0579	0.6944	0.2007	2.4074
423.4	0.172463	0.2587	0.058	0.0579	0.6944	0.2008	2.4091
423.6	0.172554	0.2588	0.058	0.0579	0.6944	0.2010	2.4107
423.8	0.172645	0.2590	0.058	0.0579	0.6944	0.2011	2.4124
424	0.172737	0.2591	0.058	0.0579	0.6944	0.2012	2.4140
424.2	0.172828	0.2592	0.058	0.0579	0.6944	0.2014	2.4156
424.4	0.172919	0.2594	0.058	0.0579	0.6944	0.2015	2.4173
424.6	0.173011	0.2595	0.058	0.0579	0.6944	0.2016	2.4189
424.8	0.173102	0.2597	0.058	0.0579	0.6944	0.2018	2.4206
425	0.173194	0.2598	0.058	0.0579	0.6944	0.2019	2.4222
425.2	0.173285	0.2599	0.058	0.0579	0.6944	0.2021	2.4239
425.4	0.173376	0.2601	0.058	0.0579	0.6944	0.2022	2.4255
425.6	0.173468	0.2602	0.058	0.0579	0.6944	0.2023	2.4272
425.8	0.173559	0.2603	0.058	0.0579	0.6944	0.2025	2.4288
426	0.173651	0.2605	0.058	0.0579	0.6944	0.2026	2.4304
426.2	0.173742	0.2606	0.058	0.0579	0.6944	0.2027	2.4321
426.4	0.173834	0.2608	0.058	0.0579	0.6944	0.2029	2.4337
426.6	0.173925	0.2609	0.058	0.0579	0.6944	0.2030	2.4354
426.8	0.174017	0.2610	0.058	0.0579	0.6944	0.2032	2.4370
427	0.174108	0.2612	0.058	0.0579	0.6944	0.2033	2.4387
427.2	0.1742	0.2613	0.058	0.0579	0.6944	0.2034	2.4403
427.4	0.174291	0.2614	0.058	0.0579	0.6944	0.2036	2.4420
427.6	0.174383	0.2616	0.058	0.0579	0.6944	0.2037	2.4436
427.8	0.174474	0.2617	0.058	0.0579	0.6944	0.2038	2.4453
428	0.174566	0.2618	0.058	0.0579	0.6944	0.2040	2.4469
428.2	0.174657	0.2620	0.058	0.0579	0.6944	0.2041	2.4486
428.4	0.174749	0.2621	0.058	0.0579	0.6944	0.2043	2.4502
428.6	0.174841	0.2623	0.058	0.0579	0.6944	0.2044	2.4519
428.8	0.174932	0.2624	0.058	0.0579	0.6944	0.2045	2.4535
429	0.175024	0.2625	0.058	0.0579	0.6944	0.2047	2.4552
429.2	0.175115	0.2627	0.058	0.0579	0.6944	0.2048	2.4568
429.4	0.175207	0.2628	0.058	0.0579	0.6944	0.2049	2.4585
429.6	0.175299	0.2629	0.058	0.0579	0.6944	0.2051	2.4601
429.8	0.17539	0.2631	0.058	0.0579	0.6944	0.2052	2.4618
430	0.175482	0.2632	0.058	0.0579	0.6944	0.2054	2.4634
430.2	0.175574	0.2634	0.058	0.0579	0.6944	0.2055	2.4651
430.4	0.175666	0.2635	0.058	0.0579	0.6944	0.2056	2.4667
430.6	0.175757	0.2636	0.058	0.0579	0.6944	0.2058	2.4684
430.8	0.175849	0.2638	0.058	0.0579	0.6944	0.2059	2.4700

431	0.175941	0.2639	0.058	0.0579	0.6944	0.2060	2.4717
431.2	0.176032	0.2640	0.058	0.0579	0.6944	0.2062	2.4733
431.4	0.176124	0.2642	0.058	0.0579	0.6944	0.2063	2.4750
431.6	0.176216	0.2643	0.058	0.0579	0.6944	0.2065	2.4766
431.8	0.176308	0.2645	0.058	0.0579	0.6944	0.2066	2.4783
432	0.1764	0.2646	0.058	0.0579	0.6944	0.2067	2.4799
432.2	0.176491	0.2647	0.058	0.0579	0.6944	0.2069	2.4816
432.4	0.176583	0.2649	0.058	0.0579	0.6944	0.2070	2.4832
432.6	0.176675	0.2650	0.058	0.0579	0.6944	0.2071	2.4849
432.8	0.176767	0.2652	0.058	0.0579	0.6944	0.2073	2.4865
433	0.176859	0.2653	0.058	0.0579	0.6944	0.2074	2.4882
433.2	0.176951	0.2654	0.058	0.0579	0.6944	0.2076	2.4898
433.4	0.177043	0.2656	0.058	0.0579	0.6944	0.2077	2.4915
433.6	0.177134	0.2657	0.058	0.0579	0.6944	0.2078	2.4931
433.8	0.177226	0.2658	0.058	0.0579	0.6944	0.2080	2.4948
434	0.177318	0.2660	0.058	0.0579	0.6944	0.2081	2.4965
434.2	0.17741	0.2661	0.058	0.0579	0.6944	0.2082	2.4981
434.4	0.177502	0.2663	0.058	0.0579	0.6944	0.2084	2.4998
434.6	0.177594	0.2664	0.058	0.0579	0.6944	0.2085	2.5014
434.8	0.177686	0.2665	0.058	0.0579	0.6944	0.2087	2.5031
435	0.177778	0.2667	0.058	0.0579	0.6944	0.2088	2.5047
435.2	0.17787	0.2668	0.058	0.0579	0.6944	0.2089	2.5064
435.4	0.177962	0.2669	0.058	0.0579	0.6944	0.2091	2.5080
435.6	0.178054	0.2671	0.058	0.0579	0.6944	0.2092	2.5097
435.8	0.178146	0.2672	0.058	0.0579	0.6944	0.2093	2.5114
436	0.178238	0.2674	0.058	0.0579	0.6944	0.2095	2.5130
436.2	0.17833	0.2675	0.058	0.0579	0.6944	0.2096	2.5147
436.4	0.178422	0.2676	0.058	0.0579	0.6944	0.2098	2.5163
436.6	0.178514	0.2678	0.058	0.0579	0.6944	0.2099	2.5180
436.8	0.178606	0.2679	0.058	0.0579	0.6944	0.2100	2.5196
437	0.178699	0.2680	0.058	0.0579	0.6944	0.2102	2.5213
437.2	0.178791	0.2682	0.058	0.0579	0.6944	0.2103	2.5230
437.4	0.178883	0.2683	0.058	0.0579	0.6944	0.2105	2.5246
437.6	0.178975	0.2685	0.058	0.0579	0.6944	0.2106	2.5263
437.8	0.179067	0.2686	0.058	0.0579	0.6944	0.2107	2.5279
438	0.179159	0.2687	0.058	0.0579	0.6944	0.2109	2.5296
438.2	0.179251	0.2689	0.058	0.0579	0.6944	0.2110	2.5313
438.4	0.179344	0.2690	0.058	0.0579	0.6944	0.2111	2.5329
438.6	0.179436	0.2692	0.058	0.0579	0.6944	0.2113	2.5346
438.8	0.179528	0.2693	0.058	0.0579	0.6944	0.2114	2.5362
439	0.17962	0.2694	0.058	0.0579	0.6944	0.2116	2.5379
439.2	0.179712	0.2696	0.058	0.0579	0.6944	0.2117	2.5395
439.4	0.179805	0.2697	0.058	0.0579	0.6944	0.2118	2.5412
439.6	0.179897	0.2698	0.058	0.0579	0.6944	0.2120	2.5429
439.8	0.179989	0.2700	0.058	0.0579	0.6944	0.2121	2.5445
440	0.180082	0.2701	0.058	0.0579	0.6944	0.2123	2.5462
440.2	0.180174	0.2703	0.058	0.0579	0.6944	0.2124	2.5479

440.4	0.180266	0.2704	0.058	0.0579	0.6944	0.2125	2.5495
440.6	0.180358	0.2705	0.058	0.0579	0.6944	0.2127	2.5512
440.8	0.180451	0.2707	0.058	0.0579	0.6944	0.2128	2.5528
441	0.180543	0.2708	0.058	0.0579	0.6944	0.2129	2.5545
441.2	0.180636	0.2710	0.058	0.0579	0.6944	0.2131	2.5562
441.4	0.180728	0.2711	0.058	0.0579	0.6944	0.2132	2.5578
441.6	0.18082	0.2712	0.058	0.0579	0.6944	0.2134	2.5595
441.8	0.180913	0.2714	0.058	0.0579	0.6944	0.2135	2.5612
442	0.181005	0.2715	0.058	0.0579	0.6944	0.2136	2.5628
442.2	0.181097	0.2716	0.058	0.0579	0.6944	0.2138	2.5645
442.4	0.18119	0.2718	0.058	0.0579	0.6944	0.2139	2.5661
442.6	0.181282	0.2719	0.058	0.0579	0.6944	0.2141	2.5678
442.8	0.181375	0.2721	0.058	0.0579	0.6944	0.2142	2.5695
443	0.181467	0.2722	0.058	0.0579	0.6944	0.2143	2.5711
443.2	0.18156	0.2723	0.058	0.0579	0.6944	0.2145	2.5728
443.4	0.181652	0.2725	0.058	0.0579	0.6944	0.2146	2.5745
443.6	0.181745	0.2726	0.058	0.0579	0.6944	0.2147	2.5761
443.8	0.181837	0.2728	0.058	0.0579	0.6944	0.2149	2.5778
444	0.18193	0.2729	0.058	0.0579	0.6944	0.2150	2.5795
444.2	0.182022	0.2730	0.058	0.0579	0.6944	0.2152	2.5811
444.4	0.182115	0.2732	0.058	0.0579	0.6944	0.2153	2.5828
444.6	0.182207	0.2733	0.058	0.0579	0.6944	0.2154	2.5845
444.8	0.1823	0.2735	0.058	0.0579	0.6944	0.2156	2.5861
445	0.182393	0.2736	0.058	0.0579	0.6944	0.2157	2.5878
445.2	0.182485	0.2737	0.058	0.0579	0.6944	0.2159	2.5895
445.4	0.182578	0.2739	0.058	0.0579	0.6944	0.2160	2.5911
445.6	0.18267	0.2740	0.058	0.0579	0.6944	0.2161	2.5928
445.8	0.182763	0.2741	0.058	0.0579	0.6944	0.2163	2.5945
446	0.182856	0.2743	0.058	0.0579	0.6944	0.2164	2.5961
446.2	0.182948	0.2744	0.058	0.0579	0.6944	0.2166	2.5978
446.4	0.183041	0.2746	0.058	0.0579	0.6944	0.2167	2.5995
446.6	0.183134	0.2747	0.058	0.0579	0.6944	0.2168	2.6011
446.8	0.183227	0.2748	0.058	0.0579	0.6944	0.2170	2.6028
447	0.183319	0.2750	0.058	0.0579	0.6944	0.2171	2.6045
447.2	0.183412	0.2751	0.058	0.0579	0.6944	0.2172	2.6061
447.4	0.183505	0.2753	0.058	0.0579	0.6944	0.2174	2.6078
447.6	0.183597	0.2754	0.058	0.0579	0.6944	0.2175	2.6095
447.8	0.18369	0.2755	0.058	0.0579	0.6944	0.2177	2.6111
448	0.183783	0.2757	0.058	0.0579	0.6944	0.2178	2.6128
448.2	0.183876	0.2758	0.058	0.0579	0.6944	0.2179	2.6145
448.4	0.183969	0.2760	0.058	0.0579	0.6944	0.2181	2.6162
448.6	0.184061	0.2761	0.058	0.0579	0.6944	0.2182	2.6178
448.8	0.184154	0.2762	0.058	0.0579	0.6944	0.2184	2.6195
449	0.184247	0.2764	0.058	0.0579	0.6944	0.2185	2.6212
449.2	0.18434	0.2765	0.058	0.0579	0.6944	0.2186	2.6228
449.4	0.184433	0.2766	0.058	0.0579	0.6944	0.2188	2.6245
449.6	0.184526	0.2768	0.058	0.0579	0.6944	0.2189	2.6262

449.8	0.184619	0.2769	0.058	0.0579	0.6944	0.2191	2.6279
450	0.184711	0.2771	0.058	0.0579	0.6944	0.2192	2.6295
450.2	0.184804	0.2772	0.058	0.0579	0.6944	0.2193	2.6312
450.4	0.184897	0.2773	0.058	0.0579	0.6944	0.2195	2.6329
450.6	0.18499	0.2775	0.058	0.0579	0.6944	0.2196	2.6345
450.8	0.185083	0.2776	0.058	0.0579	0.6944	0.2198	2.6362
451	0.185176	0.2778	0.058	0.0579	0.6944	0.2199	2.6379
451.2	0.185269	0.2779	0.058	0.0579	0.6944	0.2200	2.6396
451.4	0.185362	0.2780	0.058	0.0579	0.6944	0.2202	2.6412
451.6	0.185455	0.2782	0.058	0.0579	0.6944	0.2203	2.6429
451.8	0.185548	0.2783	0.058	0.0579	0.6944	0.2205	2.6446
452	0.185641	0.2785	0.058	0.0579	0.6944	0.2206	2.6463
452.2	0.185734	0.2786	0.058	0.0579	0.6944	0.2207	2.6479
452.4	0.185827	0.2787	0.058	0.0579	0.6944	0.2209	2.6496
452.6	0.18592	0.2789	0.058	0.0579	0.6944	0.2210	2.6513
452.8	0.186013	0.2790	0.058	0.0579	0.6944	0.2211	2.6530
453	0.186106	0.2792	0.058	0.0579	0.6944	0.2213	2.6546
453.2	0.1862	0.2793	0.058	0.0579	0.6944	0.2214	2.6563
453.4	0.186293	0.2794	0.058	0.0579	0.6944	0.2216	2.6580
453.6	0.186386	0.2796	0.058	0.0579	0.6944	0.2217	2.6597
453.8	0.186479	0.2797	0.058	0.0579	0.6944	0.2218	2.6613
454	0.186572	0.2799	0.058	0.0579	0.6944	0.2220	2.6630
454.2	0.186665	0.2800	0.058	0.0579	0.6944	0.2221	2.6647
454.4	0.186758	0.2801	0.058	0.0579	0.6944	0.2223	2.6664
454.6	0.186852	0.2803	0.058	0.0579	0.6944	0.2224	2.6680
454.8	0.186945	0.2804	0.058	0.0579	0.6944	0.2225	2.6697
455	0.187038	0.2806	0.058	0.0579	0.6944	0.2227	2.6714
455.2	0.187131	0.2807	0.058	0.0579	0.6944	0.2228	2.6731
455.4	0.187224	0.2808	0.058	0.0579	0.6944	0.2230	2.6748
455.6	0.187318	0.2810	0.058	0.0579	0.6944	0.2231	2.6764
455.8	0.187411	0.2811	0.058	0.0579	0.6944	0.2232	2.6781
456	0.187504	0.2813	0.058	0.0579	0.6944	0.2234	2.6798
456.2	0.187598	0.2814	0.058	0.0579	0.6944	0.2235	2.6815
456.4	0.187691	0.2815	0.058	0.0579	0.6944	0.2237	2.6832
456.6	0.187784	0.2817	0.058	0.0579	0.6944	0.2238	2.6848
456.8	0.187877	0.2818	0.058	0.0579	0.6944	0.2239	2.6865
457	0.187971	0.2820	0.058	0.0579	0.6944	0.2241	2.6882
457.2	0.188064	0.2821	0.058	0.0579	0.6944	0.2242	2.6899
457.4	0.188158	0.2822	0.058	0.0579	0.6944	0.2244	2.6916
457.6	0.188251	0.2824	0.058	0.0579	0.6944	0.2245	2.6932
457.8	0.188344	0.2825	0.058	0.0579	0.6944	0.2246	2.6949
458	0.188438	0.2827	0.058	0.0579	0.6944	0.2248	2.6966
458.2	0.188531	0.2828	0.058	0.0579	0.6944	0.2249	2.6983
458.4	0.188625	0.2829	0.058	0.0579	0.6944	0.2251	2.7000
458.6	0.188718	0.2831	0.058	0.0579	0.6944	0.2252	2.7016
458.8	0.188811	0.2832	0.058	0.0579	0.6944	0.2253	2.7033
459	0.188905	0.2834	0.058	0.0579	0.6944	0.2255	2.7050

459.2	0.188998	0.2835	0.058	0.0579	0.6944	0.2256	2.7067
459.4	0.189092	0.2836	0.058	0.0579	0.6944	0.2258	2.7084
459.6	0.189185	0.2838	0.058	0.0579	0.6944	0.2259	2.7101
459.8	0.189279	0.2839	0.058	0.0579	0.6944	0.2260	2.7117
460	0.189372	0.2841	0.058	0.0579	0.6944	0.2262	2.7134
460.2	0.189466	0.2842	0.058	0.0579	0.6944	0.2263	2.7151
460.4	0.18956	0.2843	0.058	0.0579	0.6944	0.2265	2.7168
460.6	0.189653	0.2845	0.058	0.0579	0.6944	0.2266	2.7185
460.8	0.189747	0.2846	0.058	0.0579	0.6944	0.2267	2.7202
461	0.18984	0.2848	0.058	0.0579	0.6944	0.2269	2.7218
461.2	0.189934	0.2849	0.058	0.0579	0.6944	0.2270	2.7235
461.4	0.190027	0.2850	0.058	0.0579	0.6944	0.2272	2.7252
461.6	0.190121	0.2852	0.058	0.0579	0.6944	0.2273	2.7269
461.8	0.190215	0.2853	0.058	0.0579	0.6944	0.2275	2.7286
462	0.190308	0.2855	0.058	0.0579	0.6944	0.2276	2.7303
462.2	0.190402	0.2856	0.058	0.0579	0.6944	0.2277	2.7320
462.4	0.190496	0.2857	0.058	0.0579	0.6944	0.2279	2.7336
462.6	0.190589	0.2859	0.058	0.0579	0.6944	0.2280	2.7353
462.8	0.190683	0.2860	0.058	0.0579	0.6944	0.2282	2.7370
463	0.190777	0.2862	0.058	0.0579	0.6944	0.2283	2.7387
463.2	0.190871	0.2863	0.058	0.0579	0.6944	0.2284	2.7404
463.4	0.190964	0.2864	0.058	0.0579	0.6944	0.2286	2.7421
463.6	0.191058	0.2866	0.058	0.0579	0.6944	0.2287	2.7438
463.8	0.191152	0.2867	0.058	0.0579	0.6944	0.2289	2.7454
464	0.191246	0.2869	0.058	0.0579	0.6944	0.2290	2.7471
464.2	0.191339	0.2870	0.058	0.0579	0.6944	0.2291	2.7488
464.4	0.191433	0.2871	0.058	0.0579	0.6944	0.2293	2.7505
464.6	0.191527	0.2873	0.058	0.0579	0.6944	0.2294	2.7522
464.8	0.191621	0.2874	0.058	0.0579	0.6944	0.2296	2.7539
465	0.191715	0.2876	0.058	0.0579	0.6944	0.2297	2.7556
465.2	0.191809	0.2877	0.058	0.0579	0.6944	0.2298	2.7573
465.4	0.191903	0.2879	0.058	0.0579	0.6944	0.2300	2.7590
465.6	0.191996	0.2880	0.058	0.0579	0.6944	0.2301	2.7606
465.8	0.19209	0.2881	0.058	0.0579	0.6944	0.2303	2.7623
466	0.192184	0.2883	0.058	0.0579	0.6944	0.2304	2.7640
466.2	0.192278	0.2884	0.058	0.0579	0.6944	0.2305	2.7657
466.4	0.192372	0.2886	0.058	0.0579	0.6944	0.2307	2.7674
466.6	0.192466	0.2887	0.058	0.0579	0.6944	0.2308	2.7691
466.8	0.19256	0.2888	0.058	0.0579	0.6944	0.2310	2.7708
467	0.192654	0.2890	0.058	0.0579	0.6944	0.2311	2.7725
467.2	0.192748	0.2891	0.058	0.0579	0.6944	0.2313	2.7742
467.4	0.192842	0.2893	0.058	0.0579	0.6944	0.2314	2.7759
467.6	0.192936	0.2894	0.058	0.0579	0.6944	0.2315	2.7776
467.8	0.19303	0.2895	0.058	0.0579	0.6944	0.2317	2.7792
468	0.193124	0.2897	0.058	0.0579	0.6944	0.2318	2.7809
468.2	0.193218	0.2898	0.058	0.0579	0.6944	0.2320	2.7826
468.4	0.193312	0.2900	0.058	0.0579	0.6944	0.2321	2.7843

468.6	0.193406	0.2901	0.058	0.0579	0.6944	0.2322	2.7860
468.8	0.1935	0.2903	0.058	0.0579	0.6944	0.2324	2.7877
469	0.193594	0.2904	0.058	0.0579	0.6944	0.2325	2.7894
469.2	0.193689	0.2905	0.058	0.0579	0.6944	0.2327	2.7911
469.4	0.193783	0.2907	0.058	0.0579	0.6944	0.2328	2.7928
469.6	0.193877	0.2908	0.058	0.0579	0.6944	0.2329	2.7945
469.8	0.193971	0.2910	0.058	0.0579	0.6944	0.2331	2.7962
470	0.194065	0.2911	0.058	0.0579	0.6944	0.2332	2.7979
470.2	0.194159	0.2912	0.058	0.0579	0.6944	0.2334	2.7996
470.4	0.194254	0.2914	0.058	0.0579	0.6944	0.2335	2.8013
470.6	0.194348	0.2915	0.058	0.0579	0.6944	0.2337	2.8030
470.8	0.194442	0.2917	0.058	0.0579	0.6944	0.2338	2.8047
471	0.194536	0.2918	0.058	0.0579	0.6944	0.2339	2.8064
471.2	0.194631	0.2919	0.058	0.0579	0.6944	0.2341	2.8081
471.4	0.194725	0.2921	0.058	0.0579	0.6944	0.2342	2.8098
471.6	0.194819	0.2922	0.058	0.0579	0.6944	0.2344	2.8114
471.8	0.194913	0.2924	0.058	0.0579	0.6944	0.2345	2.8131
472	0.195008	0.2925	0.058	0.0579	0.6944	0.2346	2.8148
472.2	0.195102	0.2927	0.058	0.0579	0.6944	0.2348	2.8165
472.4	0.195196	0.2928	0.058	0.0579	0.6944	0.2349	2.8182
472.6	0.195291	0.2929	0.058	0.0579	0.6944	0.2351	2.8199
472.8	0.195385	0.2931	0.058	0.0579	0.6944	0.2352	2.8216
473	0.195479	0.2932	0.058	0.0579	0.6944	0.2353	2.8233
473.2	0.195574	0.2934	0.058	0.0579	0.6944	0.2355	2.8250
473.4	0.195668	0.2935	0.058	0.0579	0.6944	0.2356	2.8267
473.6	0.195763	0.2936	0.058	0.0579	0.6944	0.2358	2.8284
473.8	0.195857	0.2938	0.058	0.0579	0.6944	0.2359	2.8301
474	0.195951	0.2939	0.058	0.0579	0.6944	0.2361	2.8318
474.2	0.196046	0.2941	0.058	0.0579	0.6944	0.2362	2.8335
474.4	0.19614	0.2942	0.058	0.0579	0.6944	0.2363	2.8352
474.6	0.196235	0.2944	0.058	0.0579	0.6944	0.2365	2.8369
474.8	0.196329	0.2945	0.058	0.0579	0.6944	0.2366	2.8386
475	0.196424	0.2946	0.058	0.0579	0.6944	0.2368	2.8403
475.2	0.196518	0.2948	0.058	0.0579	0.6944	0.2369	2.8420
475.4	0.196613	0.2949	0.058	0.0579	0.6944	0.2370	2.8437
475.6	0.196707	0.2951	0.058	0.0579	0.6944	0.2372	2.8454
475.8	0.196802	0.2952	0.058	0.0579	0.6944	0.2373	2.8471
476	0.196896	0.2953	0.058	0.0579	0.6944	0.2375	2.8488
476.2	0.196991	0.2955	0.058	0.0579	0.6944	0.2376	2.8505
476.4	0.197086	0.2956	0.058	0.0579	0.6944	0.2378	2.8522
476.6	0.19718	0.2958	0.058	0.0579	0.6944	0.2379	2.8539
476.8	0.197275	0.2959	0.058	0.0579	0.6944	0.2380	2.8557
477	0.197369	0.2961	0.058	0.0579	0.6944	0.2382	2.8574
477.2	0.197464	0.2962	0.058	0.0579	0.6944	0.2383	2.8591
477.4	0.197559	0.2963	0.058	0.0579	0.6944	0.2385	2.8608
477.6	0.197653	0.2965	0.058	0.0579	0.6944	0.2386	2.8625
477.8	0.197748	0.2966	0.058	0.0579	0.6944	0.2388	2.8642

478	0.197843	0.2968	0.058	0.0579	0.6944	0.2389	2.8659
478.2	0.197937	0.2969	0.058	0.0579	0.6944	0.2390	2.8676
478.4	0.198032	0.2970	0.058	0.0579	0.6944	0.2392	2.8693
478.6	0.198127	0.2972	0.058	0.0579	0.6944	0.2393	2.8710
478.8	0.198222	0.2973	0.058	0.0579	0.6944	0.2395	2.8727
479	0.198316	0.2975	0.058	0.0579	0.6944	0.2396	2.8744
479.2	0.198411	0.2976	0.058	0.0579	0.6944	0.2397	2.8761
479.4	0.198506	0.2978	0.058	0.0579	0.6944	0.2399	2.8778
479.6	0.198601	0.2979	0.058	0.0579	0.6944	0.2400	2.8795
479.8	0.198696	0.2980	0.058	0.0579	0.6944	0.2402	2.8812
480	0.19879	0.2982	0.058	0.0579	0.6944	0.2403	2.8829
480.2	0.198885	0.2983	0.058	0.0579	0.6944	0.2405	2.8846
480.4	0.19898	0.2985	0.058	0.0579	0.6944	0.2406	2.8863
480.6	0.199075	0.2986	0.058	0.0579	0.6944	0.2407	2.8881
480.8	0.19917	0.2988	0.058	0.0579	0.6944	0.2409	2.8898
481	0.199265	0.2989	0.058	0.0579	0.6944	0.2410	2.8915
481.2	0.19936	0.2990	0.058	0.0579	0.6944	0.2412	2.8932
481.4	0.199455	0.2992	0.058	0.0579	0.6944	0.2413	2.8949
481.6	0.19955	0.2993	0.058	0.0579	0.6944	0.2415	2.8966
481.8	0.199644	0.2995	0.058	0.0579	0.6944	0.2416	2.8983
482	0.199739	0.2996	0.058	0.0579	0.6944	0.2417	2.9000
482.2	0.199834	0.2998	0.058	0.0579	0.6944	0.2419	2.9017
482.4	0.199929	0.2999	0.058	0.0579	0.6944	0.2420	2.9034
482.6	0.200024	0.3000	0.058	0.0579	0.6944	0.2422	2.9051
482.8	0.200119	0.3002	0.058	0.0579	0.6944	0.2423	2.9068
483	0.200214	0.3003	0.058	0.0579	0.6944	0.2425	2.9086
483.2	0.200309	0.3005	0.058	0.0579	0.6944	0.2426	2.9103
483.4	0.200405	0.3006	0.058	0.0579	0.6944	0.2427	2.9120
483.6	0.2005	0.3007	0.058	0.0579	0.6944	0.2429	2.9137
483.8	0.200595	0.3009	0.058	0.0579	0.6944	0.2430	2.9154
484	0.20069	0.3010	0.058	0.0579	0.6944	0.2432	2.9171
484.2	0.200785	0.3012	0.058	0.0579	0.6944	0.2433	2.9188
484.4	0.20088	0.3013	0.058	0.0579	0.6944	0.2434	2.9205
484.6	0.200975	0.3015	0.058	0.0579	0.6944	0.2436	2.9223
484.8	0.20107	0.3016	0.058	0.0579	0.6944	0.2437	2.9240
485	0.201165	0.3017	0.058	0.0579	0.6944	0.2439	2.9257
485.2	0.201261	0.3019	0.058	0.0579	0.6944	0.2440	2.9274
485.4	0.201356	0.3020	0.058	0.0579	0.6944	0.2442	2.9291
485.6	0.201451	0.3022	0.058	0.0579	0.6944	0.2443	2.9308
485.8	0.201546	0.3023	0.058	0.0579	0.6944	0.2444	2.9325
486	0.201641	0.3025	0.058	0.0579	0.6944	0.2446	2.9342
486.2	0.201737	0.3026	0.058	0.0579	0.6944	0.2447	2.9360
486.4	0.201832	0.3027	0.058	0.0579	0.6944	0.2449	2.9377
486.6	0.201927	0.3029	0.058	0.0579	0.6944	0.2450	2.9394
486.8	0.202022	0.3030	0.058	0.0579	0.6944	0.2452	2.9411
487	0.202118	0.3032	0.058	0.0579	0.6944	0.2453	2.9428
487.2	0.202213	0.3033	0.058	0.0579	0.6944	0.2454	2.9445

487.4	0.202308	0.3035	0.058	0.0579	0.6944	0.2456	2.9462
487.6	0.202404	0.3036	0.058	0.0579	0.6944	0.2457	2.9480
487.8	0.202499	0.3037	0.058	0.0579	0.6944	0.2459	2.9497
488	0.202594	0.3039	0.058	0.0579	0.6944	0.2460	2.9514
488.2	0.20269	0.3040	0.058	0.0579	0.6944	0.2462	2.9531
488.4	0.202785	0.3042	0.058	0.0579	0.6944	0.2463	2.9548
488.6	0.202881	0.3043	0.058	0.0579	0.6944	0.2465	2.9565
488.8	0.202976	0.3045	0.058	0.0579	0.6944	0.2466	2.9583
489	0.203071	0.3046	0.058	0.0579	0.6944	0.2467	2.9600
489.2	0.203167	0.3048	0.058	0.0579	0.6944	0.2469	2.9617
489.4	0.203262	0.3049	0.058	0.0579	0.6944	0.2470	2.9634
489.6	0.203358	0.3050	0.058	0.0579	0.6944	0.2472	2.9651
489.8	0.203453	0.3052	0.058	0.0579	0.6944	0.2473	2.9669
490	0.203549	0.3053	0.058	0.0579	0.6944	0.2475	2.9686
490.2	0.203644	0.3055	0.058	0.0579	0.6944	0.2476	2.9703
490.4	0.20374	0.3056	0.058	0.0579	0.6944	0.2477	2.9720
490.6	0.203835	0.3058	0.058	0.0579	0.6944	0.2479	2.9737
490.8	0.203931	0.3059	0.058	0.0579	0.6944	0.2480	2.9755
491	0.204027	0.3060	0.058	0.0579	0.6944	0.2482	2.9772
491.2	0.204122	0.3062	0.058	0.0579	0.6944	0.2483	2.9789
491.4	0.204218	0.3063	0.058	0.0579	0.6944	0.2485	2.9806
491.6	0.204313	0.3065	0.058	0.0579	0.6944	0.2486	2.9823
491.8	0.204409	0.3066	0.058	0.0579	0.6944	0.2487	2.9841
492	0.204505	0.3068	0.058	0.0579	0.6944	0.2489	2.9858
492.2	0.2046	0.3069	0.058	0.0579	0.6944	0.2490	2.9875
492.4	0.204696	0.3070	0.058	0.0579	0.6944	0.2492	2.9892
492.6	0.204792	0.3072	0.058	0.0579	0.6944	0.2493	2.9909
492.8	0.204887	0.3073	0.058	0.0579	0.6944	0.2495	2.9927
493	0.204983	0.3075	0.058	0.0579	0.6944	0.2496	2.9944
493.2	0.205079	0.3076	0.058	0.0579	0.6944	0.2497	2.9961
493.4	0.205174	0.3078	0.058	0.0579	0.6944	0.2499	2.9978
493.6	0.20527	0.3079	0.058	0.0579	0.6944	0.2500	2.9996
493.8	0.205366	0.3080	0.058	0.0579	0.6944	0.2502	3.0013
494	0.205462	0.3082	0.058	0.0579	0.6944	0.2503	3.0030
494.2	0.205557	0.3083	0.058	0.0579	0.6944	0.2505	3.0047
494.4	0.205653	0.3085	0.058	0.0579	0.6944	0.2506	3.0065
494.6	0.205749	0.3086	0.058	0.0579	0.6944	0.2508	3.0082
494.8	0.205845	0.3088	0.058	0.0579	0.6944	0.2509	3.0099
495	0.205941	0.3089	0.058	0.0579	0.6944	0.2510	3.0116
495.2	0.206037	0.3091	0.058	0.0579	0.6944	0.2512	3.0134
495.4	0.206132	0.3092	0.058	0.0579	0.6944	0.2513	3.0151
495.6	0.206228	0.3093	0.058	0.0579	0.6944	0.2515	3.0168
495.8	0.206324	0.3095	0.058	0.0579	0.6944	0.2516	3.0185
496	0.20642	0.3096	0.058	0.0579	0.6944	0.2518	3.0203
496.2	0.206516	0.3098	0.058	0.0579	0.6944	0.2519	3.0220
496.4	0.206612	0.3099	0.058	0.0579	0.6944	0.2520	3.0237
496.6	0.206708	0.3101	0.058	0.0579	0.6944	0.2522	3.0254

496.8	0.206804	0.3102	0.058	0.0579	0.6944	0.2523	3.0272
497	0.2069	0.3103	0.058	0.0579	0.6944	0.2525	3.0289
497.2	0.206996	0.3105	0.058	0.0579	0.6944	0.2526	3.0306
497.4	0.207092	0.3106	0.058	0.0579	0.6944	0.2528	3.0323
497.6	0.207188	0.3108	0.058	0.0579	0.6944	0.2529	3.0341
497.8	0.207284	0.3109	0.058	0.0579	0.6944	0.2531	3.0358
498	0.20738	0.3111	0.058	0.0579	0.6944	0.2532	3.0375
498.2	0.207476	0.3112	0.058	0.0579	0.6944	0.2533	3.0393
498.4	0.207572	0.3114	0.058	0.0579	0.6944	0.2535	3.0410
498.6	0.207668	0.3115	0.058	0.0579	0.6944	0.2536	3.0427
498.8	0.207764	0.3116	0.058	0.0579	0.6944	0.2538	3.0444
499	0.20786	0.3118	0.058	0.0579	0.6944	0.2539	3.0462
499.2	0.207956	0.3119	0.058	0.0579	0.6944	0.2541	3.0479
499.4	0.208053	0.3121	0.058	0.0579	0.6944	0.2542	3.0496
499.6	0.208149	0.3122	0.058	0.0579	0.6944	0.2544	3.0514
499.8	0.208245	0.3124	0.058	0.0579	0.6944	0.2545	3.0531
500	0.208341	0.3125	0.058	0.0579	0.6944	0.2546	3.0548
500.2	0.208437	0.3127	0.058	0.0579	0.6944	0.2548	3.0566
500.4	0.208534	0.3128	0.058	0.0579	0.6944	0.2549	3.0583
500.6	0.20863	0.3129	0.058	0.0579	0.6944	0.2551	3.0600
500.8	0.208726	0.3131	0.058	0.0579	0.6944	0.2552	3.0618
501	0.208822	0.3132	0.058	0.0579	0.6944	0.2554	3.0635
501.2	0.208918	0.3134	0.058	0.0579	0.6944	0.2555	3.0652
501.4	0.209015	0.3135	0.058	0.0579	0.6944	0.2557	3.0670
501.6	0.209111	0.3137	0.058	0.0579	0.6944	0.2558	3.0687
501.8	0.209207	0.3138	0.058	0.0579	0.6944	0.2559	3.0704
502	0.209304	0.3140	0.058	0.0579	0.6944	0.2561	3.0722
502.2	0.2094	0.3141	0.058	0.0579	0.6944	0.2562	3.0739
502.4	0.209496	0.3142	0.058	0.0579	0.6944	0.2564	3.0756
502.6	0.209593	0.3144	0.058	0.0579	0.6944	0.2565	3.0774
502.8	0.209689	0.3145	0.058	0.0579	0.6944	0.2567	3.0791
503	0.209786	0.3147	0.058	0.0579	0.6944	0.2568	3.0808
503.2	0.209882	0.3148	0.058	0.0579	0.6944	0.2570	3.0826
503.4	0.209978	0.3150	0.058	0.0579	0.6944	0.2571	3.0843
503.6	0.210075	0.3151	0.058	0.0579	0.6944	0.2572	3.0860
503.8	0.210171	0.3153	0.058	0.0579	0.6944	0.2574	3.0878
504	0.210268	0.3154	0.058	0.0579	0.6944	0.2575	3.0895
504.2	0.210364	0.3155	0.058	0.0579	0.6944	0.2577	3.0912
504.4	0.210461	0.3157	0.058	0.0579	0.6944	0.2578	3.0930
504.6	0.210557	0.3158	0.058	0.0579	0.6944	0.2580	3.0947
504.8	0.210654	0.3160	0.058	0.0579	0.6944	0.2581	3.0965
505	0.21075	0.3161	0.058	0.0579	0.6944	0.2583	3.0982
505.2	0.210847	0.3163	0.058	0.0579	0.6944	0.2584	3.0999
505.4	0.210943	0.3164	0.058	0.0579	0.6944	0.2585	3.1017
505.6	0.21104	0.3166	0.058	0.0579	0.6944	0.2587	3.1034
505.8	0.211136	0.3167	0.058	0.0579	0.6944	0.2588	3.1051
506	0.211233	0.3168	0.058	0.0579	0.6944	0.2590	3.1069

506.2	0.21133	0.3170	0.058	0.0579	0.6944	0.2591	3.1086
506.4	0.211426	0.3171	0.058	0.0579	0.6944	0.2593	3.1104
506.6	0.211523	0.3173	0.058	0.0579	0.6944	0.2594	3.1121
506.8	0.21162	0.3174	0.058	0.0579	0.6944	0.2596	3.1138
507	0.211716	0.3176	0.058	0.0579	0.6944	0.2597	3.1156
507.2	0.211813	0.3177	0.058	0.0579	0.6944	0.2598	3.1173
507.4	0.21191	0.3179	0.058	0.0579	0.6944	0.2600	3.1191
507.6	0.212006	0.3180	0.058	0.0579	0.6944	0.2601	3.1208
507.8	0.212103	0.3182	0.058	0.0579	0.6944	0.2603	3.1225
508	0.2122	0.3183	0.058	0.0579	0.6944	0.2604	3.1243
508.2	0.212297	0.3184	0.058	0.0579	0.6944	0.2606	3.1260
508.4	0.212393	0.3186	0.058	0.0579	0.6944	0.2607	3.1278
508.6	0.21249	0.3187	0.058	0.0579	0.6944	0.2609	3.1295
508.8	0.212587	0.3189	0.058	0.0579	0.6944	0.2610	3.1312
509	0.212684	0.3190	0.058	0.0579	0.6944	0.2612	3.1330
509.2	0.212781	0.3192	0.058	0.0579	0.6944	0.2613	3.1347
509.4	0.212877	0.3193	0.058	0.0579	0.6944	0.2614	3.1365
509.6	0.212974	0.3195	0.058	0.0579	0.6944	0.2616	3.1382
509.8	0.213071	0.3196	0.058	0.0579	0.6944	0.2617	3.1400
510	0.213168	0.3198	0.058	0.0579	0.6944	0.2619	3.1417
510.2	0.213265	0.3199	0.058	0.0579	0.6944	0.2620	3.1435
510.4	0.213362	0.3200	0.058	0.0579	0.6944	0.2622	3.1452
510.6	0.213459	0.3202	0.058	0.0579	0.6944	0.2623	3.1469
510.8	0.213556	0.3203	0.058	0.0579	0.6944	0.2625	3.1487
511	0.213653	0.3205	0.058	0.0579	0.6944	0.2626	3.1504
511.2	0.21375	0.3206	0.058	0.0579	0.6944	0.2628	3.1522
511.4	0.213847	0.3208	0.058	0.0579	0.6944	0.2629	3.1539
511.6	0.213944	0.3209	0.058	0.0579	0.6944	0.2630	3.1557
511.8	0.214041	0.3211	0.058	0.0579	0.6944	0.2632	3.1574
512	0.214138	0.3212	0.058	0.0579	0.6944	0.2633	3.1592
512.2	0.214235	0.3214	0.058	0.0579	0.6944	0.2635	3.1609
512.4	0.214332	0.3215	0.058	0.0579	0.6944	0.2636	3.1627
512.6	0.214429	0.3216	0.058	0.0579	0.6944	0.2638	3.1644
512.8	0.214526	0.3218	0.058	0.0579	0.6944	0.2639	3.1661
513	0.214623	0.3219	0.058	0.0579	0.6944	0.2641	3.1679
513.2	0.21472	0.3221	0.058	0.0579	0.6944	0.2642	3.1696
513.4	0.214817	0.3222	0.058	0.0579	0.6944	0.2644	3.1714
513.6	0.214914	0.3224	0.058	0.0579	0.6944	0.2645	3.1731
513.8	0.215012	0.3225	0.058	0.0579	0.6944	0.2646	3.1749
514	0.215109	0.3227	0.058	0.0579	0.6944	0.2648	3.1766
514.2	0.215206	0.3228	0.058	0.0579	0.6944	0.2649	3.1784
514.4	0.215303	0.3230	0.058	0.0579	0.6944	0.2651	3.1801
514.6	0.2154	0.3231	0.058	0.0579	0.6944	0.2652	3.1819
514.8	0.215498	0.3232	0.058	0.0579	0.6944	0.2654	3.1836
515	0.215595	0.3234	0.058	0.0579	0.6944	0.2655	3.1854
515.2	0.215692	0.3235	0.058	0.0579	0.6944	0.2657	3.1871
515.4	0.215789	0.3237	0.058	0.0579	0.6944	0.2658	3.1889

515.6	0.215887	0.3238	0.058	0.0579	0.6944	0.2660	3.1906
515.8	0.215984	0.3240	0.058	0.0579	0.6944	0.2661	3.1924
516	0.216081	0.3241	0.058	0.0579	0.6944	0.2663	3.1941
516.2	0.216179	0.3243	0.058	0.0579	0.6944	0.2664	3.1959
516.4	0.216276	0.3244	0.058	0.0579	0.6944	0.2665	3.1976
516.6	0.216373	0.3246	0.058	0.0579	0.6944	0.2667	3.1994
516.8	0.216471	0.3247	0.058	0.0579	0.6944	0.2668	3.2012
517	0.216568	0.3249	0.058	0.0579	0.6944	0.2670	3.2029
517.2	0.216665	0.3250	0.058	0.0579	0.6944	0.2671	3.2047
517.4	0.216763	0.3251	0.058	0.0579	0.6944	0.2673	3.2064
517.6	0.21686	0.3253	0.058	0.0579	0.6944	0.2674	3.2082
517.8	0.216958	0.3254	0.058	0.0579	0.6944	0.2676	3.2099
518	0.217055	0.3256	0.058	0.0579	0.6944	0.2677	3.2117
518.2	0.217153	0.3257	0.058	0.0579	0.6944	0.2679	3.2134
518.4	0.21725	0.3259	0.058	0.0579	0.6944	0.2680	3.2152
518.6	0.217348	0.3260	0.058	0.0579	0.6944	0.2682	3.2169
518.8	0.217445	0.3262	0.058	0.0579	0.6944	0.2683	3.2187
519	0.217543	0.3263	0.058	0.0579	0.6944	0.2684	3.2204
519.2	0.21764	0.3265	0.058	0.0579	0.6944	0.2686	3.2222
519.4	0.217738	0.3266	0.058	0.0579	0.6944	0.2687	3.2240
519.6	0.217835	0.3268	0.058	0.0579	0.6944	0.2689	3.2257
519.8	0.217933	0.3269	0.058	0.0579	0.6944	0.2690	3.2275
520	0.218031	0.3270	0.058	0.0579	0.6944	0.2692	3.2292
520.2	0.218128	0.3272	0.058	0.0579	0.6944	0.2693	3.2310
520.4	0.218226	0.3273	0.058	0.0579	0.6944	0.2695	3.2327
520.6	0.218323	0.3275	0.058	0.0579	0.6944	0.2696	3.2345
520.8	0.218421	0.3276	0.058	0.0579	0.6944	0.2698	3.2363
521	0.218519	0.3278	0.058	0.0579	0.6944	0.2699	3.2380
521.2	0.218616	0.3279	0.058	0.0579	0.6944	0.2701	3.2398
521.4	0.218714	0.3281	0.058	0.0579	0.6944	0.2702	3.2415
521.6	0.218812	0.3282	0.058	0.0579	0.6944	0.2703	3.2433
521.8	0.21891	0.3284	0.058	0.0579	0.6944	0.2705	3.2450
522	0.219007	0.3285	0.058	0.0579	0.6944	0.2706	3.2468
522.2	0.219105	0.3287	0.058	0.0579	0.6944	0.2708	3.2486
522.4	0.219203	0.3288	0.058	0.0579	0.6944	0.2709	3.2503
522.6	0.219301	0.3290	0.058	0.0579	0.6944	0.2711	3.2521
522.8	0.219398	0.3291	0.058	0.0579	0.6944	0.2712	3.2538
523	0.219496	0.3292	0.058	0.0579	0.6944	0.2714	3.2556
523.2	0.219594	0.3294	0.058	0.0579	0.6944	0.2715	3.2574
523.4	0.219692	0.3295	0.058	0.0579	0.6944	0.2717	3.2591
523.6	0.21979	0.3297	0.058	0.0579	0.6944	0.2718	3.2609
523.8	0.219888	0.3298	0.058	0.0579	0.6944	0.2720	3.2627
524	0.219986	0.3300	0.058	0.0579	0.6944	0.2721	3.2644
524.2	0.220083	0.3301	0.058	0.0579	0.6944	0.2723	3.2662
524.4	0.220181	0.3303	0.058	0.0579	0.6944	0.2724	3.2679
524.6	0.220279	0.3304	0.058	0.0579	0.6944	0.2725	3.2697
524.8	0.220377	0.3306	0.058	0.0579	0.6944	0.2727	3.2715

525	0.220475	0.3307	0.058	0.0579	0.6944	0.2728	3.2732
525.2	0.220573	0.3309	0.058	0.0579	0.6944	0.2730	3.2750
525.4	0.220671	0.3310	0.058	0.0579	0.6944	0.2731	3.2768
525.6	0.220769	0.3312	0.058	0.0579	0.6944	0.2733	3.2785
525.8	0.220867	0.3313	0.058	0.0579	0.6944	0.2734	3.2803
526	0.220965	0.3314	0.058	0.0579	0.6944	0.2736	3.2820
526.2	0.221063	0.3316	0.058	0.0579	0.6944	0.2737	3.2838
526.4	0.221161	0.3317	0.058	0.0579	0.6944	0.2739	3.2856
526.6	0.22126	0.3319	0.058	0.0579	0.6944	0.2740	3.2873
526.8	0.221358	0.3320	0.058	0.0579	0.6944	0.2742	3.2891
527	0.221456	0.3322	0.058	0.0579	0.6944	0.2743	3.2909
527.2	0.221554	0.3323	0.058	0.0579	0.6944	0.2745	3.2926
527.4	0.221652	0.3325	0.058	0.0579	0.6944	0.2746	3.2944
527.6	0.22175	0.3326	0.058	0.0579	0.6944	0.2748	3.2962
527.8	0.221848	0.3328	0.058	0.0579	0.6944	0.2749	3.2979
528	0.221947	0.3329	0.058	0.0579	0.6944	0.2750	3.2997
528.2	0.222045	0.3331	0.058	0.0579	0.6944	0.2752	3.3015
528.4	0.222143	0.3332	0.058	0.0579	0.6944	0.2753	3.3032
528.6	0.222241	0.3334	0.058	0.0579	0.6944	0.2755	3.3050
528.8	0.222339	0.3335	0.058	0.0579	0.6944	0.2756	3.3068
529	0.222438	0.3337	0.058	0.0579	0.6944	0.2758	3.3085
529.2	0.222536	0.3338	0.058	0.0579	0.6944	0.2759	3.3103
529.4	0.222634	0.3340	0.058	0.0579	0.6944	0.2761	3.3121
529.6	0.222733	0.3341	0.058	0.0579	0.6944	0.2762	3.3139
529.8	0.222831	0.3342	0.058	0.0579	0.6944	0.2764	3.3156
530	0.222929	0.3344	0.058	0.0579	0.6944	0.2765	3.3174
530.2	0.223028	0.3345	0.058	0.0579	0.6944	0.2767	3.3192
530.4	0.223126	0.3347	0.058	0.0579	0.6944	0.2768	3.3209
530.6	0.223224	0.3348	0.058	0.0579	0.6944	0.2770	3.3227
530.8	0.223323	0.3350	0.058	0.0579	0.6944	0.2771	3.3245
531	0.223421	0.3351	0.058	0.0579	0.6944	0.2773	3.3263
531.2	0.22352	0.3353	0.058	0.0579	0.6944	0.2774	3.3280
531.4	0.223618	0.3354	0.058	0.0579	0.6944	0.2776	3.3298
531.6	0.223716	0.3356	0.058	0.0579	0.6944	0.2777	3.3316
531.8	0.223815	0.3357	0.058	0.0579	0.6944	0.2779	3.3333
532	0.223913	0.3359	0.058	0.0579	0.6944	0.2780	3.3351
532.2	0.224012	0.3360	0.058	0.0579	0.6944	0.2781	3.3369
532.4	0.22411	0.3362	0.058	0.0579	0.6944	0.2783	3.3387
532.6	0.224209	0.3363	0.058	0.0579	0.6944	0.2784	3.3404
532.8	0.224307	0.3365	0.058	0.0579	0.6944	0.2786	3.3422
533	0.224406	0.3366	0.058	0.0579	0.6944	0.2787	3.3440
533.2	0.224505	0.3368	0.058	0.0579	0.6944	0.2789	3.3458
533.4	0.224603	0.3369	0.058	0.0579	0.6944	0.2790	3.3475
533.6	0.224702	0.3371	0.058	0.0579	0.6944	0.2792	3.3493
533.8	0.2248	0.3372	0.058	0.0579	0.6944	0.2793	3.3511
534	0.224899	0.3373	0.058	0.0579	0.6944	0.2795	3.3529
534.2	0.224998	0.3375	0.058	0.0579	0.6944	0.2796	3.3546

534.4	0.225096	0.3376	0.058	0.0579	0.6944	0.2798	3.3564
534.6	0.225195	0.3378	0.058	0.0579	0.6944	0.2799	3.3582
534.8	0.225294	0.3379	0.058	0.0579	0.6944	0.2801	3.3600
535	0.225392	0.3381	0.058	0.0579	0.6944	0.2802	3.3617
535.2	0.225491	0.3382	0.058	0.0579	0.6944	0.2804	3.3635
535.4	0.22559	0.3384	0.058	0.0579	0.6944	0.2805	3.3653
535.6	0.225689	0.3385	0.058	0.0579	0.6944	0.2807	3.3671
535.8	0.225787	0.3387	0.058	0.0579	0.6944	0.2808	3.3688
536	0.225886	0.3388	0.058	0.0579	0.6944	0.2810	3.3706
536.2	0.225985	0.3390	0.058	0.0579	0.6944	0.2811	3.3724
536.4	0.226084	0.3391	0.058	0.0579	0.6944	0.2813	3.3742
536.6	0.226183	0.3393	0.058	0.0579	0.6944	0.2814	3.3760
536.8	0.226282	0.3394	0.058	0.0579	0.6944	0.2816	3.3777
537	0.22638	0.3396	0.058	0.0579	0.6944	0.2817	3.3795
537.2	0.226479	0.3397	0.058	0.0579	0.6944	0.2818	3.3813
537.4	0.226578	0.3399	0.058	0.0579	0.6944	0.2820	3.3831
537.6	0.226677	0.3400	0.058	0.0579	0.6944	0.2821	3.3849
537.8	0.226776	0.3402	0.058	0.0579	0.6944	0.2823	3.3866
538	0.226875	0.3403	0.058	0.0579	0.6944	0.2824	3.3884
538.2	0.226974	0.3405	0.058	0.0579	0.6944	0.2826	3.3902
538.4	0.227073	0.3406	0.058	0.0579	0.6944	0.2827	3.3920
538.6	0.227172	0.3408	0.058	0.0579	0.6944	0.2829	3.3938
538.8	0.227271	0.3409	0.058	0.0579	0.6944	0.2830	3.3955
539	0.22737	0.3411	0.058	0.0579	0.6944	0.2832	3.3973
539.2	0.227469	0.3412	0.058	0.0579	0.6944	0.2833	3.3991
539.4	0.227568	0.3414	0.058	0.0579	0.6944	0.2835	3.4009
539.6	0.227667	0.3415	0.058	0.0579	0.6944	0.2836	3.4027
539.8	0.227766	0.3416	0.058	0.0579	0.6944	0.2838	3.4045
540	0.227865	0.3418	0.058	0.0579	0.6944	0.2839	3.4062
540.2	0.227964	0.3419	0.058	0.0579	0.6944	0.2841	3.4080
540.4	0.228063	0.3421	0.058	0.0579	0.6944	0.2842	3.4098
540.6	0.228162	0.3422	0.058	0.0579	0.6944	0.2844	3.4116
540.8	0.228262	0.3424	0.058	0.0579	0.6944	0.2845	3.4134
541	0.228361	0.3425	0.058	0.0579	0.6944	0.2847	3.4152
541.2	0.22846	0.3427	0.058	0.0579	0.6944	0.2848	3.4169
541.4	0.228559	0.3428	0.058	0.0579	0.6944	0.2850	3.4187
541.6	0.228658	0.3430	0.058	0.0579	0.6944	0.2851	3.4205
541.8	0.228758	0.3431	0.058	0.0579	0.6944	0.2853	3.4223
542	0.228857	0.3433	0.058	0.0579	0.6944	0.2854	3.4241
542.2	0.228956	0.3434	0.058	0.0579	0.6944	0.2856	3.4259
542.4	0.229055	0.3436	0.058	0.0579	0.6944	0.2857	3.4277
542.6	0.229155	0.3437	0.058	0.0579	0.6944	0.2859	3.4294
542.8	0.229254	0.3439	0.058	0.0579	0.6944	0.2860	3.4312
543	0.229353	0.3440	0.058	0.0579	0.6944	0.2862	3.4330
543.2	0.229453	0.3442	0.058	0.0579	0.6944	0.2863	3.4348
543.4	0.229552	0.3443	0.058	0.0579	0.6944	0.2865	3.4366
543.6	0.229651	0.3445	0.058	0.0579	0.6944	0.2866	3.4384

543.8	0.229751	0.3446	0.058	0.0579	0.6944	0.2868	3.4402
544	0.22985	0.3448	0.058	0.0579	0.6944	0.2869	3.4420
544.2	0.229949	0.3449	0.058	0.0579	0.6944	0.2871	3.4438
544.4	0.230049	0.3451	0.058	0.0579	0.6944	0.2872	3.4455
544.6	0.230148	0.3452	0.058	0.0579	0.6944	0.2874	3.4473
544.8	0.230248	0.3454	0.058	0.0579	0.6944	0.2875	3.4491
545	0.230347	0.3455	0.058	0.0579	0.6944	0.2877	3.4509
545.2	0.230447	0.3457	0.058	0.0579	0.6944	0.2878	3.4527
545.4	0.230546	0.3458	0.058	0.0579	0.6944	0.2879	3.4545
545.6	0.230646	0.3460	0.058	0.0579	0.6944	0.2881	3.4563
545.8	0.230745	0.3461	0.058	0.0579	0.6944	0.2882	3.4581
546	0.230845	0.3463	0.058	0.0579	0.6944	0.2884	3.4599
546.2	0.230944	0.3464	0.058	0.0579	0.6944	0.2885	3.4617
546.4	0.231044	0.3466	0.058	0.0579	0.6944	0.2887	3.4635
546.6	0.231144	0.3467	0.058	0.0579	0.6944	0.2888	3.4652
546.8	0.231243	0.3469	0.058	0.0579	0.6944	0.2890	3.4670
547	0.231343	0.3470	0.058	0.0579	0.6944	0.2891	3.4688
547.2	0.231442	0.3472	0.058	0.0579	0.6944	0.2893	3.4706
547.4	0.231542	0.3473	0.058	0.0579	0.6944	0.2894	3.4724
547.6	0.231642	0.3475	0.058	0.0579	0.6944	0.2896	3.4742
547.8	0.231741	0.3476	0.058	0.0579	0.6944	0.2897	3.4760
548	0.231841	0.3478	0.058	0.0579	0.6944	0.2899	3.4778
548.2	0.231941	0.3479	0.058	0.0579	0.6944	0.2900	3.4796
548.4	0.232041	0.3481	0.058	0.0579	0.6944	0.2902	3.4814
548.6	0.23214	0.3482	0.058	0.0579	0.6944	0.2903	3.4832
548.8	0.23224	0.3484	0.058	0.0579	0.6944	0.2905	3.4850
549	0.23234	0.3485	0.058	0.0579	0.6944	0.2906	3.4868
549.2	0.23244	0.3487	0.058	0.0579	0.6944	0.2908	3.4886
549.4	0.23254	0.3488	0.058	0.0579	0.6944	0.2909	3.4904
549.6	0.232639	0.3490	0.058	0.0579	0.6944	0.2911	3.4922
549.8	0.232739	0.3491	0.058	0.0579	0.6944	0.2912	3.4940
550	0.232839	0.3493	0.058	0.0579	0.6944	0.2914	3.4958
550.2	0.232939	0.3494	0.058	0.0579	0.6944	0.2915	3.4976
550.4	0.233039	0.3496	0.058	0.0579	0.6944	0.2917	3.4994
550.6	0.233139	0.3497	0.058	0.0579	0.6944	0.2918	3.5012
550.8	0.233239	0.3499	0.058	0.0579	0.6944	0.2920	3.5030
551	0.233339	0.3500	0.058	0.0579	0.6944	0.2921	3.5048
551.2	0.233439	0.3502	0.058	0.0579	0.6944	0.2923	3.5065
551.4	0.233539	0.3503	0.058	0.0579	0.6944	0.2924	3.5083
551.6	0.233638	0.3505	0.058	0.0579	0.6944	0.2926	3.5101
551.8	0.233738	0.3506	0.058	0.0579	0.6944	0.2927	3.5119
552	0.233838	0.3508	0.058	0.0579	0.6944	0.2929	3.5137
552.2	0.233939	0.3509	0.058	0.0579	0.6944	0.2930	3.5155
552.4	0.234039	0.3511	0.058	0.0579	0.6944	0.2932	3.5173
552.6	0.234139	0.3512	0.058	0.0579	0.6944	0.2933	3.5192
552.8	0.234239	0.3514	0.058	0.0579	0.6944	0.2935	3.5210
553	0.234339	0.3515	0.058	0.0579	0.6944	0.2936	3.5228

553.2	0.234439	0.3517	0.058	0.0579	0.6944	0.2938	3.5246
553.4	0.234539	0.3518	0.058	0.0579	0.6944	0.2939	3.5264
553.6	0.234639	0.3520	0.058	0.0579	0.6944	0.2941	3.5282
553.8	0.234739	0.3521	0.058	0.0579	0.6944	0.2942	3.5300
554	0.23484	0.3523	0.058	0.0579	0.6944	0.2944	3.5318
554.2	0.23494	0.3524	0.058	0.0579	0.6944	0.2945	3.5336
554.4	0.23504	0.3526	0.058	0.0579	0.6944	0.2947	3.5354
554.6	0.23514	0.3527	0.058	0.0579	0.6944	0.2948	3.5372
554.8	0.23524	0.3529	0.058	0.0579	0.6944	0.2950	3.5390
555	0.235341	0.3530	0.058	0.0579	0.6944	0.2951	3.5408
555.2	0.235441	0.3532	0.058	0.0579	0.6944	0.2953	3.5426
555.4	0.235541	0.3533	0.058	0.0579	0.6944	0.2954	3.5444
555.6	0.235641	0.3535	0.058	0.0579	0.6944	0.2956	3.5462
555.8	0.235742	0.3536	0.058	0.0579	0.6944	0.2957	3.5480
556	0.235842	0.3538	0.058	0.0579	0.6944	0.2959	3.5498
556.2	0.235942	0.3539	0.058	0.0579	0.6944	0.2960	3.5516
556.4	0.236043	0.3541	0.058	0.0579	0.6944	0.2962	3.5534
556.6	0.236143	0.3542	0.058	0.0579	0.6944	0.2963	3.5552
556.8	0.236244	0.3544	0.058	0.0579	0.6944	0.2965	3.5570
557	0.236344	0.3545	0.058	0.0579	0.6944	0.2966	3.5588
557.2	0.236444	0.3547	0.058	0.0579	0.6944	0.2968	3.5607
557.4	0.236545	0.3548	0.058	0.0579	0.6944	0.2969	3.5625
557.6	0.236645	0.3550	0.058	0.0579	0.6944	0.2971	3.5643
557.8	0.236746	0.3551	0.058	0.0579	0.6944	0.2972	3.5661
558	0.236846	0.3553	0.058	0.0579	0.6944	0.2974	3.5679
558.2	0.236947	0.3554	0.058	0.0579	0.6944	0.2975	3.5697
558.4	0.237047	0.3556	0.058	0.0579	0.6944	0.2977	3.5715
558.6	0.237148	0.3557	0.058	0.0579	0.6944	0.2979	3.5733
558.8	0.237248	0.3559	0.058	0.0579	0.6944	0.2980	3.5751
559	0.237349	0.3560	0.058	0.0579	0.6944	0.2982	3.5769
559.2	0.237449	0.3562	0.058	0.0579	0.6944	0.2983	3.5787
559.4	0.23755	0.3563	0.058	0.0579	0.6944	0.2985	3.5806
559.6	0.237651	0.3565	0.058	0.0579	0.6944	0.2986	3.5824
559.8	0.237751	0.3566	0.058	0.0579	0.6944	0.2988	3.5842
560	0.237852	0.3568	0.058	0.0579	0.6944	0.2989	3.5860
560.2	0.237953	0.3569	0.058	0.0579	0.6944	0.2991	3.5878
560.4	0.238053	0.3571	0.058	0.0579	0.6944	0.2992	3.5896
560.6	0.238154	0.3572	0.058	0.0579	0.6944	0.2994	3.5914
560.8	0.238255	0.3574	0.058	0.0579	0.6944	0.2995	3.5932
561	0.238355	0.3575	0.058	0.0579	0.6944	0.2997	3.5950
561.2	0.238456	0.3577	0.058	0.0579	0.6944	0.2998	3.5969
561.4	0.238557	0.3578	0.058	0.0579	0.6944	0.3000	3.5987
561.6	0.238658	0.3580	0.058	0.0579	0.6944	0.3001	3.6005
561.8	0.238759	0.3581	0.058	0.0579	0.6944	0.3003	3.6023
562	0.238859	0.3583	0.058	0.0579	0.6944	0.3004	3.6041
562.2	0.23896	0.3584	0.058	0.0579	0.6944	0.3006	3.6059
562.4	0.239061	0.3586	0.058	0.0579	0.6944	0.3007	3.6077

562.6	0.239162	0.3587	0.058	0.0579	0.6944	0.3009	3.6096
562.8	0.239263	0.3589	0.058	0.0579	0.6944	0.3010	3.6114
563	0.239364	0.3590	0.058	0.0579	0.6944	0.3012	3.6132
563.2	0.239465	0.3592	0.058	0.0579	0.6944	0.3013	3.6150
563.4	0.239565	0.3593	0.058	0.0579	0.6944	0.3015	3.6168
563.6	0.239666	0.3595	0.058	0.0579	0.6944	0.3016	3.6186
563.8	0.239767	0.3597	0.058	0.0579	0.6944	0.3018	3.6205
564	0.239868	0.3598	0.058	0.0579	0.6944	0.3019	3.6223
564.2	0.239969	0.3600	0.058	0.0579	0.6944	0.3021	3.6241
564.4	0.24007	0.3601	0.058	0.0579	0.6944	0.3022	3.6259
564.6	0.240171	0.3603	0.058	0.0579	0.6944	0.3024	3.6277
564.8	0.240272	0.3604	0.058	0.0579	0.6944	0.3025	3.6295
565	0.240373	0.3606	0.058	0.0579	0.6944	0.3027	3.6314
565.2	0.240474	0.3607	0.058	0.0579	0.6944	0.3028	3.6332
565.4	0.240576	0.3609	0.058	0.0579	0.6944	0.3030	3.6350
565.6	0.240677	0.3610	0.058	0.0579	0.6944	0.3031	3.6368
565.8	0.240778	0.3612	0.058	0.0579	0.6944	0.3033	3.6386
566	0.240879	0.3613	0.058	0.0579	0.6944	0.3034	3.6405
566.2	0.24098	0.3615	0.058	0.0579	0.6944	0.3036	3.6423
566.4	0.241081	0.3616	0.058	0.0579	0.6944	0.3038	3.6441
566.6	0.241182	0.3618	0.058	0.0579	0.6944	0.3039	3.6459
566.8	0.241284	0.3619	0.058	0.0579	0.6944	0.3041	3.6477
567	0.241385	0.3621	0.058	0.0579	0.6944	0.3042	3.6496
567.2	0.241486	0.3622	0.058	0.0579	0.6944	0.3044	3.6514
567.4	0.241587	0.3624	0.058	0.0579	0.6944	0.3045	3.6532
567.6	0.241688	0.3625	0.058	0.0579	0.6944	0.3047	3.6550
567.8	0.24179	0.3627	0.058	0.0579	0.6944	0.3048	3.6569
568	0.241891	0.3628	0.058	0.0579	0.6944	0.3050	3.6587
568.2	0.241992	0.3630	0.058	0.0579	0.6944	0.3051	3.6605
568.4	0.242094	0.3631	0.058	0.0579	0.6944	0.3053	3.6623
568.6	0.242195	0.3633	0.058	0.0579	0.6944	0.3054	3.6642
568.8	0.242296	0.3634	0.058	0.0579	0.6944	0.3056	3.6660
569	0.242398	0.3636	0.058	0.0579	0.6944	0.3057	3.6678
569.2	0.242499	0.3637	0.058	0.0579	0.6944	0.3059	3.6696
569.4	0.242601	0.3639	0.058	0.0579	0.6944	0.3060	3.6715
569.6	0.242702	0.3641	0.058	0.0579	0.6944	0.3062	3.6733
569.8	0.242803	0.3642	0.058	0.0579	0.6944	0.3063	3.6751
570	0.242905	0.3644	0.058	0.0579	0.6944	0.3065	3.6769
570.2	0.243006	0.3645	0.058	0.0579	0.6944	0.3066	3.6788
570.4	0.243108	0.3647	0.058	0.0579	0.6944	0.3068	3.6806
570.6	0.243209	0.3648	0.058	0.0579	0.6944	0.3069	3.6824
570.8	0.243311	0.3650	0.058	0.0579	0.6944	0.3071	3.6842
571	0.243412	0.3651	0.058	0.0579	0.6944	0.3072	3.6861
571.2	0.243514	0.3653	0.058	0.0579	0.6944	0.3074	3.6879
571.4	0.243616	0.3654	0.058	0.0579	0.6944	0.3076	3.6897
571.6	0.243717	0.3656	0.058	0.0579	0.6944	0.3077	3.6915
571.8	0.243819	0.3657	0.058	0.0579	0.6944	0.3079	3.6934

572	0.24392	0.3659	0.058	0.0579	0.6944	0.3080	3.6952
572.2	0.244022	0.3660	0.058	0.0579	0.6944	0.3082	3.6970
572.4	0.244124	0.3662	0.058	0.0579	0.6944	0.3083	3.6989
572.6	0.244225	0.3663	0.058	0.0579	0.6944	0.3085	3.7007
572.8	0.244327	0.3665	0.058	0.0579	0.6944	0.3086	3.7025
573	0.244429	0.3666	0.058	0.0579	0.6944	0.3088	3.7044
573.2	0.24453	0.3668	0.058	0.0579	0.6944	0.3089	3.7062
573.4	0.244632	0.3669	0.058	0.0579	0.6944	0.3091	3.7080
573.6	0.244734	0.3671	0.058	0.0579	0.6944	0.3092	3.7098
573.8	0.244836	0.3673	0.058	0.0579	0.6944	0.3094	3.7117
574	0.244937	0.3674	0.058	0.0579	0.6944	0.3095	3.7135
574.2	0.245039	0.3676	0.058	0.0579	0.6944	0.3097	3.7153
574.4	0.245141	0.3677	0.058	0.0579	0.6944	0.3098	3.7172
574.6	0.245243	0.3679	0.058	0.0579	0.6944	0.3100	3.7190
574.8	0.245345	0.3680	0.058	0.0579	0.6944	0.3101	3.7208
575	0.245447	0.3682	0.058	0.0579	0.6944	0.3103	3.7227
575.2	0.245549	0.3683	0.058	0.0579	0.6944	0.3105	3.7245
575.4	0.24565	0.3685	0.058	0.0579	0.6944	0.3106	3.7263
575.6	0.245752	0.3686	0.058	0.0579	0.6944	0.3108	3.7282
575.8	0.245854	0.3688	0.058	0.0579	0.6944	0.3109	3.7300
576	0.245956	0.3689	0.058	0.0579	0.6944	0.3111	3.7318
576.2	0.246058	0.3691	0.058	0.0579	0.6944	0.3112	3.7337
576.4	0.24616	0.3692	0.058	0.0579	0.6944	0.3114	3.7355
576.6	0.246262	0.3694	0.058	0.0579	0.6944	0.3115	3.7374
576.8	0.246364	0.3695	0.058	0.0579	0.6944	0.3117	3.7392
577	0.246466	0.3697	0.058	0.0579	0.6944	0.3118	3.7410
577.2	0.246568	0.3699	0.058	0.0579	0.6944	0.3120	3.7429
577.4	0.24667	0.3700	0.058	0.0579	0.6944	0.3121	3.7447
577.6	0.246772	0.3702	0.058	0.0579	0.6944	0.3123	3.7465
577.8	0.246875	0.3703	0.058	0.0579	0.6944	0.3124	3.7484
578	0.246977	0.3705	0.058	0.0579	0.6944	0.3126	3.7502
578.2	0.247079	0.3706	0.058	0.0579	0.6944	0.3127	3.7521
578.4	0.247181	0.3708	0.058	0.0579	0.6944	0.3129	3.7539
578.6	0.247283	0.3709	0.058	0.0579	0.6944	0.3131	3.7557
578.8	0.247385	0.3711	0.058	0.0579	0.6944	0.3132	3.7576
579	0.247487	0.3712	0.058	0.0579	0.6944	0.3134	3.7594
579.2	0.24759	0.3714	0.058	0.0579	0.6944	0.3135	3.7613
579.4	0.247692	0.3715	0.058	0.0579	0.6944	0.3137	3.7631
579.6	0.247794	0.3717	0.058	0.0579	0.6944	0.3138	3.7649
579.8	0.247896	0.3718	0.058	0.0579	0.6944	0.3140	3.7668
580	0.247999	0.3720	0.058	0.0579	0.6944	0.3141	3.7686
580.2	0.248101	0.3722	0.058	0.0579	0.6944	0.3143	3.7705
580.4	0.248203	0.3723	0.058	0.0579	0.6944	0.3144	3.7723
580.6	0.248306	0.3725	0.058	0.0579	0.6944	0.3146	3.7741
580.8	0.248408	0.3726	0.058	0.0579	0.6944	0.3147	3.7760
581	0.24851	0.3728	0.058	0.0579	0.6944	0.3149	3.7778
581.2	0.248613	0.3729	0.058	0.0579	0.6944	0.3150	3.7797

581.4	0.248715	0.3731	0.058	0.0579	0.6944	0.3152	3.7815
581.6	0.248818	0.3732	0.058	0.0579	0.6944	0.3154	3.7834
581.8	0.24892	0.3734	0.058	0.0579	0.6944	0.3155	3.7852
582	0.249023	0.3735	0.058	0.0579	0.6944	0.3157	3.7870
582.2	0.249125	0.3737	0.058	0.0579	0.6944	0.3158	3.7889
582.4	0.249227	0.3738	0.058	0.0579	0.6944	0.3160	3.7907
582.6	0.24933	0.3740	0.058	0.0579	0.6944	0.3161	3.7926
582.8	0.249433	0.3741	0.058	0.0579	0.6944	0.3163	3.7944
583	0.249535	0.3743	0.058	0.0579	0.6944	0.3164	3.7963
583.2	0.249638	0.3745	0.058	0.0579	0.6944	0.3166	3.7981
583.4	0.24974	0.3746	0.058	0.0579	0.6944	0.3167	3.8000
583.6	0.249843	0.3748	0.058	0.0579	0.6944	0.3169	3.8018
583.8	0.249945	0.3749	0.058	0.0579	0.6944	0.3170	3.8036
584	0.250048	0.3751	0.058	0.0579	0.6944	0.3172	3.8055
584.2	0.250151	0.3752	0.058	0.0579	0.6944	0.3174	3.8073
584.4	0.250253	0.3754	0.058	0.0579	0.6944	0.3175	3.8092
584.6	0.250356	0.3755	0.058	0.0579	0.6944	0.3177	3.8110
584.8	0.250459	0.3757	0.058	0.0579	0.6944	0.3178	3.8129
585	0.250561	0.3758	0.058	0.0579	0.6944	0.3180	3.8147
585.2	0.250664	0.3760	0.058	0.0579	0.6944	0.3181	3.8166
585.4	0.250767	0.3762	0.058	0.0579	0.6944	0.3183	3.8184
585.6	0.25087	0.3763	0.058	0.0579	0.6944	0.3184	3.8203
585.8	0.250972	0.3765	0.058	0.0579	0.6944	0.3186	3.8221
586	0.251075	0.3766	0.058	0.0579	0.6944	0.3187	3.8240
586.2	0.251178	0.3768	0.058	0.0579	0.6944	0.3189	3.8258
586.4	0.251281	0.3769	0.058	0.0579	0.6944	0.3191	3.8277
586.6	0.251384	0.3771	0.058	0.0579	0.6944	0.3192	3.8295
586.8	0.251487	0.3772	0.058	0.0579	0.6944	0.3194	3.8314
587	0.251589	0.3774	0.058	0.0579	0.6944	0.3195	3.8332
587.2	0.251692	0.3775	0.058	0.0579	0.6944	0.3197	3.8351
587.4	0.251795	0.3777	0.058	0.0579	0.6944	0.3198	3.8369
587.6	0.251898	0.3778	0.058	0.0579	0.6944	0.3200	3.8388
587.8	0.252001	0.3780	0.058	0.0579	0.6944	0.3201	3.8406
588	0.252104	0.3782	0.058	0.0579	0.6944	0.3203	3.8425
588.2	0.252207	0.3783	0.058	0.0579	0.6944	0.3204	3.8444
588.4	0.25231	0.3785	0.058	0.0579	0.6944	0.3206	3.8462
588.6	0.252413	0.3786	0.058	0.0579	0.6944	0.3207	3.8481
588.8	0.252516	0.3788	0.058	0.0579	0.6944	0.3209	3.8499
589	0.252619	0.3789	0.058	0.0579	0.6944	0.3211	3.8518
589.2	0.252722	0.3791	0.058	0.0579	0.6944	0.3212	3.8536
589.4	0.252825	0.3792	0.058	0.0579	0.6944	0.3214	3.8555
589.6	0.252928	0.3794	0.058	0.0579	0.6944	0.3215	3.8573
589.8	0.253031	0.3795	0.058	0.0579	0.6944	0.3217	3.8592
590	0.253135	0.3797	0.058	0.0579	0.6944	0.3218	3.8611
590.2	0.253238	0.3799	0.058	0.0579	0.6944	0.3220	3.8629
590.4	0.253341	0.3800	0.058	0.0579	0.6944	0.3221	3.8648
590.6	0.253444	0.3802	0.058	0.0579	0.6944	0.3223	3.8666

590.8	0.253547	0.3803	0.058	0.0579	0.6944	0.3225	3.8685
591	0.253651	0.3805	0.058	0.0579	0.6944	0.3226	3.8703
591.2	0.253754	0.3806	0.058	0.0579	0.6944	0.3228	3.8722
591.4	0.253857	0.3808	0.058	0.0579	0.6944	0.3229	3.8741
591.6	0.25396	0.3809	0.058	0.0579	0.6944	0.3231	3.8759
591.8	0.254064	0.3811	0.058	0.0579	0.6944	0.3232	3.8778
592	0.254167	0.3813	0.058	0.0579	0.6944	0.3234	3.8796
592.2	0.25427	0.3814	0.058	0.0579	0.6944	0.3235	3.8815
592.4	0.254374	0.3816	0.058	0.0579	0.6944	0.3237	3.8834
592.6	0.254477	0.3817	0.058	0.0579	0.6944	0.3238	3.8852
592.8	0.25458	0.3819	0.058	0.0579	0.6944	0.3240	3.8871
593	0.254684	0.3820	0.058	0.0579	0.6944	0.3242	3.8889
593.2	0.254787	0.3822	0.058	0.0579	0.6944	0.3243	3.8908
593.4	0.254891	0.3823	0.058	0.0579	0.6944	0.3245	3.8927
593.6	0.254994	0.3825	0.058	0.0579	0.6944	0.3246	3.8945
593.8	0.255098	0.3826	0.058	0.0579	0.6944	0.3248	3.8964
594	0.255201	0.3828	0.058	0.0579	0.6944	0.3249	3.8982
594.2	0.255305	0.3830	0.058	0.0579	0.6944	0.3251	3.9001
594.4	0.255408	0.3831	0.058	0.0579	0.6944	0.3252	3.9020
594.6	0.255512	0.3833	0.058	0.0579	0.6944	0.3254	3.9038
594.8	0.255615	0.3834	0.058	0.0579	0.6944	0.3256	3.9057
595	0.255719	0.3836	0.058	0.0579	0.6944	0.3257	3.9076
595.2	0.255822	0.3837	0.058	0.0579	0.6944	0.3259	3.9094
595.4	0.255926	0.3839	0.058	0.0579	0.6944	0.3260	3.9113
595.6	0.25603	0.3840	0.058	0.0579	0.6944	0.3262	3.9132
595.8	0.256133	0.3842	0.058	0.0579	0.6944	0.3263	3.9150
596	0.256237	0.3844	0.058	0.0579	0.6944	0.3265	3.9169
596.2	0.25634	0.3845	0.058	0.0579	0.6944	0.3266	3.9188
596.4	0.256444	0.3847	0.058	0.0579	0.6944	0.3268	3.9206
596.6	0.256548	0.3848	0.058	0.0579	0.6944	0.3270	3.9225
596.8	0.256652	0.3850	0.058	0.0579	0.6944	0.3271	3.9244
597	0.256755	0.3851	0.058	0.0579	0.6944	0.3273	3.9262
597.2	0.256859	0.3853	0.058	0.0579	0.6944	0.3274	3.9281
597.4	0.256963	0.3854	0.058	0.0579	0.6944	0.3276	3.9300
597.6	0.257067	0.3856	0.058	0.0579	0.6944	0.3277	3.9318
597.8	0.257171	0.3858	0.058	0.0579	0.6944	0.3279	3.9337
598	0.257274	0.3859	0.058	0.0579	0.6944	0.3280	3.9356
598.2	0.257378	0.3861	0.058	0.0579	0.6944	0.3282	3.9374
598.4	0.257482	0.3862	0.058	0.0579	0.6944	0.3284	3.9393
598.6	0.257586	0.3864	0.058	0.0579	0.6944	0.3285	3.9412
598.8	0.25769	0.3865	0.058	0.0579	0.6944	0.3287	3.9430
599	0.257794	0.3867	0.058	0.0579	0.6944	0.3288	3.9449
599.2	0.257898	0.3868	0.058	0.0579	0.6944	0.3290	3.9468
599.4	0.258002	0.3870	0.058	0.0579	0.6944	0.3291	3.9487
599.6	0.258106	0.3872	0.058	0.0579	0.6944	0.3293	3.9505
599.8	0.25821	0.3873	0.058	0.0579	0.6944	0.3294	3.9524
600	0.258314	0.3875	0.058	0.0579	0.6944	0.3296	3.9543

600.2	0.258418	0.3876	0.058	0.0579	0.6944	0.3298	3.9561
600.4	0.258522	0.3878	0.058	0.0579	0.6944	0.3299	3.9580
600.6	0.258626	0.3879	0.058	0.0579	0.6944	0.3301	3.9599
600.8	0.25873	0.3881	0.058	0.0579	0.6944	0.3302	3.9618
601	0.258834	0.3883	0.058	0.0579	0.6944	0.3304	3.9636
601.2	0.258938	0.3884	0.058	0.0579	0.6944	0.3305	3.9655
601.4	0.259042	0.3886	0.058	0.0579	0.6944	0.3307	3.9674
601.6	0.259146	0.3887	0.058	0.0579	0.6944	0.3308	3.9693
601.8	0.259251	0.3889	0.058	0.0579	0.6944	0.3310	3.9711
602	0.259355	0.3890	0.058	0.0579	0.6944	0.3312	3.9730
602.2	0.259459	0.3892	0.058	0.0579	0.6944	0.3313	3.9749
602.4	0.259563	0.3893	0.058	0.0579	0.6944	0.3315	3.9768
602.6	0.259667	0.3895	0.058	0.0579	0.6944	0.3316	3.9786
602.8	0.259772	0.3897	0.058	0.0579	0.6944	0.3318	3.9805
603	0.259876	0.3898	0.058	0.0579	0.6944	0.3319	3.9824
603.2	0.25998	0.3900	0.058	0.0579	0.6944	0.3321	3.9843
603.4	0.260085	0.3901	0.058	0.0579	0.6944	0.3323	3.9861
603.6	0.260189	0.3903	0.058	0.0579	0.6944	0.3324	3.9880
603.8	0.260293	0.3904	0.058	0.0579	0.6944	0.3326	3.9899
604	0.260398	0.3906	0.058	0.0579	0.6944	0.3327	3.9918
604.2	0.260502	0.3908	0.058	0.0579	0.6944	0.3329	3.9937
604.4	0.260606	0.3909	0.058	0.0579	0.6944	0.3330	3.9955
604.6	0.260711	0.3911	0.058	0.0579	0.6944	0.3332	3.9974
604.8	0.260815	0.3912	0.058	0.0579	0.6944	0.3334	3.9993
605	0.26092	0.3914	0.058	0.0579	0.6944	0.3335	4.0012
605.2	0.261024	0.3915	0.058	0.0579	0.6944	0.3337	4.0031
605.4	0.261129	0.3917	0.058	0.0579	0.6944	0.3338	4.0049
605.6	0.261233	0.3918	0.058	0.0579	0.6944	0.3340	4.0068
605.8	0.261338	0.3920	0.058	0.0579	0.6944	0.3341	4.0087
606	0.261442	0.3922	0.058	0.0579	0.6944	0.3343	4.0106
606.2	0.261547	0.3923	0.058	0.0579	0.6944	0.3344	4.0125
606.4	0.261651	0.3925	0.058	0.0579	0.6944	0.3346	4.0143
606.6	0.261756	0.3926	0.058	0.0579	0.6944	0.3348	4.0162
606.8	0.261861	0.3928	0.058	0.0579	0.6944	0.3349	4.0181
607	0.261965	0.3929	0.058	0.0579	0.6944	0.3351	4.0200
607.2	0.26207	0.3931	0.058	0.0579	0.6944	0.3352	4.0219
607.4	0.262175	0.3933	0.058	0.0579	0.6944	0.3354	4.0238
607.6	0.262279	0.3934	0.058	0.0579	0.6944	0.3355	4.0256
607.8	0.262384	0.3936	0.058	0.0579	0.6944	0.3357	4.0275
608	0.262489	0.3937	0.058	0.0579	0.6944	0.3359	4.0294
608.2	0.262593	0.3939	0.058	0.0579	0.6944	0.3360	4.0313
608.4	0.262698	0.3940	0.058	0.0579	0.6944	0.3362	4.0332
608.6	0.262803	0.3942	0.058	0.0579	0.6944	0.3363	4.0351
608.8	0.262908	0.3944	0.058	0.0579	0.6944	0.3365	4.0370
609	0.263013	0.3945	0.058	0.0579	0.6944	0.3366	4.0388
609.2	0.263117	0.3947	0.058	0.0579	0.6944	0.3368	4.0407
609.4	0.263222	0.3948	0.058	0.0579	0.6944	0.3370	4.0426

609.6	0.263327	0.3950	0.058	0.0579	0.6944	0.3371	4.0445
609.8	0.263432	0.3951	0.058	0.0579	0.6944	0.3373	4.0464
610	0.263537	0.3953	0.058	0.0579	0.6944	0.3374	4.0483
610.2	0.263642	0.3955	0.058	0.0579	0.6944	0.3376	4.0502
610.4	0.263747	0.3956	0.058	0.0579	0.6944	0.3377	4.0521
610.6	0.263852	0.3958	0.058	0.0579	0.6944	0.3379	4.0539
610.8	0.263957	0.3959	0.058	0.0579	0.6944	0.3381	4.0558
611	0.264062	0.3961	0.058	0.0579	0.6944	0.3382	4.0577
611.2	0.264167	0.3963	0.058	0.0579	0.6944	0.3384	4.0596
611.4	0.264272	0.3964	0.058	0.0579	0.6944	0.3385	4.0615
611.6	0.264377	0.3966	0.058	0.0579	0.6944	0.3387	4.0634
611.8	0.264482	0.3967	0.058	0.0579	0.6944	0.3389	4.0653
612	0.264587	0.3969	0.058	0.0579	0.6944	0.3390	4.0672
612.2	0.264692	0.3970	0.058	0.0579	0.6944	0.3392	4.0691
612.4	0.264797	0.3972	0.058	0.0579	0.6944	0.3393	4.0710
612.6	0.264902	0.3974	0.058	0.0579	0.6944	0.3395	4.0729
612.8	0.265008	0.3975	0.058	0.0579	0.6944	0.3396	4.0747
613	0.265113	0.3977	0.058	0.0579	0.6944	0.3398	4.0766
613.2	0.265218	0.3978	0.058	0.0579	0.6944	0.3400	4.0785
613.4	0.265323	0.3980	0.058	0.0579	0.6944	0.3401	4.0804
613.6	0.265428	0.3981	0.058	0.0579	0.6944	0.3403	4.0823
613.8	0.265534	0.3983	0.058	0.0579	0.6944	0.3404	4.0842
614	0.265639	0.3985	0.058	0.0579	0.6944	0.3406	4.0861
614.2	0.265744	0.3986	0.058	0.0579	0.6944	0.3407	4.0880
614.4	0.26585	0.3988	0.058	0.0579	0.6944	0.3409	4.0899
614.6	0.265955	0.3989	0.058	0.0579	0.6944	0.3411	4.0918
614.8	0.26606	0.3991	0.058	0.0579	0.6944	0.3412	4.0937
615	0.266166	0.3992	0.058	0.0579	0.6944	0.3414	4.0956
615.2	0.266271	0.3994	0.058	0.0579	0.6944	0.3415	4.0975
615.4	0.266376	0.3996	0.058	0.0579	0.6944	0.3417	4.0994
615.6	0.266482	0.3997	0.058	0.0579	0.6944	0.3419	4.1013
615.8	0.266587	0.3999	0.058	0.0579	0.6944	0.3420	4.1032
616	0.266693	0.4000	0.058	0.0579	0.6944	0.3422	4.1051
616.2	0.266798	0.4002	0.058	0.0579	0.6944	0.3423	4.1070
616.4	0.266904	0.4004	0.058	0.0579	0.6944	0.3425	4.1089
616.6	0.267009	0.4005	0.058	0.0579	0.6944	0.3426	4.1108
616.8	0.267115	0.4007	0.058	0.0579	0.6944	0.3428	4.1127
617	0.26722	0.4008	0.058	0.0579	0.6944	0.3430	4.1146
617.2	0.267326	0.4010	0.058	0.0579	0.6944	0.3431	4.1165
617.4	0.267431	0.4011	0.058	0.0579	0.6944	0.3433	4.1184
617.6	0.267537	0.4013	0.058	0.0579	0.6944	0.3434	4.1203
617.8	0.267643	0.4015	0.058	0.0579	0.6944	0.3436	4.1222
618	0.267748	0.4016	0.058	0.0579	0.6944	0.3438	4.1241
618.2	0.267854	0.4018	0.058	0.0579	0.6944	0.3439	4.1260
618.4	0.26796	0.4019	0.058	0.0579	0.6944	0.3441	4.1279
618.6	0.268065	0.4021	0.058	0.0579	0.6944	0.3442	4.1298
618.8	0.268171	0.4023	0.058	0.0579	0.6944	0.3444	4.1317

619	0.268277	0.4024	0.058	0.0579	0.6944	0.3445	4.1336
619.2	0.268383	0.4026	0.058	0.0579	0.6944	0.3447	4.1355
619.4	0.268488	0.4027	0.058	0.0579	0.6944	0.3449	4.1374
619.6	0.268594	0.4029	0.058	0.0579	0.6944	0.3450	4.1393
619.8	0.2687	0.4030	0.058	0.0579	0.6944	0.3452	4.1412
620	0.268806	0.4032	0.058	0.0579	0.6944	0.3453	4.1431
620.2	0.268912	0.4034	0.058	0.0579	0.6944	0.3455	4.1450
620.4	0.269017	0.4035	0.058	0.0579	0.6944	0.3457	4.1469
620.6	0.269123	0.4037	0.058	0.0579	0.6944	0.3458	4.1488
620.8	0.269229	0.4038	0.058	0.0579	0.6944	0.3460	4.1507
621	0.269335	0.4040	0.058	0.0579	0.6944	0.3461	4.1526
621.2	0.269441	0.4042	0.058	0.0579	0.6944	0.3463	4.1545
621.4	0.269547	0.4043	0.058	0.0579	0.6944	0.3465	4.1565
621.6	0.269653	0.4045	0.058	0.0579	0.6944	0.3466	4.1584
621.8	0.269759	0.4046	0.058	0.0579	0.6944	0.3468	4.1603
622	0.269865	0.4048	0.058	0.0579	0.6944	0.3469	4.1622
622.2	0.269971	0.4050	0.058	0.0579	0.6944	0.3471	4.1641
622.4	0.270077	0.4051	0.058	0.0579	0.6944	0.3472	4.1660
622.6	0.270183	0.4053	0.058	0.0579	0.6944	0.3474	4.1679
622.8	0.270289	0.4054	0.058	0.0579	0.6944	0.3476	4.1698
623	0.270395	0.4056	0.058	0.0579	0.6944	0.3477	4.1717
623.2	0.270502	0.4058	0.058	0.0579	0.6944	0.3479	4.1736
623.4	0.270608	0.4059	0.058	0.0579	0.6944	0.3480	4.1755
623.6	0.270714	0.4061	0.058	0.0579	0.6944	0.3482	4.1775
623.8	0.27082	0.4062	0.058	0.0579	0.6944	0.3484	4.1794
624	0.270926	0.4064	0.058	0.0579	0.6944	0.3485	4.1813
624.2	0.271033	0.4065	0.058	0.0579	0.6944	0.3487	4.1832
624.4	0.271139	0.4067	0.058	0.0579	0.6944	0.3488	4.1851
624.6	0.271245	0.4069	0.058	0.0579	0.6944	0.3490	4.1870
624.8	0.271351	0.4070	0.058	0.0579	0.6944	0.3492	4.1889
625	0.271458	0.4072	0.058	0.0579	0.6944	0.3493	4.1908
625.2	0.271564	0.4073	0.058	0.0579	0.6944	0.3495	4.1927
625.4	0.27167	0.4075	0.058	0.0579	0.6944	0.3496	4.1947
625.6	0.271777	0.4077	0.058	0.0579	0.6944	0.3498	4.1966
625.8	0.271883	0.4078	0.058	0.0579	0.6944	0.3500	4.1985
626	0.271989	0.4080	0.058	0.0579	0.6944	0.3501	4.2004
626.2	0.272096	0.4081	0.058	0.0579	0.6944	0.3503	4.2023
626.4	0.272202	0.4083	0.058	0.0579	0.6944	0.3504	4.2042
626.6	0.272309	0.4085	0.058	0.0579	0.6944	0.3506	4.2062
626.8	0.272415	0.4086	0.058	0.0579	0.6944	0.3508	4.2081
627	0.272522	0.4088	0.058	0.0579	0.6944	0.3509	4.2100
627.2	0.272628	0.4089	0.058	0.0579	0.6944	0.3511	4.2119
627.4	0.272735	0.4091	0.058	0.0579	0.6944	0.3512	4.2138
627.6	0.272841	0.4093	0.058	0.0579	0.6944	0.3514	4.2157
627.8	0.272948	0.4094	0.058	0.0579	0.6944	0.3516	4.2177
628	0.273054	0.4096	0.058	0.0579	0.6944	0.3517	4.2196
628.2	0.273161	0.4097	0.058	0.0579	0.6944	0.3519	4.2215

628.4	0.273268	0.4099	0.058	0.0579	0.6944	0.3520	4.2234
628.6	0.273374	0.4101	0.058	0.0579	0.6944	0.3522	4.2253
628.8	0.273481	0.4102	0.058	0.0579	0.6944	0.3524	4.2273
629	0.273588	0.4104	0.058	0.0579	0.6944	0.3525	4.2292
629.2	0.273694	0.4105	0.058	0.0579	0.6944	0.3527	4.2311
629.4	0.273801	0.4107	0.058	0.0579	0.6944	0.3528	4.2330
629.6	0.273908	0.4109	0.058	0.0579	0.6944	0.3530	4.2349
629.8	0.274015	0.4110	0.058	0.0579	0.6944	0.3532	4.2369
630	0.274121	0.4112	0.058	0.0579	0.6944	0.3533	4.2388
630.2	0.274228	0.4113	0.058	0.0579	0.6944	0.3535	4.2407
630.4	0.274335	0.4115	0.058	0.0579	0.6944	0.3536	4.2426
630.6	0.274442	0.4117	0.058	0.0579	0.6944	0.3538	4.2445
630.8	0.274549	0.4118	0.058	0.0579	0.6944	0.3540	4.2465
631	0.274656	0.4120	0.058	0.0579	0.6944	0.3541	4.2484
631.2	0.274762	0.4121	0.058	0.0579	0.6944	0.3543	4.2503
631.4	0.274869	0.4123	0.058	0.0579	0.6944	0.3544	4.2522
631.6	0.274976	0.4125	0.058	0.0579	0.6944	0.3546	4.2542
631.8	0.275083	0.4126	0.058	0.0579	0.6944	0.3548	4.2561
632	0.27519	0.4128	0.058	0.0579	0.6944	0.3549	4.2580
632.2	0.275297	0.4129	0.058	0.0579	0.6944	0.3551	4.2599
632.4	0.275404	0.4131	0.058	0.0579	0.6944	0.3552	4.2619
632.6	0.275511	0.4133	0.058	0.0579	0.6944	0.3554	4.2638
632.8	0.275618	0.4134	0.058	0.0579	0.6944	0.3556	4.2657
633	0.275725	0.4136	0.058	0.0579	0.6944	0.3557	4.2676
633.2	0.275832	0.4137	0.058	0.0579	0.6944	0.3559	4.2696
633.4	0.27594	0.4139	0.058	0.0579	0.6944	0.3560	4.2715
633.6	0.276047	0.4141	0.058	0.0579	0.6944	0.3562	4.2734
633.8	0.276154	0.4142	0.058	0.0579	0.6944	0.3564	4.2754
634	0.276261	0.4144	0.058	0.0579	0.6944	0.3565	4.2773
634.2	0.276368	0.4146	0.058	0.0579	0.6944	0.3567	4.2792
634.4	0.276475	0.4147	0.058	0.0579	0.6944	0.3568	4.2811
634.6	0.276583	0.4149	0.058	0.0579	0.6944	0.3570	4.2831
634.8	0.27669	0.4150	0.058	0.0579	0.6944	0.3572	4.2850
635	0.276797	0.4152	0.058	0.0579	0.6944	0.3573	4.2869
635.2	0.276904	0.4154	0.058	0.0579	0.6944	0.3575	4.2889
635.4	0.277012	0.4155	0.058	0.0579	0.6944	0.3576	4.2908
635.6	0.277119	0.4157	0.058	0.0579	0.6944	0.3578	4.2927
635.8	0.277226	0.4158	0.058	0.0579	0.6944	0.3580	4.2947
636	0.277334	0.4160	0.058	0.0579	0.6944	0.3581	4.2966
636.2	0.277441	0.4162	0.058	0.0579	0.6944	0.3583	4.2985
636.4	0.277548	0.4163	0.058	0.0579	0.6944	0.3585	4.3005
636.6	0.277656	0.4165	0.058	0.0579	0.6944	0.3586	4.3024
636.8	0.277763	0.4166	0.058	0.0579	0.6944	0.3588	4.3043
637	0.277871	0.4168	0.058	0.0579	0.6944	0.3589	4.3063
637.2	0.277978	0.4170	0.058	0.0579	0.6944	0.3591	4.3082
637.4	0.278086	0.4171	0.058	0.0579	0.6944	0.3593	4.3101
637.6	0.278193	0.4173	0.058	0.0579	0.6944	0.3594	4.3121

637.8	0.278301	0.4175	0.058	0.0579	0.6944	0.3596	4.3140
638	0.278408	0.4176	0.058	0.0579	0.6944	0.3597	4.3159
638.2	0.278516	0.4178	0.058	0.0579	0.6944	0.3599	4.3179
638.4	0.278624	0.4179	0.058	0.0579	0.6944	0.3601	4.3198
638.6	0.278731	0.4181	0.058	0.0579	0.6944	0.3602	4.3217
638.8	0.278839	0.4183	0.058	0.0579	0.6944	0.3604	4.3237
639	0.278946	0.4184	0.058	0.0579	0.6944	0.3605	4.3256
639.2	0.279054	0.4186	0.058	0.0579	0.6944	0.3607	4.3276
639.4	0.279162	0.4187	0.058	0.0579	0.6944	0.3609	4.3295
639.6	0.27927	0.4189	0.058	0.0579	0.6944	0.3610	4.3314
639.8	0.279377	0.4191	0.058	0.0579	0.6944	0.3612	4.3334
640	0.279485	0.4192	0.058	0.0579	0.6944	0.3614	4.3353
640.2	0.279593	0.4194	0.058	0.0579	0.6944	0.3615	4.3373
640.4	0.279701	0.4196	0.058	0.0579	0.6944	0.3617	4.3392
640.6	0.279808	0.4197	0.058	0.0579	0.6944	0.3618	4.3411
640.8	0.279916	0.4199	0.058	0.0579	0.6944	0.3620	4.3431
641	0.280024	0.4200	0.058	0.0579	0.6944	0.3622	4.3450
641.2	0.280132	0.4202	0.058	0.0579	0.6944	0.3623	4.3470
641.4	0.28024	0.4204	0.058	0.0579	0.6944	0.3625	4.3489
641.6	0.280348	0.4205	0.058	0.0579	0.6944	0.3627	4.3508
641.8	0.280456	0.4207	0.058	0.0579	0.6944	0.3628	4.3528
642	0.280564	0.4208	0.058	0.0579	0.6944	0.3630	4.3547
642.2	0.280672	0.4210	0.058	0.0579	0.6944	0.3631	4.3567
642.4	0.28078	0.4212	0.058	0.0579	0.6944	0.3633	4.3586
642.6	0.280888	0.4213	0.058	0.0579	0.6944	0.3635	4.3606
642.8	0.280996	0.4215	0.058	0.0579	0.6944	0.3636	4.3625
643	0.281104	0.4217	0.058	0.0579	0.6944	0.3638	4.3644
643.2	0.281212	0.4218	0.058	0.0579	0.6944	0.3639	4.3664
643.4	0.28132	0.4220	0.058	0.0579	0.6944	0.3641	4.3683
643.6	0.281428	0.4221	0.058	0.0579	0.6944	0.3643	4.3703
643.8	0.281536	0.4223	0.058	0.0579	0.6944	0.3644	4.3722
644	0.281644	0.4225	0.058	0.0579	0.6944	0.3646	4.3742
644.2	0.281752	0.4226	0.058	0.0579	0.6944	0.3648	4.3761
644.4	0.281861	0.4228	0.058	0.0579	0.6944	0.3649	4.3781
644.6	0.281969	0.4230	0.058	0.0579	0.6944	0.3651	4.3800
644.8	0.282077	0.4231	0.058	0.0579	0.6944	0.3652	4.3820
645	0.282185	0.4233	0.058	0.0579	0.6944	0.3654	4.3839
645.2	0.282294	0.4234	0.058	0.0579	0.6944	0.3656	4.3859
645.4	0.282402	0.4236	0.058	0.0579	0.6944	0.3657	4.3878
645.6	0.28251	0.4238	0.058	0.0579	0.6944	0.3659	4.3898
645.8	0.282618	0.4239	0.058	0.0579	0.6944	0.3661	4.3917
646	0.282727	0.4241	0.058	0.0579	0.6944	0.3662	4.3937
646.2	0.282835	0.4243	0.058	0.0579	0.6944	0.3664	4.3956
646.4	0.282944	0.4244	0.058	0.0579	0.6944	0.3665	4.3976
646.6	0.283052	0.4246	0.058	0.0579	0.6944	0.3667	4.3995
646.8	0.28316	0.4247	0.058	0.0579	0.6944	0.3669	4.4015
647	0.283269	0.4249	0.058	0.0579	0.6944	0.3670	4.4034

647.2	0.283377	0.4251	0.058	0.0579	0.6944	0.3672	4.4054
647.4	0.283486	0.4252	0.058	0.0579	0.6944	0.3674	4.4073
647.6	0.283594	0.4254	0.058	0.0579	0.6944	0.3675	4.4093
647.8	0.283703	0.4256	0.058	0.0579	0.6944	0.3677	4.4112
648	0.283811	0.4257	0.058	0.0579	0.6944	0.3678	4.4132
648.2	0.28392	0.4259	0.058	0.0579	0.6944	0.3680	4.4151
648.4	0.284029	0.4260	0.058	0.0579	0.6944	0.3682	4.4171
648.6	0.284137	0.4262	0.058	0.0579	0.6944	0.3683	4.4190
648.8	0.284246	0.4264	0.058	0.0579	0.6944	0.3685	4.4210
649	0.284355	0.4265	0.058	0.0579	0.6944	0.3687	4.4230
649.2	0.284463	0.4267	0.058	0.0579	0.6944	0.3688	4.4249
649.4	0.284572	0.4269	0.058	0.0579	0.6944	0.3690	4.4269
649.6	0.284681	0.4270	0.058	0.0579	0.6944	0.3692	4.4288
649.8	0.284789	0.4272	0.058	0.0579	0.6944	0.3693	4.4308
650	0.284898	0.4273	0.058	0.0579	0.6944	0.3695	4.4327
650.2	0.285007	0.4275	0.058	0.0579	0.6944	0.3696	4.4347
650.4	0.285116	0.4277	0.058	0.0579	0.6944	0.3698	4.4367
650.6	0.285225	0.4278	0.058	0.0579	0.6944	0.3700	4.4386
650.8	0.285333	0.4280	0.058	0.0579	0.6944	0.3701	4.4406
651	0.285442	0.4282	0.058	0.0579	0.6944	0.3703	4.4425
651.2	0.285551	0.4283	0.058	0.0579	0.6944	0.3705	4.4445
651.4	0.28566	0.4285	0.058	0.0579	0.6944	0.3706	4.4465
651.6	0.285769	0.4287	0.058	0.0579	0.6944	0.3708	4.4484
651.8	0.285878	0.4288	0.058	0.0579	0.6944	0.3709	4.4504
652	0.285987	0.4290	0.058	0.0579	0.6944	0.3711	4.4523
652.2	0.286096	0.4291	0.058	0.0579	0.6944	0.3713	4.4543
652.4	0.286205	0.4293	0.058	0.0579	0.6944	0.3714	4.4563
652.6	0.286314	0.4295	0.058	0.0579	0.6944	0.3716	4.4582
652.8	0.286423	0.4296	0.058	0.0579	0.6944	0.3718	4.4602
653	0.286532	0.4298	0.058	0.0579	0.6944	0.3719	4.4621
653.2	0.286641	0.4300	0.058	0.0579	0.6944	0.3721	4.4641
653.4	0.28675	0.4301	0.058	0.0579	0.6944	0.3723	4.4661
653.6	0.286859	0.4303	0.058	0.0579	0.6944	0.3724	4.4680
653.8	0.286968	0.4305	0.058	0.0579	0.6944	0.3726	4.4700
654	0.287078	0.4306	0.058	0.0579	0.6944	0.3727	4.4720
654.2	0.287187	0.4308	0.058	0.0579	0.6944	0.3729	4.4739
654.4	0.287296	0.4309	0.058	0.0579	0.6944	0.3731	4.4759
654.6	0.287405	0.4311	0.058	0.0579	0.6944	0.3732	4.4779
654.8	0.287514	0.4313	0.058	0.0579	0.6944	0.3734	4.4798
655	0.287624	0.4314	0.058	0.0579	0.6944	0.3736	4.4818
655.2	0.287733	0.4316	0.058	0.0579	0.6944	0.3737	4.4838
655.4	0.287842	0.4318	0.058	0.0579	0.6944	0.3739	4.4857
655.6	0.287952	0.4319	0.058	0.0579	0.6944	0.3741	4.4877
655.8	0.288061	0.4321	0.058	0.0579	0.6944	0.3742	4.4897
656	0.28817	0.4323	0.058	0.0579	0.6944	0.3744	4.4916
656.2	0.28828	0.4324	0.058	0.0579	0.6944	0.3745	4.4936
656.4	0.288389	0.4326	0.058	0.0579	0.6944	0.3747	4.4956

656.6	0.288499	0.4327	0.058	0.0579	0.6944	0.3749	4.4975
656.8	0.288608	0.4329	0.058	0.0579	0.6944	0.3750	4.4995
657	0.288717	0.4331	0.058	0.0579	0.6944	0.3752	4.5015
657.2	0.288827	0.4332	0.058	0.0579	0.6944	0.3754	4.5035
657.4	0.288937	0.4334	0.058	0.0579	0.6944	0.3755	4.5054
657.6	0.289046	0.4336	0.058	0.0579	0.6944	0.3757	4.5074
657.8	0.289156	0.4337	0.058	0.0579	0.6944	0.3759	4.5094
658	0.289265	0.4339	0.058	0.0579	0.6944	0.3760	4.5113
658.2	0.289375	0.4341	0.058	0.0579	0.6944	0.3762	4.5133
658.4	0.289484	0.4342	0.058	0.0579	0.6944	0.3764	4.5153
658.6	0.289594	0.4344	0.058	0.0579	0.6944	0.3765	4.5173
658.8	0.289704	0.4346	0.058	0.0579	0.6944	0.3767	4.5192
659	0.289813	0.4347	0.058	0.0579	0.6944	0.3768	4.5212
659.2	0.289923	0.4349	0.058	0.0579	0.6944	0.3770	4.5232
659.4	0.290033	0.4350	0.058	0.0579	0.6944	0.3772	4.5252
659.6	0.290143	0.4352	0.058	0.0579	0.6944	0.3773	4.5271
659.8	0.290252	0.4354	0.058	0.0579	0.6944	0.3775	4.5291
660	0.290362	0.4355	0.058	0.0579	0.6944	0.3777	4.5311
660.2	0.290472	0.4357	0.058	0.0579	0.6944	0.3778	4.5331
660.4	0.290582	0.4359	0.058	0.0579	0.6944	0.3780	4.5350
660.6	0.290692	0.4360	0.058	0.0579	0.6944	0.3782	4.5370
660.8	0.290802	0.4362	0.058	0.0579	0.6944	0.3783	4.5390
661	0.290911	0.4364	0.058	0.0579	0.6944	0.3785	4.5410
661.2	0.291021	0.4365	0.058	0.0579	0.6944	0.3787	4.5430
661.4	0.291131	0.4367	0.058	0.0579	0.6944	0.3788	4.5449
661.6	0.291241	0.4369	0.058	0.0579	0.6944	0.3790	4.5469
661.8	0.291351	0.4370	0.058	0.0579	0.6944	0.3792	4.5489
662	0.291461	0.4372	0.058	0.0579	0.6944	0.3793	4.5509
662.2	0.291571	0.4374	0.058	0.0579	0.6944	0.3795	4.5528
662.4	0.291681	0.4375	0.058	0.0579	0.6944	0.3797	4.5548
662.6	0.291791	0.4377	0.058	0.0579	0.6944	0.3798	4.5568
662.8	0.291901	0.4379	0.058	0.0579	0.6944	0.3800	4.5588
663	0.292012	0.4380	0.058	0.0579	0.6944	0.3801	4.5608
663.2	0.292122	0.4382	0.058	0.0579	0.6944	0.3803	4.5628
663.4	0.292232	0.4383	0.058	0.0579	0.6944	0.3805	4.5647
663.6	0.292342	0.4385	0.058	0.0579	0.6944	0.3806	4.5667
663.8	0.292452	0.4387	0.058	0.0579	0.6944	0.3808	4.5687
664	0.292562	0.4388	0.058	0.0579	0.6944	0.3810	4.5707
664.2	0.292673	0.4390	0.058	0.0579	0.6944	0.3811	4.5727
664.4	0.292783	0.4392	0.058	0.0579	0.6944	0.3813	4.5747
664.6	0.292893	0.4393	0.058	0.0579	0.6944	0.3815	4.5766
664.8	0.293003	0.4395	0.058	0.0579	0.6944	0.3816	4.5786
665	0.293114	0.4397	0.058	0.0579	0.6944	0.3818	4.5806
665.2	0.293224	0.4398	0.058	0.0579	0.6944	0.3820	4.5826
665.4	0.293334	0.4400	0.058	0.0579	0.6944	0.3821	4.5846
665.6	0.293445	0.4402	0.058	0.0579	0.6944	0.3823	4.5866
665.8	0.293555	0.4403	0.058	0.0579	0.6944	0.3825	4.5886

666	0.293666	0.4405	0.058	0.0579	0.6944	0.3826	4.5905
666.2	0.293776	0.4407	0.058	0.0579	0.6944	0.3828	4.5925
666.4	0.293887	0.4408	0.058	0.0579	0.6944	0.3830	4.5945
666.6	0.293997	0.4410	0.058	0.0579	0.6944	0.3831	4.5965
666.8	0.294108	0.4412	0.058	0.0579	0.6944	0.3833	4.5985
667	0.294218	0.4413	0.058	0.0579	0.6944	0.3835	4.6005
667.2	0.294329	0.4415	0.058	0.0579	0.6944	0.3836	4.6025
667.4	0.294439	0.4417	0.058	0.0579	0.6944	0.3838	4.6045
667.6	0.29455	0.4418	0.058	0.0579	0.6944	0.3840	4.6065
667.8	0.29466	0.4420	0.058	0.0579	0.6944	0.3841	4.6084
668	0.294771	0.4422	0.058	0.0579	0.6944	0.3843	4.6104
668.2	0.294882	0.4423	0.058	0.0579	0.6944	0.3845	4.6124
668.4	0.294992	0.4425	0.058	0.0579	0.6944	0.3846	4.6144
668.6	0.295103	0.4427	0.058	0.0579	0.6944	0.3848	4.6164
668.8	0.295214	0.4428	0.058	0.0579	0.6944	0.3850	4.6184
669	0.295325	0.4430	0.058	0.0579	0.6944	0.3851	4.6204
669.2	0.295435	0.4432	0.058	0.0579	0.6944	0.3853	4.6224
669.4	0.295546	0.4433	0.058	0.0579	0.6944	0.3854	4.6244
669.6	0.295657	0.4435	0.058	0.0579	0.6944	0.3856	4.6264
669.8	0.295768	0.4437	0.058	0.0579	0.6944	0.3858	4.6284
670	0.295879	0.4438	0.058	0.0579	0.6944	0.3859	4.6304
670.2	0.29599	0.4440	0.058	0.0579	0.6944	0.3861	4.6324
670.4	0.2961	0.4442	0.058	0.0579	0.6944	0.3863	4.6344
670.6	0.296211	0.4443	0.058	0.0579	0.6944	0.3864	4.6364
670.8	0.296322	0.4445	0.058	0.0579	0.6944	0.3866	4.6384
671	0.296433	0.4446	0.058	0.0579	0.6944	0.3868	4.6404
671.2	0.296544	0.4448	0.058	0.0579	0.6944	0.3869	4.6424
671.4	0.296655	0.4450	0.058	0.0579	0.6944	0.3871	4.6444
671.6	0.296766	0.4451	0.058	0.0579	0.6944	0.3873	4.6463
671.8	0.296877	0.4453	0.058	0.0579	0.6944	0.3874	4.6483
672	0.296988	0.4455	0.058	0.0579	0.6944	0.3876	4.6503
672.2	0.297099	0.4456	0.058	0.0579	0.6944	0.3878	4.6523
672.4	0.297211	0.4458	0.058	0.0579	0.6944	0.3879	4.6543
672.6	0.297322	0.4460	0.058	0.0579	0.6944	0.3881	4.6563
672.8	0.297433	0.4461	0.058	0.0579	0.6944	0.3883	4.6583
673	0.297544	0.4463	0.058	0.0579	0.6944	0.3884	4.6603
673.2	0.297655	0.4465	0.058	0.0579	0.6944	0.3886	4.6623
673.4	0.297766	0.4466	0.058	0.0579	0.6944	0.3888	4.6644
673.6	0.297878	0.4468	0.058	0.0579	0.6944	0.3889	4.6664
673.8	0.297989	0.4470	0.058	0.0579	0.6944	0.3891	4.6684
674	0.2981	0.4472	0.058	0.0579	0.6944	0.3893	4.6704
674.2	0.298212	0.4473	0.058	0.0579	0.6944	0.3894	4.6724
674.4	0.298323	0.4475	0.058	0.0579	0.6944	0.3896	4.6744
674.6	0.298434	0.4477	0.058	0.0579	0.6944	0.3898	4.6764
674.8	0.298546	0.4478	0.058	0.0579	0.6944	0.3899	4.6784
675	0.298657	0.4480	0.058	0.0579	0.6944	0.3901	4.6804
675.2	0.298768	0.4482	0.058	0.0579	0.6944	0.3903	4.6824

675.4	0.29888	0.4483	0.058	0.0579	0.6944	0.3904	4.6844
675.6	0.298991	0.4485	0.058	0.0579	0.6944	0.3906	4.6864
675.8	0.299103	0.4487	0.058	0.0579	0.6944	0.3908	4.6884
676	0.299214	0.4488	0.058	0.0579	0.6944	0.3910	4.6904
676.2	0.299326	0.4490	0.058	0.0579	0.6944	0.3911	4.6924
676.4	0.299437	0.4492	0.058	0.0579	0.6944	0.3913	4.6944
676.6	0.299549	0.4493	0.058	0.0579	0.6944	0.3915	4.6964
676.8	0.299661	0.4495	0.058	0.0579	0.6944	0.3916	4.6984
677	0.299772	0.4497	0.058	0.0579	0.6944	0.3918	4.7005
677.2	0.299884	0.4498	0.058	0.0579	0.6944	0.3920	4.7025
677.4	0.299996	0.4500	0.058	0.0579	0.6944	0.3921	4.7045
677.6	0.300107	0.4502	0.058	0.0579	0.6944	0.3923	4.7065
677.8	0.300219	0.4503	0.058	0.0579	0.6944	0.3925	4.7085
678	0.300331	0.4505	0.058	0.0579	0.6944	0.3926	4.7105
678.2	0.300442	0.4507	0.058	0.0579	0.6944	0.3928	4.7125
678.4	0.300554	0.4508	0.058	0.0579	0.6944	0.3930	4.7145
678.6	0.300666	0.4510	0.058	0.0579	0.6944	0.3931	4.7165
678.8	0.300778	0.4512	0.058	0.0579	0.6944	0.3933	4.7185
679	0.30089	0.4513	0.058	0.0579	0.6944	0.3935	4.7206
679.2	0.301002	0.4515	0.058	0.0579	0.6944	0.3936	4.7226
679.4	0.301113	0.4517	0.058	0.0579	0.6944	0.3938	4.7246
679.6	0.301225	0.4518	0.058	0.0579	0.6944	0.3940	4.7266
679.8	0.301337	0.4520	0.058	0.0579	0.6944	0.3941	4.7286
680	0.301449	0.4522	0.058	0.0579	0.6944	0.3943	4.7306
680.2	0.301561	0.4523	0.058	0.0579	0.6944	0.3945	4.7326
680.4	0.301673	0.4525	0.058	0.0579	0.6944	0.3946	4.7347
680.6	0.301785	0.4527	0.058	0.0579	0.6944	0.3948	4.7367
680.8	0.301897	0.4528	0.058	0.0579	0.6944	0.3950	4.7387
681	0.302009	0.4530	0.058	0.0579	0.6944	0.3951	4.7407
681.2	0.302121	0.4532	0.058	0.0579	0.6944	0.3953	4.7427
681.4	0.302233	0.4534	0.058	0.0579	0.6944	0.3955	4.7447
681.6	0.302346	0.4535	0.058	0.0579	0.6944	0.3956	4.7468
681.8	0.302458	0.4537	0.058	0.0579	0.6944	0.3958	4.7488
682	0.30257	0.4539	0.058	0.0579	0.6944	0.3960	4.7508
682.2	0.302682	0.4540	0.058	0.0579	0.6944	0.3962	4.7528
682.4	0.302794	0.4542	0.058	0.0579	0.6944	0.3963	4.7548
682.6	0.302907	0.4544	0.058	0.0579	0.6944	0.3965	4.7569
682.8	0.303019	0.4545	0.058	0.0579	0.6944	0.3967	4.7589
683	0.303131	0.4547	0.058	0.0579	0.6944	0.3968	4.7609
683.2	0.303243	0.4549	0.058	0.0579	0.6944	0.3970	4.7629
683.4	0.303356	0.4550	0.058	0.0579	0.6944	0.3972	4.7649
683.6	0.303468	0.4552	0.058	0.0579	0.6944	0.3973	4.7670
683.8	0.303581	0.4554	0.058	0.0579	0.6944	0.3975	4.7690
684	0.303693	0.4555	0.058	0.0579	0.6944	0.3977	4.7710
684.2	0.303805	0.4557	0.058	0.0579	0.6944	0.3978	4.7730
684.4	0.303918	0.4559	0.058	0.0579	0.6944	0.3980	4.7751
684.6	0.30403	0.4560	0.058	0.0579	0.6944	0.3982	4.7771

684.8	0.304143	0.4562	0.058	0.0579	0.6944	0.3983	4.7791
685	0.304255	0.4564	0.058	0.0579	0.6944	0.3985	4.7811
685.2	0.304368	0.4566	0.058	0.0579	0.6944	0.3987	4.7832
685.4	0.30448	0.4567	0.058	0.0579	0.6944	0.3989	4.7852
685.6	0.304593	0.4569	0.058	0.0579	0.6944	0.3990	4.7872
685.8	0.304706	0.4571	0.058	0.0579	0.6944	0.3992	4.7892
686	0.304818	0.4572	0.058	0.0579	0.6944	0.3994	4.7913
686.2	0.304931	0.4574	0.058	0.0579	0.6944	0.3995	4.7933
686.4	0.305043	0.4576	0.058	0.0579	0.6944	0.3997	4.7953
686.6	0.305156	0.4577	0.058	0.0579	0.6944	0.3999	4.7974
686.8	0.305269	0.4579	0.058	0.0579	0.6944	0.4000	4.7994
687	0.305382	0.4581	0.058	0.0579	0.6944	0.4002	4.8014
687.2	0.305494	0.4582	0.058	0.0579	0.6944	0.4004	4.8034
687.4	0.305607	0.4584	0.058	0.0579	0.6944	0.4005	4.8055
687.6	0.30572	0.4586	0.058	0.0579	0.6944	0.4007	4.8075
687.8	0.305833	0.4587	0.058	0.0579	0.6944	0.4009	4.8095
688	0.305946	0.4589	0.058	0.0579	0.6944	0.4010	4.8116
688.2	0.306059	0.4591	0.058	0.0579	0.6944	0.4012	4.8136
688.4	0.306171	0.4593	0.058	0.0579	0.6944	0.4014	4.8156
688.6	0.306284	0.4594	0.058	0.0579	0.6944	0.4016	4.8177
688.8	0.306397	0.4596	0.058	0.0579	0.6944	0.4017	4.8197
689	0.30651	0.4598	0.058	0.0579	0.6944	0.4019	4.8217
689.2	0.306623	0.4599	0.058	0.0579	0.6944	0.4021	4.8238
689.4	0.306736	0.4601	0.058	0.0579	0.6944	0.4022	4.8258
689.6	0.306849	0.4603	0.058	0.0579	0.6944	0.4024	4.8278
689.8	0.306962	0.4604	0.058	0.0579	0.6944	0.4026	4.8299
690	0.307075	0.4606	0.058	0.0579	0.6944	0.4027	4.8319
690.2	0.307189	0.4608	0.058	0.0579	0.6944	0.4029	4.8339
690.4	0.307302	0.4610	0.058	0.0579	0.6944	0.4031	4.8360
690.6	0.307415	0.4611	0.058	0.0579	0.6944	0.4033	4.8380
690.8	0.307528	0.4613	0.058	0.0579	0.6944	0.4034	4.8400
691	0.307641	0.4615	0.058	0.0579	0.6944	0.4036	4.8421
691.2	0.307754	0.4616	0.058	0.0579	0.6944	0.4038	4.8441
691.4	0.307868	0.4618	0.058	0.0579	0.6944	0.4039	4.8462
691.6	0.307981	0.4620	0.058	0.0579	0.6944	0.4041	4.8482
691.8	0.308094	0.4621	0.058	0.0579	0.6944	0.4043	4.8502
692	0.308208	0.4623	0.058	0.0579	0.6944	0.4044	4.8523
692.2	0.308321	0.4625	0.058	0.0579	0.6944	0.4046	4.8543
692.4	0.308434	0.4627	0.058	0.0579	0.6944	0.4048	4.8564
692.6	0.308548	0.4628	0.058	0.0579	0.6944	0.4050	4.8584
692.8	0.308661	0.4630	0.058	0.0579	0.6944	0.4051	4.8604
693	0.308775	0.4632	0.058	0.0579	0.6944	0.4053	4.8625
693.2	0.308888	0.4633	0.058	0.0579	0.6944	0.4055	4.8645
693.4	0.309001	0.4635	0.058	0.0579	0.6944	0.4056	4.8666
693.6	0.309115	0.4637	0.058	0.0579	0.6944	0.4058	4.8686
693.8	0.309228	0.4638	0.058	0.0579	0.6944	0.4060	4.8706
694	0.309342	0.4640	0.058	0.0579	0.6944	0.4061	4.8727

694.2	0.309456	0.4642	0.058	0.0579	0.6944	0.4063	4.8747
694.4	0.309569	0.4644	0.058	0.0579	0.6944	0.4065	4.8768
694.6	0.309683	0.4645	0.058	0.0579	0.6944	0.4067	4.8788
694.8	0.309796	0.4647	0.058	0.0579	0.6944	0.4068	4.8809
695	0.30991	0.4649	0.058	0.0579	0.6944	0.4070	4.8829
695.2	0.310024	0.4650	0.058	0.0579	0.6944	0.4072	4.8850
695.4	0.310137	0.4652	0.058	0.0579	0.6944	0.4073	4.8870
695.6	0.310251	0.4654	0.058	0.0579	0.6944	0.4075	4.8891
695.8	0.310365	0.4655	0.058	0.0579	0.6944	0.4077	4.8911
696	0.310479	0.4657	0.058	0.0579	0.6944	0.4078	4.8931
696.2	0.310593	0.4659	0.058	0.0579	0.6944	0.4080	4.8952
696.4	0.310706	0.4661	0.058	0.0579	0.6944	0.4082	4.8972
696.6	0.31082	0.4662	0.058	0.0579	0.6944	0.4084	4.8993
696.8	0.310934	0.4664	0.058	0.0579	0.6944	0.4085	4.9013
697	0.311048	0.4666	0.058	0.0579	0.6944	0.4087	4.9034
697.2	0.311162	0.4667	0.058	0.0579	0.6944	0.4089	4.9054
697.4	0.311276	0.4669	0.058	0.0579	0.6944	0.4090	4.9075
697.6	0.31139	0.4671	0.058	0.0579	0.6944	0.4092	4.9095
697.8	0.311504	0.4673	0.058	0.0579	0.6944	0.4094	4.9116
698	0.311618	0.4674	0.058	0.0579	0.6944	0.4096	4.9137
698.2	0.311732	0.4676	0.058	0.0579	0.6944	0.4097	4.9157
698.4	0.311846	0.4678	0.058	0.0579	0.6944	0.4099	4.9178
698.6	0.31196	0.4679	0.058	0.0579	0.6944	0.4101	4.9198
698.8	0.312074	0.4681	0.058	0.0579	0.6944	0.4102	4.9219
699	0.312188	0.4683	0.058	0.0579	0.6944	0.4104	4.9239
699.2	0.312302	0.4685	0.058	0.0579	0.6944	0.4106	4.9260
699.4	0.312417	0.4686	0.058	0.0579	0.6944	0.4108	4.9280
699.6	0.312531	0.4688	0.058	0.0579	0.6944	0.4109	4.9301
699.8	0.312645	0.4690	0.058	0.0579	0.6944	0.4111	4.9321
700	0.312759	0.4691	0.058	0.0579	0.6944	0.4113	4.9342
700.2	0.312874	0.4693	0.058	0.0579	0.6944	0.4114	4.9363
700.4	0.312988	0.4695	0.058	0.0579	0.6944	0.4116	4.9383
700.6	0.313102	0.4697	0.058	0.0579	0.6944	0.4118	4.9404
700.8	0.313217	0.4698	0.058	0.0579	0.6944	0.4120	4.9424
701	0.313331	0.4700	0.058	0.0579	0.6944	0.4121	4.9445
701.2	0.313445	0.4702	0.058	0.0579	0.6944	0.4123	4.9465
701.4	0.31356	0.4703	0.058	0.0579	0.6944	0.4125	4.9486
701.6	0.313674	0.4705	0.058	0.0579	0.6944	0.4126	4.9507
701.8	0.313789	0.4707	0.058	0.0579	0.6944	0.4128	4.9527
702	0.313903	0.4709	0.058	0.0579	0.6944	0.4130	4.9548
702.2	0.314018	0.4710	0.058	0.0579	0.6944	0.4132	4.9568
702.4	0.314132	0.4712	0.058	0.0579	0.6944	0.4133	4.9589
702.6	0.314247	0.4714	0.058	0.0579	0.6944	0.4135	4.9610
702.8	0.314361	0.4715	0.058	0.0579	0.6944	0.4137	4.9630
703	0.314476	0.4717	0.058	0.0579	0.6944	0.4138	4.9651
703.2	0.314591	0.4719	0.058	0.0579	0.6944	0.4140	4.9672
703.4	0.314705	0.4721	0.058	0.0579	0.6944	0.4142	4.9692

703.6	0.31482	0.4722	0.058	0.0579	0.6944	0.4144	4.9713
703.8	0.314935	0.4724	0.058	0.0579	0.6944	0.4145	4.9733
704	0.315049	0.4726	0.058	0.0579	0.6944	0.4147	4.9754
704.2	0.315164	0.4727	0.058	0.0579	0.6944	0.4149	4.9775
704.4	0.315279	0.4729	0.058	0.0579	0.6944	0.4150	4.9795
704.6	0.315394	0.4731	0.058	0.0579	0.6944	0.4152	4.9816
704.8	0.315509	0.4733	0.058	0.0579	0.6944	0.4154	4.9837
705	0.315623	0.4734	0.058	0.0579	0.6944	0.4156	4.9857
705.2	0.315738	0.4736	0.058	0.0579	0.6944	0.4157	4.9878
705.4	0.315853	0.4738	0.058	0.0579	0.6944	0.4159	4.9899
705.6	0.315968	0.4740	0.058	0.0579	0.6944	0.4161	4.9919
705.8	0.316083	0.4741	0.058	0.0579	0.6944	0.4163	4.9940
706	0.316198	0.4743	0.058	0.0579	0.6944	0.4164	4.9961
706.2	0.316313	0.4745	0.058	0.0579	0.6944	0.4166	4.9982
706.4	0.316428	0.4746	0.058	0.0579	0.6944	0.4168	5.0002
706.6	0.316543	0.4748	0.058	0.0579	0.6944	0.4169	5.0023
706.8	0.316658	0.4750	0.058	0.0579	0.6944	0.4171	5.0044
707	0.316773	0.4752	0.058	0.0579	0.6944	0.4173	5.0064
707.2	0.316888	0.4753	0.058	0.0579	0.6944	0.4175	5.0085
707.4	0.317003	0.4755	0.058	0.0579	0.6944	0.4176	5.0106
707.6	0.317119	0.4757	0.058	0.0579	0.6944	0.4178	5.0127
707.8	0.317234	0.4759	0.058	0.0579	0.6944	0.4180	5.0147
708	0.317349	0.4760	0.058	0.0579	0.6944	0.4182	5.0168
708.2	0.317464	0.4762	0.058	0.0579	0.6944	0.4183	5.0189
708.4	0.31758	0.4764	0.058	0.0579	0.6944	0.4185	5.0210
708.6	0.317695	0.4765	0.058	0.0579	0.6944	0.4187	5.0230
708.8	0.31781	0.4767	0.058	0.0579	0.6944	0.4188	5.0251
709	0.317926	0.4769	0.058	0.0579	0.6944	0.4190	5.0272
709.2	0.318041	0.4771	0.058	0.0579	0.6944	0.4192	5.0293
709.4	0.318156	0.4772	0.058	0.0579	0.6944	0.4194	5.0313
709.6	0.318272	0.4774	0.058	0.0579	0.6944	0.4195	5.0334
709.8	0.318387	0.4776	0.058	0.0579	0.6944	0.4197	5.0355
710	0.318503	0.4778	0.058	0.0579	0.6944	0.4199	5.0376
710.2	0.318618	0.4779	0.058	0.0579	0.6944	0.4201	5.0396
710.4	0.318734	0.4781	0.058	0.0579	0.6944	0.4202	5.0417
710.6	0.318849	0.4783	0.058	0.0579	0.6944	0.4204	5.0438
710.8	0.318965	0.4784	0.058	0.0579	0.6944	0.4206	5.0459
711	0.31908	0.4786	0.058	0.0579	0.6944	0.4207	5.0480
711.2	0.319196	0.4788	0.058	0.0579	0.6944	0.4209	5.0500
711.4	0.319311	0.4790	0.058	0.0579	0.6944	0.4211	5.0521
711.6	0.319427	0.4791	0.058	0.0579	0.6944	0.4213	5.0542
711.8	0.319543	0.4793	0.058	0.0579	0.6944	0.4214	5.0563
712	0.319659	0.4795	0.058	0.0579	0.6944	0.4216	5.0584
712.2	0.319774	0.4797	0.058	0.0579	0.6944	0.4218	5.0605
712.4	0.31989	0.4798	0.058	0.0579	0.6944	0.4220	5.0625
712.6	0.320006	0.4800	0.058	0.0579	0.6944	0.4221	5.0646
712.8	0.320122	0.4802	0.058	0.0579	0.6944	0.4223	5.0667

713	0.320237	0.4804	0.058	0.0579	0.6944	0.4225	5.0688
713.2	0.320353	0.4805	0.058	0.0579	0.6944	0.4227	5.0709
713.4	0.320469	0.4807	0.058	0.0579	0.6944	0.4228	5.0730
713.6	0.320585	0.4809	0.058	0.0579	0.6944	0.4230	5.0750
713.8	0.320701	0.4811	0.058	0.0579	0.6944	0.4232	5.0771
714	0.320817	0.4812	0.058	0.0579	0.6944	0.4234	5.0792
714.2	0.320933	0.4814	0.058	0.0579	0.6944	0.4235	5.0813
714.4	0.321049	0.4816	0.058	0.0579	0.6944	0.4237	5.0834
714.6	0.321165	0.4817	0.058	0.0579	0.6944	0.4239	5.0855
714.8	0.321281	0.4819	0.058	0.0579	0.6944	0.4241	5.0876
715	0.321397	0.4821	0.058	0.0579	0.6944	0.4242	5.0897
715.2	0.321513	0.4823	0.058	0.0579	0.6944	0.4244	5.0917
715.4	0.321629	0.4824	0.058	0.0579	0.6944	0.4246	5.0938
715.6	0.321745	0.4826	0.058	0.0579	0.6944	0.4247	5.0959
715.8	0.321862	0.4828	0.058	0.0579	0.6944	0.4249	5.0980
716	0.321978	0.4830	0.058	0.0579	0.6944	0.4251	5.1001
716.2	0.322094	0.4831	0.058	0.0579	0.6944	0.4253	5.1022
716.4	0.32221	0.4833	0.058	0.0579	0.6944	0.4254	5.1043
716.6	0.322327	0.4835	0.058	0.0579	0.6944	0.4256	5.1064
716.8	0.322443	0.4837	0.058	0.0579	0.6944	0.4258	5.1085
717	0.322559	0.4838	0.058	0.0579	0.6944	0.4260	5.1106
717.2	0.322676	0.4840	0.058	0.0579	0.6944	0.4261	5.1127
717.4	0.322792	0.4842	0.058	0.0579	0.6944	0.4263	5.1148
717.6	0.322908	0.4844	0.058	0.0579	0.6944	0.4265	5.1169
717.8	0.323025	0.4845	0.058	0.0579	0.6944	0.4267	5.1190
718	0.323141	0.4847	0.058	0.0579	0.6944	0.4268	5.1211
718.2	0.323258	0.4849	0.058	0.0579	0.6944	0.4270	5.1231
718.4	0.323374	0.4851	0.058	0.0579	0.6944	0.4272	5.1252
718.6	0.323491	0.4852	0.058	0.0579	0.6944	0.4274	5.1273
718.8	0.323607	0.4854	0.058	0.0579	0.6944	0.4275	5.1294
719	0.323724	0.4856	0.058	0.0579	0.6944	0.4277	5.1315
719.2	0.323841	0.4858	0.058	0.0579	0.6944	0.4279	5.1336
719.4	0.323957	0.4859	0.058	0.0579	0.6944	0.4281	5.1357
719.6	0.324074	0.4861	0.058	0.0579	0.6944	0.4282	5.1378
719.8	0.324191	0.4863	0.058	0.0579	0.6944	0.4284	5.1399
720	0.324307	0.4865	0.058	0.0579	0.6944	0.4286	5.1420
720.2	0.324424	0.4866	0.058	0.0579	0.6944	0.4288	5.1441
720.4	0.324541	0.4868	0.058	0.0579	0.6944	0.4289	5.1462
720.6	0.324657	0.4870	0.058	0.0579	0.6944	0.4291	5.1483
720.8	0.324774	0.4872	0.058	0.0579	0.6944	0.4293	5.1504
721	0.324891	0.4873	0.058	0.0579	0.6944	0.4295	5.1525
721.2	0.325008	0.4875	0.058	0.0579	0.6944	0.4296	5.1546
721.4	0.325125	0.4877	0.058	0.0579	0.6944	0.4298	5.1568
721.6	0.325242	0.4879	0.058	0.0579	0.6944	0.4300	5.1589
721.8	0.325359	0.4880	0.058	0.0579	0.6944	0.4302	5.1610
722	0.325476	0.4882	0.058	0.0579	0.6944	0.4303	5.1631
722.2	0.325593	0.4884	0.058	0.0579	0.6944	0.4305	5.1652

722.4	0.32571	0.4886	0.058	0.0579	0.6944	0.4307	5.1673
722.6	0.325827	0.4887	0.058	0.0579	0.6944	0.4309	5.1694
722.8	0.325944	0.4889	0.058	0.0579	0.6944	0.4310	5.1715
723	0.326061	0.4891	0.058	0.0579	0.6944	0.4312	5.1736
723.2	0.326178	0.4893	0.058	0.0579	0.6944	0.4314	5.1757
723.4	0.326295	0.4894	0.058	0.0579	0.6944	0.4316	5.1778
723.6	0.326412	0.4896	0.058	0.0579	0.6944	0.4317	5.1799
723.8	0.32653	0.4898	0.058	0.0579	0.6944	0.4319	5.1820
724	0.326647	0.4900	0.058	0.0579	0.6944	0.4321	5.1841
724.2	0.326764	0.4901	0.058	0.0579	0.6944	0.4323	5.1863
724.4	0.326881	0.4903	0.058	0.0579	0.6944	0.4325	5.1884
724.6	0.326999	0.4905	0.058	0.0579	0.6944	0.4326	5.1905
724.8	0.327116	0.4907	0.058	0.0579	0.6944	0.4328	5.1926
725	0.327233	0.4908	0.058	0.0579	0.6944	0.4330	5.1947
725.2	0.327351	0.4910	0.058	0.0579	0.6944	0.4332	5.1968
725.4	0.327468	0.4912	0.058	0.0579	0.6944	0.4333	5.1989
725.6	0.327585	0.4914	0.058	0.0579	0.6944	0.4335	5.2010
725.8	0.327703	0.4916	0.058	0.0579	0.6944	0.4337	5.2032
726	0.32782	0.4917	0.058	0.0579	0.6944	0.4339	5.2053
726.2	0.327938	0.4919	0.058	0.0579	0.6944	0.4340	5.2074
726.4	0.328055	0.4921	0.058	0.0579	0.6944	0.4342	5.2095
726.6	0.328173	0.4923	0.058	0.0579	0.6944	0.4344	5.2116
726.8	0.328291	0.4924	0.058	0.0579	0.6944	0.4346	5.2137
727	0.328408	0.4926	0.058	0.0579	0.6944	0.4347	5.2158
727.2	0.328526	0.4928	0.058	0.0579	0.6944	0.4349	5.2180
727.4	0.328643	0.4930	0.058	0.0579	0.6944	0.4351	5.2201
727.6	0.328761	0.4931	0.058	0.0579	0.6944	0.4353	5.2222
727.8	0.328879	0.4933	0.058	0.0579	0.6944	0.4354	5.2243
728	0.328997	0.4935	0.058	0.0579	0.6944	0.4356	5.2264
728.2	0.329114	0.4937	0.058	0.0579	0.6944	0.4358	5.2286
728.4	0.329232	0.4938	0.058	0.0579	0.6944	0.4360	5.2307
728.6	0.32935	0.4940	0.058	0.0579	0.6944	0.4362	5.2328
728.8	0.329468	0.4942	0.058	0.0579	0.6944	0.4363	5.2349
729	0.329586	0.4944	0.058	0.0579	0.6944	0.4365	5.2370
729.2	0.329704	0.4946	0.058	0.0579	0.6944	0.4367	5.2392
729.4	0.329821	0.4947	0.058	0.0579	0.6944	0.4369	5.2413
729.6	0.329939	0.4949	0.058	0.0579	0.6944	0.4370	5.2434
729.8	0.330057	0.4951	0.058	0.0579	0.6944	0.4372	5.2455
730	0.330175	0.4953	0.058	0.0579	0.6944	0.4374	5.2477
730.2	0.330293	0.4954	0.058	0.0579	0.6944	0.4376	5.2498
730.4	0.330411	0.4956	0.058	0.0579	0.6944	0.4377	5.2519
730.6	0.33053	0.4958	0.058	0.0579	0.6944	0.4379	5.2540
730.8	0.330648	0.4960	0.058	0.0579	0.6944	0.4381	5.2562
731	0.330766	0.4961	0.058	0.0579	0.6944	0.4383	5.2583
731.2	0.330884	0.4963	0.058	0.0579	0.6944	0.4385	5.2604
731.4	0.331002	0.4965	0.058	0.0579	0.6944	0.4386	5.2625
731.6	0.33112	0.4967	0.058	0.0579	0.6944	0.4388	5.2647

731.8	0.331239	0.4969	0.058	0.0579	0.6944	0.4390	5.2668
732	0.331357	0.4970	0.058	0.0579	0.6944	0.4392	5.2689
732.2	0.331475	0.4972	0.058	0.0579	0.6944	0.4393	5.2710
732.4	0.331593	0.4974	0.058	0.0579	0.6944	0.4395	5.2732
732.6	0.331712	0.4976	0.058	0.0579	0.6944	0.4397	5.2753
732.8	0.33183	0.4977	0.058	0.0579	0.6944	0.4399	5.2774
733	0.331949	0.4979	0.058	0.0579	0.6944	0.4401	5.2796
733.2	0.332067	0.4981	0.058	0.0579	0.6944	0.4402	5.2817
733.4	0.332185	0.4983	0.058	0.0579	0.6944	0.4404	5.2838
733.6	0.332304	0.4985	0.058	0.0579	0.6944	0.4406	5.2860
733.8	0.332422	0.4986	0.058	0.0579	0.6944	0.4408	5.2881
734	0.332541	0.4988	0.058	0.0579	0.6944	0.4409	5.2902
734.2	0.332659	0.4990	0.058	0.0579	0.6944	0.4411	5.2924
734.4	0.332778	0.4992	0.058	0.0579	0.6944	0.4413	5.2945
734.6	0.332897	0.4993	0.058	0.0579	0.6944	0.4415	5.2966
734.8	0.333015	0.4995	0.058	0.0579	0.6944	0.4417	5.2988
735	0.333134	0.4997	0.058	0.0579	0.6944	0.4418	5.3009
735.2	0.333253	0.4999	0.058	0.0579	0.6944	0.4420	5.3030
735.4	0.333371	0.5001	0.058	0.0579	0.6944	0.4422	5.3052
735.6	0.33349	0.5002	0.058	0.0579	0.6944	0.4424	5.3073
735.8	0.333609	0.5004	0.058	0.0579	0.6944	0.4425	5.3094
736	0.333728	0.5006	0.058	0.0579	0.6944	0.4427	5.3116
736.2	0.333846	0.5008	0.058	0.0579	0.6944	0.4429	5.3137
736.4	0.333965	0.5009	0.058	0.0579	0.6944	0.4431	5.3159
736.6	0.334084	0.5011	0.058	0.0579	0.6944	0.4433	5.3180
736.8	0.334203	0.5013	0.058	0.0579	0.6944	0.4434	5.3201
737	0.334322	0.5015	0.058	0.0579	0.6944	0.4436	5.3223
737.2	0.334441	0.5017	0.058	0.0579	0.6944	0.4438	5.3244
737.4	0.33456	0.5018	0.058	0.0579	0.6944	0.4440	5.3266
737.6	0.334679	0.5020	0.058	0.0579	0.6944	0.4441	5.3287
737.8	0.334798	0.5022	0.058	0.0579	0.6944	0.4443	5.3308
738	0.334917	0.5024	0.058	0.0579	0.6944	0.4445	5.3330
738.2	0.335036	0.5026	0.058	0.0579	0.6944	0.4447	5.3351
738.4	0.335155	0.5027	0.058	0.0579	0.6944	0.4449	5.3373
738.6	0.335274	0.5029	0.058	0.0579	0.6944	0.4450	5.3394
738.8	0.335394	0.5031	0.058	0.0579	0.6944	0.4452	5.3416
739	0.335513	0.5033	0.058	0.0579	0.6944	0.4454	5.3437
739.2	0.335632	0.5034	0.058	0.0579	0.6944	0.4456	5.3459
739.4	0.335751	0.5036	0.058	0.0579	0.6944	0.4458	5.3480
739.6	0.335871	0.5038	0.058	0.0579	0.6944	0.4459	5.3502
739.8	0.33599	0.5040	0.058	0.0579	0.6944	0.4461	5.3523
740	0.336109	0.5042	0.058	0.0579	0.6944	0.4463	5.3544
740.2	0.336229	0.5043	0.058	0.0579	0.6944	0.4465	5.3566
740.4	0.336348	0.5045	0.058	0.0579	0.6944	0.4467	5.3587
740.6	0.336467	0.5047	0.058	0.0579	0.6944	0.4468	5.3609
740.8	0.336587	0.5049	0.058	0.0579	0.6944	0.4470	5.3630
741	0.336706	0.5051	0.058	0.0579	0.6944	0.4472	5.3652

741.2	0.336826	0.5052	0.058	0.0579	0.6944	0.4474	5.3673
741.4	0.336945	0.5054	0.058	0.0579	0.6944	0.4475	5.3695
741.6	0.337065	0.5056	0.058	0.0579	0.6944	0.4477	5.3716
741.8	0.337185	0.5058	0.058	0.0579	0.6944	0.4479	5.3738
742	0.337304	0.5060	0.058	0.0579	0.6944	0.4481	5.3760
742.2	0.337424	0.5061	0.058	0.0579	0.6944	0.4483	5.3781
742.4	0.337543	0.5063	0.058	0.0579	0.6944	0.4484	5.3803
742.6	0.337663	0.5065	0.058	0.0579	0.6944	0.4486	5.3824
742.8	0.337783	0.5067	0.058	0.0579	0.6944	0.4488	5.3846
743	0.337903	0.5069	0.058	0.0579	0.6944	0.4490	5.3867
743.2	0.338022	0.5070	0.058	0.0579	0.6944	0.4492	5.3889
743.4	0.338142	0.5072	0.058	0.0579	0.6944	0.4493	5.3910
743.6	0.338262	0.5074	0.058	0.0579	0.6944	0.4495	5.3932
743.8	0.338382	0.5076	0.058	0.0579	0.6944	0.4497	5.3954
744	0.338502	0.5078	0.058	0.0579	0.6944	0.4499	5.3975
744.2	0.338622	0.5079	0.058	0.0579	0.6944	0.4501	5.3997
744.4	0.338742	0.5081	0.058	0.0579	0.6944	0.4502	5.4018
744.6	0.338862	0.5083	0.058	0.0579	0.6944	0.4504	5.4040
744.8	0.338982	0.5085	0.058	0.0579	0.6944	0.4506	5.4061
745	0.339102	0.5087	0.058	0.0579	0.6944	0.4508	5.4083
745.2	0.339222	0.5088	0.058	0.0579	0.6944	0.4510	5.4105
745.4	0.339342	0.5090	0.058	0.0579	0.6944	0.4511	5.4126
745.6	0.339462	0.5092	0.058	0.0579	0.6944	0.4513	5.4148
745.8	0.339582	0.5094	0.058	0.0579	0.6944	0.4515	5.4169
746	0.339702	0.5096	0.058	0.0579	0.6944	0.4517	5.4191
746.2	0.339822	0.5097	0.058	0.0579	0.6944	0.4519	5.4213
746.4	0.339943	0.5099	0.058	0.0579	0.6944	0.4520	5.4234
746.6	0.340063	0.5101	0.058	0.0579	0.6944	0.4522	5.4256
746.8	0.340183	0.5103	0.058	0.0579	0.6944	0.4524	5.4278
747	0.340303	0.5105	0.058	0.0579	0.6944	0.4526	5.4299
747.2	0.340424	0.5106	0.058	0.0579	0.6944	0.4528	5.4321
747.4	0.340544	0.5108	0.058	0.0579	0.6944	0.4529	5.4343
747.6	0.340664	0.5110	0.058	0.0579	0.6944	0.4531	5.4364
747.8	0.340785	0.5112	0.058	0.0579	0.6944	0.4533	5.4386
748	0.340905	0.5114	0.058	0.0579	0.6944	0.4535	5.4408
748.2	0.341026	0.5115	0.058	0.0579	0.6944	0.4537	5.4429
748.4	0.341146	0.5117	0.058	0.0579	0.6944	0.4538	5.4451
748.6	0.341267	0.5119	0.058	0.0579	0.6944	0.4540	5.4473
748.8	0.341387	0.5121	0.058	0.0579	0.6944	0.4542	5.4494
749	0.341508	0.5123	0.058	0.0579	0.6944	0.4544	5.4516
749.2	0.341629	0.5124	0.058	0.0579	0.6944	0.4546	5.4538
749.4	0.341749	0.5126	0.058	0.0579	0.6944	0.4548	5.4560
749.6	0.34187	0.5128	0.058	0.0579	0.6944	0.4549	5.4581
749.8	0.341991	0.5130	0.058	0.0579	0.6944	0.4551	5.4603
750	0.342111	0.5132	0.058	0.0579	0.6944	0.4553	5.4625
750.2	0.342232	0.5133	0.058	0.0579	0.6944	0.4555	5.4646
750.4	0.342353	0.5135	0.058	0.0579	0.6944	0.4557	5.4668

750.6	0.342474	0.5137	0.058	0.0579	0.6944	0.4558	5.4690
750.8	0.342594	0.5139	0.058	0.0579	0.6944	0.4560	5.4712
751	0.342715	0.5141	0.058	0.0579	0.6944	0.4562	5.4733
751.2	0.342836	0.5143	0.058	0.0579	0.6944	0.4564	5.4755
751.4	0.342957	0.5144	0.058	0.0579	0.6944	0.4566	5.4777
751.6	0.343078	0.5146	0.058	0.0579	0.6944	0.4567	5.4799
751.8	0.343199	0.5148	0.058	0.0579	0.6944	0.4569	5.4820
752	0.34332	0.5150	0.058	0.0579	0.6944	0.4571	5.4842
752.2	0.343441	0.5152	0.058	0.0579	0.6944	0.4573	5.4864
752.4	0.343562	0.5153	0.058	0.0579	0.6944	0.4575	5.4886
752.6	0.343683	0.5155	0.058	0.0579	0.6944	0.4577	5.4908
752.8	0.343804	0.5157	0.058	0.0579	0.6944	0.4578	5.4929
753	0.343925	0.5159	0.058	0.0579	0.6944	0.4580	5.4951
753.2	0.344047	0.5161	0.058	0.0579	0.6944	0.4582	5.4973
753.4	0.344168	0.5163	0.058	0.0579	0.6944	0.4584	5.4995
753.6	0.344289	0.5164	0.058	0.0579	0.6944	0.4586	5.5017
753.8	0.34441	0.5166	0.058	0.0579	0.6944	0.4587	5.5039
754	0.344532	0.5168	0.058	0.0579	0.6944	0.4589	5.5060
754.2	0.344653	0.5170	0.058	0.0579	0.6944	0.4591	5.5082
754.4	0.344774	0.5172	0.058	0.0579	0.6944	0.4593	5.5104
754.6	0.344896	0.5173	0.058	0.0579	0.6944	0.4595	5.5126
754.8	0.345017	0.5175	0.058	0.0579	0.6944	0.4597	5.5148
755	0.345139	0.5177	0.058	0.0579	0.6944	0.4598	5.5170
755.2	0.34526	0.5179	0.058	0.0579	0.6944	0.4600	5.5191
755.4	0.345381	0.5181	0.058	0.0579	0.6944	0.4602	5.5213
755.6	0.345503	0.5183	0.058	0.0579	0.6944	0.4604	5.5235
755.8	0.345625	0.5184	0.058	0.0579	0.6944	0.4606	5.5257
756	0.345746	0.5186	0.058	0.0579	0.6944	0.4607	5.5279
756.2	0.345868	0.5188	0.058	0.0579	0.6944	0.4609	5.5301
756.4	0.345989	0.5190	0.058	0.0579	0.6944	0.4611	5.5323
756.6	0.346111	0.5192	0.058	0.0579	0.6944	0.4613	5.5345
756.8	0.346233	0.5193	0.058	0.0579	0.6944	0.4615	5.5366
757	0.346354	0.5195	0.058	0.0579	0.6944	0.4617	5.5388
757.2	0.346476	0.5197	0.058	0.0579	0.6944	0.4618	5.5410
757.4	0.346598	0.5199	0.058	0.0579	0.6944	0.4620	5.5432
757.6	0.34672	0.5201	0.058	0.0579	0.6944	0.4622	5.5454
757.8	0.346842	0.5203	0.058	0.0579	0.6944	0.4624	5.5476
758	0.346964	0.5204	0.058	0.0579	0.6944	0.4626	5.5498
758.2	0.347085	0.5206	0.058	0.0579	0.6944	0.4628	5.5520
758.4	0.347207	0.5208	0.058	0.0579	0.6944	0.4629	5.5542
758.6	0.347329	0.5210	0.058	0.0579	0.6944	0.4631	5.5564
758.8	0.347451	0.5212	0.058	0.0579	0.6944	0.4633	5.5586
759	0.347573	0.5214	0.058	0.0579	0.6944	0.4635	5.5608
759.2	0.347695	0.5215	0.058	0.0579	0.6944	0.4637	5.5630
759.4	0.347817	0.5217	0.058	0.0579	0.6944	0.4639	5.5652
759.6	0.34794	0.5219	0.058	0.0579	0.6944	0.4640	5.5674
759.8	0.348062	0.5221	0.058	0.0579	0.6944	0.4642	5.5696

760	0.348184	0.5223	0.058	0.0579	0.6944	0.4644	5.5718
760.2	0.348306	0.5225	0.058	0.0579	0.6944	0.4646	5.5740
760.4	0.348428	0.5226	0.058	0.0579	0.6944	0.4648	5.5762
760.6	0.34855	0.5228	0.058	0.0579	0.6944	0.4650	5.5784
760.8	0.348673	0.5230	0.058	0.0579	0.6944	0.4651	5.5806
761	0.348795	0.5232	0.058	0.0579	0.6944	0.4653	5.5828
761.2	0.348917	0.5234	0.058	0.0579	0.6944	0.4655	5.5850
761.4	0.34904	0.5236	0.058	0.0579	0.6944	0.4657	5.5872
761.6	0.349162	0.5237	0.058	0.0579	0.6944	0.4659	5.5894
761.8	0.349285	0.5239	0.058	0.0579	0.6944	0.4661	5.5916
762	0.349407	0.5241	0.058	0.0579	0.6944	0.4662	5.5938
762.2	0.34953	0.5243	0.058	0.0579	0.6944	0.4664	5.5960
762.4	0.349652	0.5245	0.058	0.0579	0.6944	0.4666	5.5982
762.6	0.349775	0.5247	0.058	0.0579	0.6944	0.4668	5.6004
762.8	0.349897	0.5248	0.058	0.0579	0.6944	0.4670	5.6026
763	0.35002	0.5250	0.058	0.0579	0.6944	0.4672	5.6048
763.2	0.350142	0.5252	0.058	0.0579	0.6944	0.4673	5.6070
763.4	0.350265	0.5254	0.058	0.0579	0.6944	0.4675	5.6092
763.6	0.350388	0.5256	0.058	0.0579	0.6944	0.4677	5.6114
763.8	0.35051	0.5258	0.058	0.0579	0.6944	0.4679	5.6136
764	0.350633	0.5259	0.058	0.0579	0.6944	0.4681	5.6158
764.2	0.350756	0.5261	0.058	0.0579	0.6944	0.4683	5.6181
764.4	0.350879	0.5263	0.058	0.0579	0.6944	0.4684	5.6203
764.6	0.351002	0.5265	0.058	0.0579	0.6944	0.4686	5.6225
764.8	0.351124	0.5267	0.058	0.0579	0.6944	0.4688	5.6247
765	0.351247	0.5269	0.058	0.0579	0.6944	0.4690	5.6269
765.2	0.35137	0.5271	0.058	0.0579	0.6944	0.4692	5.6291
765.4	0.351493	0.5272	0.058	0.0579	0.6944	0.4694	5.6313
765.6	0.351616	0.5274	0.058	0.0579	0.6944	0.4696	5.6335
765.8	0.351739	0.5276	0.058	0.0579	0.6944	0.4697	5.6358
766	0.351862	0.5278	0.058	0.0579	0.6944	0.4699	5.6380
766.2	0.351985	0.5280	0.058	0.0579	0.6944	0.4701	5.6402
766.4	0.352109	0.5282	0.058	0.0579	0.6944	0.4703	5.6424
766.6	0.352232	0.5283	0.058	0.0579	0.6944	0.4705	5.6446
766.8	0.352355	0.5285	0.058	0.0579	0.6944	0.4707	5.6468
767	0.352478	0.5287	0.058	0.0579	0.6944	0.4708	5.6491
767.2	0.352601	0.5289	0.058	0.0579	0.6944	0.4710	5.6513
767.4	0.352725	0.5291	0.058	0.0579	0.6944	0.4712	5.6535
767.6	0.352848	0.5293	0.058	0.0579	0.6944	0.4714	5.6557
767.8	0.352971	0.5295	0.058	0.0579	0.6944	0.4716	5.6579
768	0.353094	0.5296	0.058	0.0579	0.6944	0.4718	5.6601
768.2	0.353218	0.5298	0.058	0.0579	0.6944	0.4720	5.6624
768.4	0.353341	0.5300	0.058	0.0579	0.6944	0.4721	5.6646
768.6	0.353465	0.5302	0.058	0.0579	0.6944	0.4723	5.6668
768.8	0.353588	0.5304	0.058	0.0579	0.6944	0.4725	5.6690
769	0.353712	0.5306	0.058	0.0579	0.6944	0.4727	5.6713
769.2	0.353835	0.5308	0.058	0.0579	0.6944	0.4729	5.6735

769.4	0.353959	0.5309	0.058	0.0579	0.6944	0.4731	5.6757
769.6	0.354082	0.5311	0.058	0.0579	0.6944	0.4733	5.6779
769.8	0.354206	0.5313	0.058	0.0579	0.6944	0.4734	5.6802
770	0.35433	0.5315	0.058	0.0579	0.6944	0.4736	5.6824
770.2	0.354453	0.5317	0.058	0.0579	0.6944	0.4738	5.6846
770.4	0.354577	0.5319	0.058	0.0579	0.6944	0.4740	5.6868
770.6	0.354701	0.5321	0.058	0.0579	0.6944	0.4742	5.6891
770.8	0.354825	0.5322	0.058	0.0579	0.6944	0.4744	5.6913
771	0.354948	0.5324	0.058	0.0579	0.6944	0.4746	5.6935
771.2	0.355072	0.5326	0.058	0.0579	0.6944	0.4747	5.6957
771.4	0.355196	0.5328	0.058	0.0579	0.6944	0.4749	5.6980
771.6	0.35532	0.5330	0.058	0.0579	0.6944	0.4751	5.7002
771.8	0.355444	0.5332	0.058	0.0579	0.6944	0.4753	5.7024
772	0.355568	0.5334	0.058	0.0579	0.6944	0.4755	5.7047
772.2	0.355692	0.5335	0.058	0.0579	0.6944	0.4757	5.7069
772.4	0.355816	0.5337	0.058	0.0579	0.6944	0.4759	5.7091
772.6	0.35594	0.5339	0.058	0.0579	0.6944	0.4760	5.7114
772.8	0.356064	0.5341	0.058	0.0579	0.6944	0.4762	5.7136
773	0.356188	0.5343	0.058	0.0579	0.6944	0.4764	5.7158
773.2	0.356312	0.5345	0.058	0.0579	0.6944	0.4766	5.7181
773.4	0.356436	0.5347	0.058	0.0579	0.6944	0.4768	5.7203
773.6	0.356561	0.5348	0.058	0.0579	0.6944	0.4770	5.7225
773.8	0.356685	0.5350	0.058	0.0579	0.6944	0.4772	5.7248
774	0.356809	0.5352	0.058	0.0579	0.6944	0.4773	5.7270
774.2	0.356933	0.5354	0.058	0.0579	0.6944	0.4775	5.7292
774.4	0.357058	0.5356	0.058	0.0579	0.6944	0.4777	5.7315
774.6	0.357182	0.5358	0.058	0.0579	0.6944	0.4779	5.7337
774.8	0.357306	0.5360	0.058	0.0579	0.6944	0.4781	5.7360
775	0.357431	0.5361	0.058	0.0579	0.6944	0.4783	5.7382
775.2	0.357555	0.5363	0.058	0.0579	0.6944	0.4785	5.7404
775.4	0.35768	0.5365	0.058	0.0579	0.6944	0.4786	5.7427
775.6	0.357804	0.5367	0.058	0.0579	0.6944	0.4788	5.7449
775.8	0.357929	0.5369	0.058	0.0579	0.6944	0.4790	5.7472
776	0.358053	0.5371	0.058	0.0579	0.6944	0.4792	5.7494
776.2	0.358178	0.5373	0.058	0.0579	0.6944	0.4794	5.7516
776.4	0.358303	0.5375	0.058	0.0579	0.6944	0.4796	5.7539
776.6	0.358427	0.5376	0.058	0.0579	0.6944	0.4798	5.7561
776.8	0.358552	0.5378	0.058	0.0579	0.6944	0.4800	5.7584
777	0.358677	0.5380	0.058	0.0579	0.6944	0.4801	5.7606
777.2	0.358802	0.5382	0.058	0.0579	0.6944	0.4803	5.7629
777.4	0.358926	0.5384	0.058	0.0579	0.6944	0.4805	5.7651
777.6	0.359051	0.5386	0.058	0.0579	0.6944	0.4807	5.7674
777.8	0.359176	0.5388	0.058	0.0579	0.6944	0.4809	5.7696
778	0.359301	0.5390	0.058	0.0579	0.6944	0.4811	5.7718
778.2	0.359426	0.5391	0.058	0.0579	0.6944	0.4813	5.7741
778.4	0.359551	0.5393	0.058	0.0579	0.6944	0.4815	5.7763
778.6	0.359676	0.5395	0.058	0.0579	0.6944	0.4816	5.7786

778.8	0.359801	0.5397	0.058	0.0579	0.6944	0.4818	5.7808
779	0.359926	0.5399	0.058	0.0579	0.6944	0.4820	5.7831
779.2	0.360051	0.5401	0.058	0.0579	0.6944	0.4822	5.7853
779.4	0.360176	0.5403	0.058	0.0579	0.6944	0.4824	5.7876
779.6	0.360301	0.5405	0.058	0.0579	0.6944	0.4826	5.7899
779.8	0.360426	0.5406	0.058	0.0579	0.6944	0.4828	5.7921
780	0.360552	0.5408	0.058	0.0579	0.6944	0.4830	5.7944
780.2	0.360677	0.5410	0.058	0.0579	0.6944	0.4831	5.7966
780.4	0.360802	0.5412	0.058	0.0579	0.6944	0.4833	5.7989
780.6	0.360927	0.5414	0.058	0.0579	0.6944	0.4835	5.8011
780.8	0.361053	0.5416	0.058	0.0579	0.6944	0.4837	5.8034
781	0.361178	0.5418	0.058	0.0579	0.6944	0.4839	5.8056
781.2	0.361303	0.5420	0.058	0.0579	0.6944	0.4841	5.8079
781.4	0.361429	0.5421	0.058	0.0579	0.6944	0.4843	5.8101
781.6	0.361554	0.5423	0.058	0.0579	0.6944	0.4845	5.8124
781.8	0.36168	0.5425	0.058	0.0579	0.6944	0.4846	5.8147
782	0.361805	0.5427	0.058	0.0579	0.6944	0.4848	5.8169
782.2	0.361931	0.5429	0.058	0.0579	0.6944	0.4850	5.8192
782.4	0.362056	0.5431	0.058	0.0579	0.6944	0.4852	5.8214
782.6	0.362182	0.5433	0.058	0.0579	0.6944	0.4854	5.8237
782.8	0.362308	0.5435	0.058	0.0579	0.6944	0.4856	5.8260
783	0.362433	0.5437	0.058	0.0579	0.6944	0.4858	5.8282
783.2	0.362559	0.5438	0.058	0.0579	0.6944	0.4860	5.8305
783.4	0.362685	0.5440	0.058	0.0579	0.6944	0.4862	5.8328
783.6	0.362811	0.5442	0.058	0.0579	0.6944	0.4863	5.8350
783.8	0.362936	0.5444	0.058	0.0579	0.6944	0.4865	5.8373
784	0.363062	0.5446	0.058	0.0579	0.6944	0.4867	5.8395
784.2	0.363188	0.5448	0.058	0.0579	0.6944	0.4869	5.8418
784.4	0.363314	0.5450	0.058	0.0579	0.6944	0.4871	5.8441
784.6	0.36344	0.5452	0.058	0.0579	0.6944	0.4873	5.8463
784.8	0.363566	0.5453	0.058	0.0579	0.6944	0.4875	5.8486
785	0.363692	0.5455	0.058	0.0579	0.6944	0.4877	5.8509
785.2	0.363818	0.5457	0.058	0.0579	0.6944	0.4879	5.8531
785.4	0.363944	0.5459	0.058	0.0579	0.6944	0.4880	5.8554
785.6	0.36407	0.5461	0.058	0.0579	0.6944	0.4882	5.8577
785.8	0.364196	0.5463	0.058	0.0579	0.6944	0.4884	5.8600
786	0.364322	0.5465	0.058	0.0579	0.6944	0.4886	5.8622
786.2	0.364449	0.5467	0.058	0.0579	0.6944	0.4888	5.8645
786.4	0.364575	0.5469	0.058	0.0579	0.6944	0.4890	5.8668
786.6	0.364701	0.5471	0.058	0.0579	0.6944	0.4892	5.8690
786.8	0.364827	0.5472	0.058	0.0579	0.6944	0.4894	5.8713
787	0.364954	0.5474	0.058	0.0579	0.6944	0.4896	5.8736
787.2	0.36508	0.5476	0.058	0.0579	0.6944	0.4897	5.8759
787.4	0.365207	0.5478	0.058	0.0579	0.6944	0.4899	5.8781
787.6	0.365333	0.5480	0.058	0.0579	0.6944	0.4901	5.8804
787.8	0.365459	0.5482	0.058	0.0579	0.6944	0.4903	5.8827
788	0.365586	0.5484	0.058	0.0579	0.6944	0.4905	5.8850

788.2	0.365712	0.5486	0.058	0.0579	0.6944	0.4907	5.8872
788.4	0.365839	0.5488	0.058	0.0579	0.6944	0.4909	5.8895
788.6	0.365966	0.5489	0.058	0.0579	0.6944	0.4911	5.8918
788.8	0.366092	0.5491	0.058	0.0579	0.6944	0.4913	5.8941
789	0.366219	0.5493	0.058	0.0579	0.6944	0.4915	5.8964
789.2	0.366346	0.5495	0.058	0.0579	0.6944	0.4916	5.8986
789.4	0.366472	0.5497	0.058	0.0579	0.6944	0.4918	5.9009
789.6	0.366599	0.5499	0.058	0.0579	0.6944	0.4920	5.9032
789.8	0.366726	0.5501	0.058	0.0579	0.6944	0.4922	5.9055
790	0.366853	0.5503	0.058	0.0579	0.6944	0.4924	5.9078
790.2	0.366979	0.5505	0.058	0.0579	0.6944	0.4926	5.9100
790.4	0.367106	0.5507	0.058	0.0579	0.6944	0.4928	5.9123
790.6	0.367233	0.5508	0.058	0.0579	0.6944	0.4930	5.9146
790.8	0.36736	0.5510	0.058	0.0579	0.6944	0.4932	5.9169
791	0.367487	0.5512	0.058	0.0579	0.6944	0.4934	5.9192
791.2	0.367614	0.5514	0.058	0.0579	0.6944	0.4936	5.9215
791.4	0.367741	0.5516	0.058	0.0579	0.6944	0.4937	5.9238
791.6	0.367868	0.5518	0.058	0.0579	0.6944	0.4939	5.9260
791.8	0.367995	0.5520	0.058	0.0579	0.6944	0.4941	5.9283
792	0.368123	0.5522	0.058	0.0579	0.6944	0.4943	5.9306
792.2	0.36825	0.5524	0.058	0.0579	0.6944	0.4945	5.9329
792.4	0.368377	0.5526	0.058	0.0579	0.6944	0.4947	5.9352
792.6	0.368504	0.5528	0.058	0.0579	0.6944	0.4949	5.9375
792.8	0.368632	0.5529	0.058	0.0579	0.6944	0.4951	5.9398
793	0.368759	0.5531	0.058	0.0579	0.6944	0.4953	5.9421
793.2	0.368886	0.5533	0.058	0.0579	0.6944	0.4955	5.9444
793.4	0.369014	0.5535	0.058	0.0579	0.6944	0.4956	5.9467
793.6	0.369141	0.5537	0.058	0.0579	0.6944	0.4958	5.9489
793.8	0.369268	0.5539	0.058	0.0579	0.6944	0.4960	5.9512
794	0.369396	0.5541	0.058	0.0579	0.6944	0.4962	5.9535
794.2	0.369523	0.5543	0.058	0.0579	0.6944	0.4964	5.9558
794.4	0.369651	0.5545	0.058	0.0579	0.6944	0.4966	5.9581
794.6	0.369779	0.5547	0.058	0.0579	0.6944	0.4968	5.9604
794.8	0.369906	0.5549	0.058	0.0579	0.6944	0.4970	5.9627
795	0.370034	0.5551	0.058	0.0579	0.6944	0.4972	5.9650
795.2	0.370161	0.5552	0.058	0.0579	0.6944	0.4974	5.9673
795.4	0.370289	0.5554	0.058	0.0579	0.6944	0.4976	5.9696
795.6	0.370417	0.5556	0.058	0.0579	0.6944	0.4978	5.9719
795.8	0.370545	0.5558	0.058	0.0579	0.6944	0.4979	5.9742
796	0.370673	0.5560	0.058	0.0579	0.6944	0.4981	5.9765
796.2	0.3708	0.5562	0.058	0.0579	0.6944	0.4983	5.9788
796.4	0.370928	0.5564	0.058	0.0579	0.6944	0.4985	5.9811
796.6	0.371056	0.5566	0.058	0.0579	0.6944	0.4987	5.9834
796.8	0.371184	0.5568	0.058	0.0579	0.6944	0.4989	5.9857
797	0.371312	0.5570	0.058	0.0579	0.6944	0.4991	5.9880
797.2	0.37144	0.5572	0.058	0.0579	0.6944	0.4993	5.9903
797.4	0.371568	0.5574	0.058	0.0579	0.6944	0.4995	5.9926

797.6	0.371696	0.5575	0.058	0.0579	0.6944	0.4997	5.9949
797.8	0.371824	0.5577	0.058	0.0579	0.6944	0.4999	5.9972
798	0.371953	0.5579	0.058	0.0579	0.6944	0.5001	5.9995
798.2	0.372081	0.5581	0.058	0.0579	0.6944	0.5003	6.0019
798.4	0.372209	0.5583	0.058	0.0579	0.6944	0.5004	6.0042
798.6	0.372337	0.5585	0.058	0.0579	0.6944	0.5006	6.0065
798.8	0.372466	0.5587	0.058	0.0579	0.6944	0.5008	6.0088
799	0.372594	0.5589	0.058	0.0579	0.6944	0.5010	6.0111
799.2	0.372722	0.5591	0.058	0.0579	0.6944	0.5012	6.0134
799.4	0.372851	0.5593	0.058	0.0579	0.6944	0.5014	6.0157
799.6	0.372979	0.5595	0.058	0.0579	0.6944	0.5016	6.0180
799.8	0.373107	0.5597	0.058	0.0579	0.6944	0.5018	6.0203
800	0.373236	0.5599	0.058	0.0579	0.6944	0.5020	6.0226
800.2	0.373365	0.5600	0.058	0.0579	0.6944	0.5022	6.0250
800.4	0.373493	0.5602	0.058	0.0579	0.6944	0.5024	6.0273
800.6	0.373622	0.5604	0.058	0.0579	0.6944	0.5026	6.0296
800.8	0.37375	0.5606	0.058	0.0579	0.6944	0.5028	6.0319
801	0.373879	0.5608	0.058	0.0579	0.6944	0.5029	6.0342
801.2	0.374008	0.5610	0.058	0.0579	0.6944	0.5031	6.0365
801.4	0.374136	0.5612	0.058	0.0579	0.6944	0.5033	6.0389
801.6	0.374265	0.5614	0.058	0.0579	0.6944	0.5035	6.0412
801.8	0.374394	0.5616	0.058	0.0579	0.6944	0.5037	6.0435
802	0.374523	0.5618	0.058	0.0579	0.6944	0.5039	6.0458
802.2	0.374652	0.5620	0.058	0.0579	0.6944	0.5041	6.0481
802.4	0.374781	0.5622	0.058	0.0579	0.6944	0.5043	6.0504
802.6	0.37491	0.5624	0.058	0.0579	0.6944	0.5045	6.0528
802.8	0.375039	0.5626	0.058	0.0579	0.6944	0.5047	6.0551
803	0.375168	0.5628	0.058	0.0579	0.6944	0.5049	6.0574
803.2	0.375297	0.5629	0.058	0.0579	0.6944	0.5051	6.0597
803.4	0.375426	0.5631	0.058	0.0579	0.6944	0.5053	6.0621
803.6	0.375555	0.5633	0.058	0.0579	0.6944	0.5055	6.0644
803.8	0.375684	0.5635	0.058	0.0579	0.6944	0.5057	6.0667
804	0.375813	0.5637	0.058	0.0579	0.6944	0.5058	6.0690
804.2	0.375942	0.5639	0.058	0.0579	0.6944	0.5060	6.0714
804.4	0.376072	0.5641	0.058	0.0579	0.6944	0.5062	6.0737
804.6	0.376201	0.5643	0.058	0.0579	0.6944	0.5064	6.0760
804.8	0.37633	0.5645	0.058	0.0579	0.6944	0.5066	6.0783
805	0.37646	0.5647	0.058	0.0579	0.6944	0.5068	6.0807
805.2	0.376589	0.5649	0.058	0.0579	0.6944	0.5070	6.0830
805.4	0.376718	0.5651	0.058	0.0579	0.6944	0.5072	6.0853
805.6	0.376848	0.5653	0.058	0.0579	0.6944	0.5074	6.0877
805.8	0.376977	0.5655	0.058	0.0579	0.6944	0.5076	6.0900
806	0.377107	0.5657	0.058	0.0579	0.6944	0.5078	6.0923
806.2	0.377237	0.5659	0.058	0.0579	0.6944	0.5080	6.0946
806.4	0.377366	0.5660	0.058	0.0579	0.6944	0.5082	6.0970
806.6	0.377496	0.5662	0.058	0.0579	0.6944	0.5084	6.0993
806.8	0.377626	0.5664	0.058	0.0579	0.6944	0.5086	6.1016

807	0.377755	0.5666	0.058	0.0579	0.6944	0.5088	6.1040
807.2	0.377885	0.5668	0.058	0.0579	0.6944	0.5090	6.1063
807.4	0.378015	0.5670	0.058	0.0579	0.6944	0.5092	6.1087
807.6	0.378145	0.5672	0.058	0.0579	0.6944	0.5093	6.1110
807.8	0.378274	0.5674	0.058	0.0579	0.6944	0.5095	6.1133
808	0.378404	0.5676	0.058	0.0579	0.6944	0.5097	6.1157
808.2	0.378534	0.5678	0.058	0.0579	0.6944	0.5099	6.1180
808.4	0.378664	0.5680	0.058	0.0579	0.6944	0.5101	6.1203
808.6	0.378794	0.5682	0.058	0.0579	0.6944	0.5103	6.1227
808.8	0.378924	0.5684	0.058	0.0579	0.6944	0.5105	6.1250
809	0.379054	0.5686	0.058	0.0579	0.6944	0.5107	6.1274
809.2	0.379184	0.5688	0.058	0.0579	0.6944	0.5109	6.1297
809.4	0.379315	0.5690	0.058	0.0579	0.6944	0.5111	6.1320
809.6	0.379445	0.5692	0.058	0.0579	0.6944	0.5113	6.1344
809.8	0.379575	0.5694	0.058	0.0579	0.6944	0.5115	6.1367
810	0.379705	0.5696	0.058	0.0579	0.6944	0.5117	6.1391
810.2	0.379835	0.5698	0.058	0.0579	0.6944	0.5119	6.1414
810.4	0.379966	0.5699	0.058	0.0579	0.6944	0.5121	6.1438
810.6	0.380096	0.5701	0.058	0.0579	0.6944	0.5123	6.1461
810.8	0.380227	0.5703	0.058	0.0579	0.6944	0.5125	6.1485
811	0.380357	0.5705	0.058	0.0579	0.6944	0.5127	6.1508
811.2	0.380487	0.5707	0.058	0.0579	0.6944	0.5129	6.1532
811.4	0.380618	0.5709	0.058	0.0579	0.6944	0.5131	6.1555
811.6	0.380748	0.5711	0.058	0.0579	0.6944	0.5133	6.1579
811.8	0.380879	0.5713	0.058	0.0579	0.6944	0.5134	6.1602
812	0.38101	0.5715	0.058	0.0579	0.6944	0.5136	6.1626
812.2	0.38114	0.5717	0.058	0.0579	0.6944	0.5138	6.1649
812.4	0.381271	0.5719	0.058	0.0579	0.6944	0.5140	6.1673
812.6	0.381402	0.5721	0.058	0.0579	0.6944	0.5142	6.1696
812.8	0.381532	0.5723	0.058	0.0579	0.6944	0.5144	6.1720
813	0.381663	0.5725	0.058	0.0579	0.6944	0.5146	6.1743
813.2	0.381794	0.5727	0.058	0.0579	0.6944	0.5148	6.1767
813.4	0.381925	0.5729	0.058	0.0579	0.6944	0.5150	6.1790
813.6	0.382056	0.5731	0.058	0.0579	0.6944	0.5152	6.1814
813.8	0.382187	0.5733	0.058	0.0579	0.6944	0.5154	6.1837
814	0.382318	0.5735	0.058	0.0579	0.6944	0.5156	6.1861
814.2	0.382449	0.5737	0.058	0.0579	0.6944	0.5158	6.1885
814.4	0.38258	0.5739	0.058	0.0579	0.6944	0.5160	6.1908
814.6	0.382711	0.5741	0.058	0.0579	0.6944	0.5162	6.1932
814.8	0.382842	0.5743	0.058	0.0579	0.6944	0.5164	6.1955
815	0.382973	0.5745	0.058	0.0579	0.6944	0.5166	6.1979
815.2	0.383104	0.5747	0.058	0.0579	0.6944	0.5168	6.2003
815.4	0.383236	0.5749	0.058	0.0579	0.6944	0.5170	6.2026
815.6	0.383367	0.5751	0.058	0.0579	0.6944	0.5172	6.2050
815.8	0.383498	0.5752	0.058	0.0579	0.6944	0.5174	6.2073
816	0.383629	0.5754	0.058	0.0579	0.6944	0.5176	6.2097
816.2	0.383761	0.5756	0.058	0.0579	0.6944	0.5178	6.2121

816.4	0.383892	0.5758	0.058	0.0579	0.6944	0.5180	6.2144
816.6	0.384024	0.5760	0.058	0.0579	0.6944	0.5182	6.2168
816.8	0.384155	0.5762	0.058	0.0579	0.6944	0.5184	6.2192
817	0.384287	0.5764	0.058	0.0579	0.6944	0.5186	6.2215
817.2	0.384418	0.5766	0.058	0.0579	0.6944	0.5188	6.2239
817.4	0.38455	0.5768	0.058	0.0579	0.6944	0.5190	6.2263
817.6	0.384681	0.5770	0.058	0.0579	0.6944	0.5192	6.2286
817.8	0.384813	0.5772	0.058	0.0579	0.6944	0.5193	6.2310
818	0.384945	0.5774	0.058	0.0579	0.6944	0.5195	6.2334
818.2	0.385077	0.5776	0.058	0.0579	0.6944	0.5197	6.2357
818.4	0.385208	0.5778	0.058	0.0579	0.6944	0.5199	6.2381
818.6	0.38534	0.5780	0.058	0.0579	0.6944	0.5201	6.2405
818.8	0.385472	0.5782	0.058	0.0579	0.6944	0.5203	6.2429
819	0.385604	0.5784	0.058	0.0579	0.6944	0.5205	6.2452
819.2	0.385736	0.5786	0.058	0.0579	0.6944	0.5207	6.2476
819.4	0.385868	0.5788	0.058	0.0579	0.6944	0.5209	6.2500
819.6	0.386	0.5790	0.058	0.0579	0.6944	0.5211	6.2524
819.8	0.386132	0.5792	0.058	0.0579	0.6944	0.5213	6.2547
820	0.386264	0.5794	0.058	0.0579	0.6944	0.5215	6.2571
820.2	0.386396	0.5796	0.058	0.0579	0.6944	0.5217	6.2595
820.4	0.386528	0.5798	0.058	0.0579	0.6944	0.5219	6.2619
820.6	0.38666	0.5800	0.058	0.0579	0.6944	0.5221	6.2643
820.8	0.386793	0.5802	0.058	0.0579	0.6944	0.5223	6.2666
821	0.386925	0.5804	0.058	0.0579	0.6944	0.5225	6.2690
821.2	0.387057	0.5806	0.058	0.0579	0.6944	0.5227	6.2714
821.4	0.38719	0.5808	0.058	0.0579	0.6944	0.5229	6.2738
821.6	0.387322	0.5810	0.058	0.0579	0.6944	0.5231	6.2762
821.8	0.387454	0.5812	0.058	0.0579	0.6944	0.5233	6.2785
822	0.387587	0.5814	0.058	0.0579	0.6944	0.5235	6.2809
822.2	0.387719	0.5816	0.058	0.0579	0.6944	0.5237	6.2833
822.4	0.387852	0.5818	0.058	0.0579	0.6944	0.5239	6.2857
822.6	0.387984	0.5820	0.058	0.0579	0.6944	0.5241	6.2881
822.8	0.388117	0.5822	0.058	0.0579	0.6944	0.5243	6.2905
823	0.38825	0.5824	0.058	0.0579	0.6944	0.5245	6.2929
823.2	0.388382	0.5826	0.058	0.0579	0.6944	0.5247	6.2952
823.4	0.388515	0.5828	0.058	0.0579	0.6944	0.5249	6.2976
823.6	0.388648	0.5830	0.058	0.0579	0.6944	0.5251	6.3000
823.8	0.388781	0.5832	0.058	0.0579	0.6944	0.5253	6.3024
824	0.388913	0.5834	0.058	0.0579	0.6944	0.5255	6.3048
824.2	0.389046	0.5836	0.058	0.0579	0.6944	0.5257	6.3072
824.4	0.389179	0.5838	0.058	0.0579	0.6944	0.5259	6.3096
824.6	0.389312	0.5840	0.058	0.0579	0.6944	0.5261	6.3120
824.8	0.389445	0.5842	0.058	0.0579	0.6944	0.5263	6.3144
825	0.389578	0.5844	0.058	0.0579	0.6944	0.5265	6.3168
825.2	0.389711	0.5846	0.058	0.0579	0.6944	0.5267	6.3192
825.4	0.389844	0.5848	0.058	0.0579	0.6944	0.5269	6.3216
825.6	0.389977	0.5850	0.058	0.0579	0.6944	0.5271	6.3240

825.8	0.390111	0.5852	0.058	0.0579	0.6944	0.5273	6.3263
826	0.390244	0.5854	0.058	0.0579	0.6944	0.5275	6.3287
826.2	0.390377	0.5856	0.058	0.0579	0.6944	0.5277	6.3311
826.4	0.39051	0.5858	0.058	0.0579	0.6944	0.5279	6.3335
826.6	0.390644	0.5860	0.058	0.0579	0.6944	0.5281	6.3359
826.8	0.390777	0.5862	0.058	0.0579	0.6944	0.5283	6.3383
827	0.39091	0.5864	0.058	0.0579	0.6944	0.5285	6.3407
827.2	0.391044	0.5866	0.058	0.0579	0.6944	0.5287	6.3431
827.4	0.391177	0.5868	0.058	0.0579	0.6944	0.5289	6.3455
827.6	0.391311	0.5870	0.058	0.0579	0.6944	0.5291	6.3480
827.8	0.391444	0.5872	0.058	0.0579	0.6944	0.5293	6.3504
828	0.391578	0.5874	0.058	0.0579	0.6944	0.5295	6.3528
828.2	0.391712	0.5876	0.058	0.0579	0.6944	0.5297	6.3552
828.4	0.391845	0.5878	0.058	0.0579	0.6944	0.5299	6.3576
828.6	0.391979	0.5880	0.058	0.0579	0.6944	0.5301	6.3600
828.8	0.392113	0.5882	0.058	0.0579	0.6944	0.5303	6.3624
829	0.392247	0.5884	0.058	0.0579	0.6944	0.5305	6.3648
829.2	0.392381	0.5886	0.058	0.0579	0.6944	0.5307	6.3672
829.4	0.392514	0.5888	0.058	0.0579	0.6944	0.5309	6.3696
829.6	0.392648	0.5890	0.058	0.0579	0.6944	0.5311	6.3720
829.8	0.392782	0.5892	0.058	0.0579	0.6944	0.5313	6.3744
830	0.392916	0.5894	0.058	0.0579	0.6944	0.5315	6.3768
830.2	0.39305	0.5896	0.058	0.0579	0.6944	0.5317	6.3793
830.4	0.393184	0.5898	0.058	0.0579	0.6944	0.5319	6.3817
830.6	0.393318	0.5900	0.058	0.0579	0.6944	0.5321	6.3841
830.8	0.393453	0.5902	0.058	0.0579	0.6944	0.5323	6.3865
831	0.393587	0.5904	0.058	0.0579	0.6944	0.5325	6.3889
831.2	0.393721	0.5906	0.058	0.0579	0.6944	0.5327	6.3913
831.4	0.393855	0.5908	0.058	0.0579	0.6944	0.5329	6.3937
831.6	0.39399	0.5910	0.058	0.0579	0.6944	0.5331	6.3962
831.8	0.394124	0.5912	0.058	0.0579	0.6944	0.5333	6.3986
832	0.394258	0.5914	0.058	0.0579	0.6944	0.5335	6.4010
832.2	0.394393	0.5916	0.058	0.0579	0.6944	0.5337	6.4034
832.4	0.394527	0.5918	0.058	0.0579	0.6944	0.5339	6.4058
832.6	0.394662	0.5920	0.058	0.0579	0.6944	0.5341	6.4083
832.8	0.394796	0.5922	0.058	0.0579	0.6944	0.5343	6.4107
833	0.394931	0.5924	0.058	0.0579	0.6944	0.5345	6.4131
833.2	0.395065	0.5926	0.058	0.0579	0.6944	0.5347	6.4155
833.4	0.3952	0.5928	0.058	0.0579	0.6944	0.5349	6.4179
833.6	0.395335	0.5930	0.058	0.0579	0.6944	0.5351	6.4204
833.8	0.39547	0.5932	0.058	0.0579	0.6944	0.5353	6.4228
834	0.395604	0.5934	0.058	0.0579	0.6944	0.5355	6.4252
834.2	0.395739	0.5936	0.058	0.0579	0.6944	0.5357	6.4276
834.4	0.395874	0.5938	0.058	0.0579	0.6944	0.5359	6.4301
834.6	0.396009	0.5940	0.058	0.0579	0.6944	0.5361	6.4325
834.8	0.396144	0.5942	0.058	0.0579	0.6944	0.5363	6.4349
835	0.396279	0.5944	0.058	0.0579	0.6944	0.5365	6.4374

835.2	0.396414	0.5946	0.058	0.0579	0.6944	0.5368	6.4398
835.4	0.396549	0.5948	0.058	0.0579	0.6944	0.5370	6.4422
835.6	0.396684	0.5950	0.058	0.0579	0.6944	0.5372	6.4447
835.8	0.396819	0.5952	0.058	0.0579	0.6944	0.5374	6.4471
836	0.396954	0.5954	0.058	0.0579	0.6944	0.5376	6.4495
836.2	0.397089	0.5956	0.058	0.0579	0.6944	0.5378	6.4519
836.4	0.397225	0.5958	0.058	0.0579	0.6944	0.5380	6.4544
836.6	0.39736	0.5960	0.058	0.0579	0.6944	0.5382	6.4568
836.8	0.397495	0.5962	0.058	0.0579	0.6944	0.5384	6.4593
837	0.397631	0.5964	0.058	0.0579	0.6944	0.5386	6.4617
837.2	0.397766	0.5966	0.058	0.0579	0.6944	0.5388	6.4641
837.4	0.397902	0.5969	0.058	0.0579	0.6944	0.5390	6.4666
837.6	0.398037	0.5971	0.058	0.0579	0.6944	0.5392	6.4690
837.8	0.398173	0.5973	0.058	0.0579	0.6944	0.5394	6.4714
838	0.398308	0.5975	0.058	0.0579	0.6944	0.5396	6.4739
838.2	0.398444	0.5977	0.058	0.0579	0.6944	0.5398	6.4763
838.4	0.39858	0.5979	0.058	0.0579	0.6944	0.5400	6.4788
838.6	0.398715	0.5981	0.058	0.0579	0.6944	0.5402	6.4812
838.8	0.398851	0.5983	0.058	0.0579	0.6944	0.5404	6.4837
839	0.398987	0.5985	0.058	0.0579	0.6944	0.5406	6.4861
839.2	0.399123	0.5987	0.058	0.0579	0.6944	0.5408	6.4885
839.4	0.399258	0.5989	0.058	0.0579	0.6944	0.5410	6.4910
839.6	0.399394	0.5991	0.058	0.0579	0.6944	0.5412	6.4934
839.8	0.39953	0.5993	0.058	0.0579	0.6944	0.5414	6.4959
840	0.399666	0.5995	0.058	0.0579	0.6944	0.5416	6.4983
840.2	0.399802	0.5997	0.058	0.0579	0.6944	0.5418	6.5008
840.4	0.399938	0.5999	0.058	0.0579	0.6944	0.5420	6.5032
840.6	0.400075	0.6001	0.058	0.0579	0.6944	0.5422	6.5057
840.8	0.400211	0.6003	0.058	0.0579	0.6944	0.5424	6.5081
841	0.400347	0.6005	0.058	0.0579	0.6944	0.5426	6.5106
841.2	0.400483	0.6007	0.058	0.0579	0.6944	0.5429	6.5130
841.4	0.400619	0.6009	0.058	0.0579	0.6944	0.5431	6.5155
841.6	0.400756	0.6011	0.058	0.0579	0.6944	0.5433	6.5179
841.8	0.400892	0.6013	0.058	0.0579	0.6944	0.5435	6.5204
842	0.401029	0.6015	0.058	0.0579	0.6944	0.5437	6.5228
842.2	0.401165	0.6017	0.058	0.0579	0.6944	0.5439	6.5253
842.4	0.401301	0.6020	0.058	0.0579	0.6944	0.5441	6.5278
842.6	0.401438	0.6022	0.058	0.0579	0.6944	0.5443	6.5302
842.8	0.401575	0.6024	0.058	0.0579	0.6944	0.5445	6.5327
843	0.401711	0.6026	0.058	0.0579	0.6944	0.5447	6.5351
843.2	0.401848	0.6028	0.058	0.0579	0.6944	0.5449	6.5376
843.4	0.401984	0.6030	0.058	0.0579	0.6944	0.5451	6.5400
843.6	0.402121	0.6032	0.058	0.0579	0.6944	0.5453	6.5425
843.8	0.402258	0.6034	0.058	0.0579	0.6944	0.5455	6.5450
844	0.402395	0.6036	0.058	0.0579	0.6944	0.5457	6.5474
844.2	0.402532	0.6038	0.058	0.0579	0.6944	0.5459	6.5499
844.4	0.402669	0.6040	0.058	0.0579	0.6944	0.5461	6.5524

844.6	0.402806	0.6042	0.058	0.0579	0.6944	0.5463	6.5548
844.8	0.402942	0.6044	0.058	0.0579	0.6944	0.5465	6.5573
845	0.40308	0.6046	0.058	0.0579	0.6944	0.5467	6.5598
845.2	0.403217	0.6048	0.058	0.0579	0.6944	0.5470	6.5622
845.4	0.403354	0.6050	0.058	0.0579	0.6944	0.5472	6.5647
845.6	0.403491	0.6052	0.058	0.0579	0.6944	0.5474	6.5672
845.8	0.403628	0.6054	0.058	0.0579	0.6944	0.5476	6.5696
846	0.403765	0.6056	0.058	0.0579	0.6944	0.5478	6.5721
846.2	0.403903	0.6059	0.058	0.0579	0.6944	0.5480	6.5746
846.4	0.40404	0.6061	0.058	0.0579	0.6944	0.5482	6.5770
846.6	0.404177	0.6063	0.058	0.0579	0.6944	0.5484	6.5795
846.8	0.404315	0.6065	0.058	0.0579	0.6944	0.5486	6.5820
847	0.404452	0.6067	0.058	0.0579	0.6944	0.5488	6.5845
847.2	0.40459	0.6069	0.058	0.0579	0.6944	0.5490	6.5869
847.4	0.404727	0.6071	0.058	0.0579	0.6944	0.5492	6.5894
847.6	0.404865	0.6073	0.058	0.0579	0.6944	0.5494	6.5919
847.8	0.405002	0.6075	0.058	0.0579	0.6944	0.5496	6.5944
848	0.40514	0.6077	0.058	0.0579	0.6944	0.5498	6.5968
848.2	0.405278	0.6079	0.058	0.0579	0.6944	0.5500	6.5993
848.4	0.405415	0.6081	0.058	0.0579	0.6944	0.5503	6.6018
848.6	0.405553	0.6083	0.058	0.0579	0.6944	0.5505	6.6043
848.8	0.405691	0.6085	0.058	0.0579	0.6944	0.5507	6.6068
849	0.405829	0.6087	0.058	0.0579	0.6944	0.5509	6.6092
849.2	0.405967	0.6090	0.058	0.0579	0.6944	0.5511	6.6117
849.4	0.406105	0.6092	0.058	0.0579	0.6944	0.5513	6.6142
849.6	0.406243	0.6094	0.058	0.0579	0.6944	0.5515	6.6167
849.8	0.406381	0.6096	0.058	0.0579	0.6944	0.5517	6.6192
850	0.406519	0.6098	0.058	0.0579	0.6944	0.5519	6.6217
850.2	0.406657	0.6100	0.058	0.0579	0.6944	0.5521	6.6241
850.4	0.406795	0.6102	0.058	0.0579	0.6944	0.5523	6.6266
850.6	0.406933	0.6104	0.058	0.0579	0.6944	0.5525	6.6291
850.8	0.407072	0.6106	0.058	0.0579	0.6944	0.5527	6.6316
851	0.40721	0.6108	0.058	0.0579	0.6944	0.5529	6.6341
851.2	0.407348	0.6110	0.058	0.0579	0.6944	0.5532	6.6366
851.4	0.407487	0.6112	0.058	0.0579	0.6944	0.5534	6.6391
851.6	0.407625	0.6114	0.058	0.0579	0.6944	0.5536	6.6416
851.8	0.407764	0.6116	0.058	0.0579	0.6944	0.5538	6.6441
852	0.407902	0.6119	0.058	0.0579	0.6944	0.5540	6.6465
852.2	0.408041	0.6121	0.058	0.0579	0.6944	0.5542	6.6490
852.4	0.408179	0.6123	0.058	0.0579	0.6944	0.5544	6.6515
852.6	0.408318	0.6125	0.058	0.0579	0.6944	0.5546	6.6540
852.8	0.408457	0.6127	0.058	0.0579	0.6944	0.5548	6.6565
853	0.408595	0.6129	0.058	0.0579	0.6944	0.5550	6.6590
853.2	0.408734	0.6131	0.058	0.0579	0.6944	0.5552	6.6615
853.4	0.408873	0.6133	0.058	0.0579	0.6944	0.5554	6.6640
853.6	0.409012	0.6135	0.058	0.0579	0.6944	0.5556	6.6665
853.8	0.409151	0.6137	0.058	0.0579	0.6944	0.5559	6.6690

854	0.40929	0.6139	0.058	0.0579	0.6944	0.5561	6.6715
854.2	0.409429	0.6141	0.058	0.0579	0.6944	0.5563	6.6740
854.4	0.409568	0.6144	0.058	0.0579	0.6944	0.5565	6.6765
854.6	0.409707	0.6146	0.058	0.0579	0.6944	0.5567	6.6790
854.8	0.409846	0.6148	0.058	0.0579	0.6944	0.5569	6.6815
855	0.409985	0.6150	0.058	0.0579	0.6944	0.5571	6.6840
855.2	0.410124	0.6152	0.058	0.0579	0.6944	0.5573	6.6865
855.4	0.410264	0.6154	0.058	0.0579	0.6944	0.5575	6.6890
855.6	0.410403	0.6156	0.058	0.0579	0.6944	0.5577	6.6916
855.8	0.410542	0.6158	0.058	0.0579	0.6944	0.5579	6.6941
856	0.410682	0.6160	0.058	0.0579	0.6944	0.5582	6.6966
856.2	0.410821	0.6162	0.058	0.0579	0.6944	0.5584	6.6991
856.4	0.410961	0.6164	0.058	0.0579	0.6944	0.5586	6.7016
856.6	0.4111	0.6167	0.058	0.0579	0.6944	0.5588	6.7041
856.8	0.41124	0.6169	0.058	0.0579	0.6944	0.5590	6.7066
857	0.411379	0.6171	0.058	0.0579	0.6944	0.5592	6.7091
857.2	0.411519	0.6173	0.058	0.0579	0.6944	0.5594	6.7116
857.4	0.411659	0.6175	0.058	0.0579	0.6944	0.5596	6.7142
857.6	0.411798	0.6177	0.058	0.0579	0.6944	0.5598	6.7167
857.8	0.411938	0.6179	0.058	0.0579	0.6944	0.5600	6.7192
858	0.412078	0.6181	0.058	0.0579	0.6944	0.5602	6.7217
858.2	0.412218	0.6183	0.058	0.0579	0.6944	0.5605	6.7242
858.4	0.412358	0.6185	0.058	0.0579	0.6944	0.5607	6.7267
858.6	0.412498	0.6187	0.058	0.0579	0.6944	0.5609	6.7293
858.8	0.412638	0.6190	0.058	0.0579	0.6944	0.5611	6.7318
859	0.412778	0.6192	0.058	0.0579	0.6944	0.5613	6.7343
859.2	0.412918	0.6194	0.058	0.0579	0.6944	0.5615	6.7368
859.4	0.413058	0.6196	0.058	0.0579	0.6944	0.5617	6.7393
859.6	0.413198	0.6198	0.058	0.0579	0.6944	0.5619	6.7419
859.8	0.413339	0.6200	0.058	0.0579	0.6944	0.5621	6.7444
860	0.413479	0.6202	0.058	0.0579	0.6944	0.5623	6.7469
860.2	0.413619	0.6204	0.058	0.0579	0.6944	0.5626	6.7494
860.4	0.41376	0.6206	0.058	0.0579	0.6944	0.5628	6.7520
860.6	0.4139	0.6209	0.058	0.0579	0.6944	0.5630	6.7545
860.8	0.414041	0.6211	0.058	0.0579	0.6944	0.5632	6.7570
861	0.414181	0.6213	0.058	0.0579	0.6944	0.5634	6.7596
861.2	0.414322	0.6215	0.058	0.0579	0.6944	0.5636	6.7621
861.4	0.414462	0.6217	0.058	0.0579	0.6944	0.5638	6.7646
861.6	0.414603	0.6219	0.058	0.0579	0.6944	0.5640	6.7671
861.8	0.414744	0.6221	0.058	0.0579	0.6944	0.5642	6.7697
862	0.414884	0.6223	0.058	0.0579	0.6944	0.5645	6.7722
862.2	0.415025	0.6225	0.058	0.0579	0.6944	0.5647	6.7747
862.4	0.415166	0.6227	0.058	0.0579	0.6944	0.5649	6.7773
862.6	0.415307	0.6230	0.058	0.0579	0.6944	0.5651	6.7798
862.8	0.415448	0.6232	0.058	0.0579	0.6944	0.5653	6.7823
863	0.415589	0.6234	0.058	0.0579	0.6944	0.5655	6.7849
863.2	0.41573	0.6236	0.058	0.0579	0.6944	0.5657	6.7874

863.4	0.415871	0.6238	0.058	0.0579	0.6944	0.5659	6.7900
863.6	0.416012	0.6240	0.058	0.0579	0.6944	0.5661	6.7925
863.8	0.416153	0.6242	0.058	0.0579	0.6944	0.5664	6.7950
864	0.416294	0.6244	0.058	0.0579	0.6944	0.5666	6.7976
864.2	0.416436	0.6247	0.058	0.0579	0.6944	0.5668	6.8001
864.4	0.416577	0.6249	0.058	0.0579	0.6944	0.5670	6.8027
864.6	0.416718	0.6251	0.058	0.0579	0.6944	0.5672	6.8052
864.8	0.41686	0.6253	0.058	0.0579	0.6944	0.5674	6.8078
865	0.417001	0.6255	0.058	0.0579	0.6944	0.5676	6.8103
865.2	0.417143	0.6257	0.058	0.0579	0.6944	0.5678	6.8128
865.4	0.417284	0.6259	0.058	0.0579	0.6944	0.5681	6.8154
865.6	0.417426	0.6261	0.058	0.0579	0.6944	0.5683	6.8179
865.8	0.417567	0.6264	0.058	0.0579	0.6944	0.5685	6.8205
866	0.417709	0.6266	0.058	0.0579	0.6944	0.5687	6.8230
866.2	0.417851	0.6268	0.058	0.0579	0.6944	0.5689	6.8256
866.4	0.417992	0.6270	0.058	0.0579	0.6944	0.5691	6.8281
866.6	0.418134	0.6272	0.058	0.0579	0.6944	0.5693	6.8307
866.8	0.418276	0.6274	0.058	0.0579	0.6944	0.5695	6.8332
867	0.418418	0.6276	0.058	0.0579	0.6944	0.5698	6.8358
867.2	0.41856	0.6278	0.058	0.0579	0.6944	0.5700	6.8384
867.4	0.418702	0.6281	0.058	0.0579	0.6944	0.5702	6.8409
867.6	0.418844	0.6283	0.058	0.0579	0.6944	0.5704	6.8435
867.8	0.418986	0.6285	0.058	0.0579	0.6944	0.5706	6.8460
868	0.419128	0.6287	0.058	0.0579	0.6944	0.5708	6.8486
868.2	0.41927	0.6289	0.058	0.0579	0.6944	0.5710	6.8511
868.4	0.419413	0.6291	0.058	0.0579	0.6944	0.5712	6.8537
868.6	0.419555	0.6293	0.058	0.0579	0.6944	0.5715	6.8563
868.8	0.419697	0.6295	0.058	0.0579	0.6944	0.5717	6.8588
869	0.41984	0.6298	0.058	0.0579	0.6944	0.5719	6.8614
869.2	0.419982	0.6300	0.058	0.0579	0.6944	0.5721	6.8639
869.4	0.420124	0.6302	0.058	0.0579	0.6944	0.5723	6.8665
869.6	0.420267	0.6304	0.058	0.0579	0.6944	0.5725	6.8691
869.8	0.420409	0.6306	0.058	0.0579	0.6944	0.5727	6.8716
870	0.420552	0.6308	0.058	0.0579	0.6944	0.5730	6.8742
870.2	0.420695	0.6310	0.058	0.0579	0.6944	0.5732	6.8768
870.4	0.420837	0.6313	0.058	0.0579	0.6944	0.5734	6.8793
870.6	0.42098	0.6315	0.058	0.0579	0.6944	0.5736	6.8819
870.8	0.421123	0.6317	0.058	0.0579	0.6944	0.5738	6.8845
871	0.421266	0.6319	0.058	0.0579	0.6944	0.5740	6.8871
871.2	0.421409	0.6321	0.058	0.0579	0.6944	0.5742	6.8896
871.4	0.421552	0.6323	0.058	0.0579	0.6944	0.5745	6.8922
871.6	0.421695	0.6325	0.058	0.0579	0.6944	0.5747	6.8948
871.8	0.421838	0.6328	0.058	0.0579	0.6944	0.5749	6.8973
872	0.421981	0.6330	0.058	0.0579	0.6944	0.5751	6.8999
872.2	0.422124	0.6332	0.058	0.0579	0.6944	0.5753	6.9025
872.4	0.422267	0.6334	0.058	0.0579	0.6944	0.5755	6.9051
872.6	0.42241	0.6336	0.058	0.0579	0.6944	0.5757	6.9077

872.8	0.422554	0.6338	0.058	0.0579	0.6944	0.5760	6.9102
873	0.422697	0.6340	0.058	0.0579	0.6944	0.5762	6.9128
873.2	0.42284	0.6343	0.058	0.0579	0.6944	0.5764	6.9154
873.4	0.422984	0.6345	0.058	0.0579	0.6944	0.5766	6.9180
873.6	0.423127	0.6347	0.058	0.0579	0.6944	0.5768	6.9206
873.8	0.423271	0.6349	0.058	0.0579	0.6944	0.5770	6.9231
874	0.423414	0.6351	0.058	0.0579	0.6944	0.5773	6.9257
874.2	0.423558	0.6353	0.058	0.0579	0.6944	0.5775	6.9283
874.4	0.423701	0.6356	0.058	0.0579	0.6944	0.5777	6.9309
874.6	0.423845	0.6358	0.058	0.0579	0.6944	0.5779	6.9335
874.8	0.423989	0.6360	0.058	0.0579	0.6944	0.5781	6.9361
875	0.424133	0.6362	0.058	0.0579	0.6944	0.5783	6.9387
875.2	0.424277	0.6364	0.058	0.0579	0.6944	0.5785	6.9412
875.4	0.424421	0.6366	0.058	0.0579	0.6944	0.5788	6.9438
875.6	0.424565	0.6368	0.058	0.0579	0.6944	0.5790	6.9464
875.8	0.424709	0.6371	0.058	0.0579	0.6944	0.5792	6.9490
876	0.424853	0.6373	0.058	0.0579	0.6944	0.5794	6.9516
876.2	0.424997	0.6375	0.058	0.0579	0.6944	0.5796	6.9542
876.4	0.425141	0.6377	0.058	0.0579	0.6944	0.5798	6.9568
876.6	0.425285	0.6379	0.058	0.0579	0.6944	0.5801	6.9594
876.8	0.425429	0.6381	0.058	0.0579	0.6944	0.5803	6.9620
877	0.425574	0.6384	0.058	0.0579	0.6944	0.5805	6.9646
877.2	0.425718	0.6386	0.058	0.0579	0.6944	0.5807	6.9672
877.4	0.425862	0.6388	0.058	0.0579	0.6944	0.5809	6.9698
877.6	0.426007	0.6390	0.058	0.0579	0.6944	0.5811	6.9724
877.8	0.426151	0.6392	0.058	0.0579	0.6944	0.5814	6.9750
878	0.426296	0.6394	0.058	0.0579	0.6944	0.5816	6.9776
878.2	0.42644	0.6397	0.058	0.0579	0.6944	0.5818	6.9802
878.4	0.426585	0.6399	0.058	0.0579	0.6944	0.5820	6.9828
878.6	0.42673	0.6401	0.058	0.0579	0.6944	0.5822	6.9854
878.8	0.426874	0.6403	0.058	0.0579	0.6944	0.5824	6.9880
879	0.427019	0.6405	0.058	0.0579	0.6944	0.5827	6.9906
879.2	0.427164	0.6407	0.058	0.0579	0.6944	0.5829	6.9932
879.4	0.427309	0.6410	0.058	0.0579	0.6944	0.5831	6.9958
879.6	0.427454	0.6412	0.058	0.0579	0.6944	0.5833	6.9984
879.8	0.427599	0.6414	0.058	0.0579	0.6944	0.5835	7.0010
880	0.427744	0.6416	0.058	0.0579	0.6944	0.5837	7.0036
880.2	0.427889	0.6418	0.058	0.0579	0.6944	0.5840	7.0063
880.4	0.428034	0.6421	0.058	0.0579	0.6944	0.5842	7.0089
880.6	0.428179	0.6423	0.058	0.0579	0.6944	0.5844	7.0115
880.8	0.428325	0.6425	0.058	0.0579	0.6944	0.5846	7.0141
881	0.42847	0.6427	0.058	0.0579	0.6944	0.5848	7.0167
881.2	0.428615	0.6429	0.058	0.0579	0.6944	0.5851	7.0193
881.4	0.428761	0.6431	0.058	0.0579	0.6944	0.5853	7.0219
881.6	0.428906	0.6434	0.058	0.0579	0.6944	0.5855	7.0246
881.8	0.429052	0.6436	0.058	0.0579	0.6944	0.5857	7.0272
882	0.429197	0.6438	0.058	0.0579	0.6944	0.5859	7.0298

882.2	0.429343	0.6440	0.058	0.0579	0.6944	0.5861	7.0324
882.4	0.429488	0.6442	0.058	0.0579	0.6944	0.5864	7.0350
882.6	0.429634	0.6445	0.058	0.0579	0.6944	0.5866	7.0377
882.8	0.42978	0.6447	0.058	0.0579	0.6944	0.5868	7.0403
883	0.429926	0.6449	0.058	0.0579	0.6944	0.5870	7.0429
883.2	0.430072	0.6451	0.058	0.0579	0.6944	0.5872	7.0455
883.4	0.430217	0.6453	0.058	0.0579	0.6944	0.5875	7.0482
883.6	0.430363	0.6455	0.058	0.0579	0.6944	0.5877	7.0508
883.8	0.430509	0.6458	0.058	0.0579	0.6944	0.5879	7.0534
884	0.430656	0.6460	0.058	0.0579	0.6944	0.5881	7.0560
884.2	0.430802	0.6462	0.058	0.0579	0.6944	0.5883	7.0587
884.4	0.430948	0.6464	0.058	0.0579	0.6944	0.5886	7.0613
884.6	0.431094	0.6466	0.058	0.0579	0.6944	0.5888	7.0639
884.8	0.43124	0.6469	0.058	0.0579	0.6944	0.5890	7.0666
885	0.431387	0.6471	0.058	0.0579	0.6944	0.5892	7.0692
885.2	0.431533	0.6473	0.058	0.0579	0.6944	0.5894	7.0718
885.4	0.431679	0.6475	0.058	0.0579	0.6944	0.5896	7.0745
885.6	0.431826	0.6477	0.058	0.0579	0.6944	0.5899	7.0771
885.8	0.431972	0.6480	0.058	0.0579	0.6944	0.5901	7.0797
886	0.432119	0.6482	0.058	0.0579	0.6944	0.5903	7.0824
886.2	0.432266	0.6484	0.058	0.0579	0.6944	0.5905	7.0850
886.4	0.432412	0.6486	0.058	0.0579	0.6944	0.5907	7.0877
886.6	0.432559	0.6488	0.058	0.0579	0.6944	0.5910	7.0903
886.8	0.432706	0.6491	0.058	0.0579	0.6944	0.5912	7.0929
887	0.432853	0.6493	0.058	0.0579	0.6944	0.5914	7.0956
887.2	0.432999	0.6495	0.058	0.0579	0.6944	0.5916	7.0982
887.4	0.433146	0.6497	0.058	0.0579	0.6944	0.5918	7.1009
887.6	0.433293	0.6499	0.058	0.0579	0.6944	0.5921	7.1035
887.8	0.43344	0.6502	0.058	0.0579	0.6944	0.5923	7.1062
888	0.433588	0.6504	0.058	0.0579	0.6944	0.5925	7.1088
888.2	0.433735	0.6506	0.058	0.0579	0.6944	0.5927	7.1115
888.4	0.433882	0.6508	0.058	0.0579	0.6944	0.5930	7.1141
888.6	0.434029	0.6510	0.058	0.0579	0.6944	0.5932	7.1168
888.8	0.434176	0.6513	0.058	0.0579	0.6944	0.5934	7.1194
889	0.434324	0.6515	0.058	0.0579	0.6944	0.5936	7.1221
889.2	0.434471	0.6517	0.058	0.0579	0.6944	0.5938	7.1247
889.4	0.434619	0.6519	0.058	0.0579	0.6944	0.5941	7.1274
889.6	0.434766	0.6521	0.058	0.0579	0.6944	0.5943	7.1300
889.8	0.434914	0.6524	0.058	0.0579	0.6944	0.5945	7.1327
890	0.435061	0.6526	0.058	0.0579	0.6944	0.5947	7.1353
890.2	0.435209	0.6528	0.058	0.0579	0.6944	0.5949	7.1380
890.4	0.435357	0.6530	0.058	0.0579	0.6944	0.5952	7.1406
890.6	0.435505	0.6533	0.058	0.0579	0.6944	0.5954	7.1433
890.8	0.435652	0.6535	0.058	0.0579	0.6944	0.5956	7.1460
891	0.4358	0.6537	0.058	0.0579	0.6944	0.5958	7.1486
891.2	0.435948	0.6539	0.058	0.0579	0.6944	0.5961	7.1513
891.4	0.436096	0.6541	0.058	0.0579	0.6944	0.5963	7.1540

891.6	0.436244	0.6544	0.058	0.0579	0.6944	0.5965	7.1566
891.8	0.436392	0.6546	0.058	0.0579	0.6944	0.5967	7.1593
892	0.43654	0.6548	0.058	0.0579	0.6944	0.5969	7.1620
892.2	0.436689	0.6550	0.058	0.0579	0.6944	0.5972	7.1646
892.4	0.436837	0.6553	0.058	0.0579	0.6944	0.5974	7.1673
892.6	0.436985	0.6555	0.058	0.0579	0.6944	0.5976	7.1700
892.8	0.437134	0.6557	0.058	0.0579	0.6944	0.5978	7.1726
893	0.437282	0.6559	0.058	0.0579	0.6944	0.5981	7.1753
893.2	0.437431	0.6561	0.058	0.0579	0.6944	0.5983	7.1780
893.4	0.437579	0.6564	0.058	0.0579	0.6944	0.5985	7.1806
893.6	0.437728	0.6566	0.058	0.0579	0.6944	0.5987	7.1833
893.8	0.437876	0.6568	0.058	0.0579	0.6944	0.5989	7.1860
894	0.438025	0.6570	0.058	0.0579	0.6944	0.5992	7.1887
894.2	0.438174	0.6573	0.058	0.0579	0.6944	0.5994	7.1913
894.4	0.438323	0.6575	0.058	0.0579	0.6944	0.5996	7.1940
894.6	0.438471	0.6577	0.058	0.0579	0.6944	0.5998	7.1967
894.8	0.43862	0.6579	0.058	0.0579	0.6944	0.6001	7.1994
895	0.438769	0.6582	0.058	0.0579	0.6944	0.6003	7.2021
895.2	0.438918	0.6584	0.058	0.0579	0.6944	0.6005	7.2047
895.4	0.439067	0.6586	0.058	0.0579	0.6944	0.6007	7.2074
895.6	0.439216	0.6588	0.058	0.0579	0.6944	0.6010	7.2101
895.8	0.439366	0.6590	0.058	0.0579	0.6944	0.6012	7.2128
896	0.439515	0.6593	0.058	0.0579	0.6944	0.6014	7.2155
896.2	0.439664	0.6595	0.058	0.0579	0.6944	0.6016	7.2182
896.4	0.439814	0.6597	0.058	0.0579	0.6944	0.6018	7.2209
896.6	0.439963	0.6599	0.058	0.0579	0.6944	0.6021	7.2235
896.8	0.440112	0.6602	0.058	0.0579	0.6944	0.6023	7.2262
897	0.440262	0.6604	0.058	0.0579	0.6944	0.6025	7.2289
897.2	0.440411	0.6606	0.058	0.0579	0.6944	0.6027	7.2316
897.4	0.440561	0.6608	0.058	0.0579	0.6944	0.6030	7.2343
897.6	0.440711	0.6611	0.058	0.0579	0.6944	0.6032	7.2370
897.8	0.44086	0.6613	0.058	0.0579	0.6944	0.6034	7.2397
898	0.44101	0.6615	0.058	0.0579	0.6944	0.6036	7.2424
898.2	0.44116	0.6617	0.058	0.0579	0.6944	0.6039	7.2451
898.4	0.44131	0.6620	0.058	0.0579	0.6944	0.6041	7.2478
898.6	0.44146	0.6622	0.058	0.0579	0.6944	0.6043	7.2505
898.8	0.44161	0.6624	0.058	0.0579	0.6944	0.6045	7.2532
899	0.44176	0.6626	0.058	0.0579	0.6944	0.6048	7.2559
899.2	0.44191	0.6629	0.058	0.0579	0.6944	0.6050	7.2586
899.4	0.44206	0.6631	0.058	0.0579	0.6944	0.6052	7.2613
899.6	0.442211	0.6633	0.058	0.0579	0.6944	0.6054	7.2640
899.8	0.442361	0.6635	0.058	0.0579	0.6944	0.6057	7.2667
900	0.442511	0.6638	0.058	0.0579	0.6944	0.6059	7.2694
900.2	0.442662	0.6640	0.058	0.0579	0.6944	0.6061	7.2721
900.4	0.442812	0.6642	0.058	0.0579	0.6944	0.6063	7.2748
900.6	0.442963	0.6644	0.058	0.0579	0.6944	0.6066	7.2775
900.8	0.443113	0.6647	0.058	0.0579	0.6944	0.6068	7.2802

901	0.443264	0.6649	0.058	0.0579	0.6944	0.6070	7.2829
901.2	0.443414	0.6651	0.058	0.0579	0.6944	0.6073	7.2857
901.4	0.443565	0.6653	0.058	0.0579	0.6944	0.6075	7.2884
901.6	0.443716	0.6656	0.058	0.0579	0.6944	0.6077	7.2911
901.8	0.443867	0.6658	0.058	0.0579	0.6944	0.6079	7.2938
902	0.444018	0.6660	0.058	0.0579	0.6944	0.6082	7.2965
902.2	0.444169	0.6663	0.058	0.0579	0.6944	0.6084	7.2992
902.4	0.44432	0.6665	0.058	0.0579	0.6944	0.6086	7.3020
902.6	0.444471	0.6667	0.058	0.0579	0.6944	0.6088	7.3047
902.8	0.444622	0.6669	0.058	0.0579	0.6944	0.6091	7.3074
903	0.444773	0.6672	0.058	0.0579	0.6944	0.6093	7.3101
903.2	0.444924	0.6674	0.058	0.0579	0.6944	0.6095	7.3128
903.4	0.445076	0.6676	0.058	0.0579	0.6944	0.6097	7.3156
903.6	0.445227	0.6678	0.058	0.0579	0.6944	0.6100	7.3183
903.8	0.445378	0.6681	0.058	0.0579	0.6944	0.6102	7.3210
904	0.44553	0.6683	0.058	0.0579	0.6944	0.6104	7.3237
904.2	0.445681	0.6685	0.058	0.0579	0.6944	0.6107	7.3265
904.4	0.445833	0.6687	0.058	0.0579	0.6944	0.6109	7.3292
904.6	0.445985	0.6690	0.058	0.0579	0.6944	0.6111	7.3319
904.8	0.446136	0.6692	0.058	0.0579	0.6944	0.6113	7.3346
905	0.446288	0.6694	0.058	0.0579	0.6944	0.6116	7.3374
905.2	0.44644	0.6697	0.058	0.0579	0.6944	0.6118	7.3401
905.4	0.446592	0.6699	0.058	0.0579	0.6944	0.6120	7.3428
905.6	0.446744	0.6701	0.058	0.0579	0.6944	0.6122	7.3456
905.8	0.446896	0.6703	0.058	0.0579	0.6944	0.6125	7.3483
906	0.447048	0.6706	0.058	0.0579	0.6944	0.6127	7.3510
906.2	0.4472	0.6708	0.058	0.0579	0.6944	0.6129	7.3538
906.4	0.447352	0.6710	0.058	0.0579	0.6944	0.6132	7.3565
906.6	0.447504	0.6713	0.058	0.0579	0.6944	0.6134	7.3593
906.8	0.447657	0.6715	0.058	0.0579	0.6944	0.6136	7.3620
907	0.447809	0.6717	0.058	0.0579	0.6944	0.6138	7.3647
907.2	0.447961	0.6719	0.058	0.0579	0.6944	0.6141	7.3675
907.4	0.448114	0.6722	0.058	0.0579	0.6944	0.6143	7.3702
907.6	0.448266	0.6724	0.058	0.0579	0.6944	0.6145	7.3730
907.8	0.448419	0.6726	0.058	0.0579	0.6944	0.6148	7.3757
908	0.448572	0.6729	0.058	0.0579	0.6944	0.6150	7.3785
908.2	0.448724	0.6731	0.058	0.0579	0.6944	0.6152	7.3812
908.4	0.448877	0.6733	0.058	0.0579	0.6944	0.6154	7.3840
908.6	0.44903	0.6735	0.058	0.0579	0.6944	0.6157	7.3867
908.8	0.449183	0.6738	0.058	0.0579	0.6944	0.6159	7.3895
909	0.449336	0.6740	0.058	0.0579	0.6944	0.6161	7.3922
909.2	0.449489	0.6742	0.058	0.0579	0.6944	0.6164	7.3950
909.4	0.449642	0.6745	0.058	0.0579	0.6944	0.6166	7.3977
909.6	0.449795	0.6747	0.058	0.0579	0.6944	0.6168	7.4005
909.8	0.449948	0.6749	0.058	0.0579	0.6944	0.6171	7.4032
910	0.450101	0.6752	0.058	0.0579	0.6944	0.6173	7.4060
910.2	0.450255	0.6754	0.058	0.0579	0.6944	0.6175	7.4088

910.4	0.450408	0.6756	0.058	0.0579	0.6944	0.6177	7.4115
910.6	0.450561	0.6758	0.058	0.0579	0.6944	0.6180	7.4143
910.8	0.450715	0.6761	0.058	0.0579	0.6944	0.6182	7.4170
911	0.450868	0.6763	0.058	0.0579	0.6944	0.6184	7.4198
911.2	0.451022	0.6765	0.058	0.0579	0.6944	0.6187	7.4226
911.4	0.451176	0.6768	0.058	0.0579	0.6944	0.6189	7.4253
911.6	0.451329	0.6770	0.058	0.0579	0.6944	0.6191	7.4281
911.8	0.451483	0.6772	0.058	0.0579	0.6944	0.6194	7.4309
912	0.451637	0.6775	0.058	0.0579	0.6944	0.6196	7.4336
912.2	0.451791	0.6777	0.058	0.0579	0.6944	0.6198	7.4364
912.4	0.451945	0.6779	0.058	0.0579	0.6944	0.6200	7.4392
912.6	0.452099	0.6781	0.058	0.0579	0.6944	0.6203	7.4419
912.8	0.452253	0.6784	0.058	0.0579	0.6944	0.6205	7.4447
913	0.452407	0.6786	0.058	0.0579	0.6944	0.6207	7.4475
913.2	0.452561	0.6788	0.058	0.0579	0.6944	0.6210	7.4503
913.4	0.452715	0.6791	0.058	0.0579	0.6944	0.6212	7.4530
913.6	0.45287	0.6793	0.058	0.0579	0.6944	0.6214	7.4558
913.8	0.453024	0.6795	0.058	0.0579	0.6944	0.6217	7.4586
914	0.453179	0.6798	0.058	0.0579	0.6944	0.6219	7.4614
914.2	0.453333	0.6800	0.058	0.0579	0.6944	0.6221	7.4642
914.4	0.453488	0.6802	0.058	0.0579	0.6944	0.6224	7.4669
914.6	0.453642	0.6805	0.058	0.0579	0.6944	0.6226	7.4697
914.8	0.453797	0.6807	0.058	0.0579	0.6944	0.6228	7.4725
915	0.453952	0.6809	0.058	0.0579	0.6944	0.6231	7.4753
915.2	0.454106	0.6812	0.058	0.0579	0.6944	0.6233	7.4781
915.4	0.454261	0.6814	0.058	0.0579	0.6944	0.6235	7.4809
915.6	0.454416	0.6816	0.058	0.0579	0.6944	0.6238	7.4837
915.8	0.454571	0.6819	0.058	0.0579	0.6944	0.6240	7.4864
916	0.454726	0.6821	0.058	0.0579	0.6944	0.6242	7.4892
916.2	0.454881	0.6823	0.058	0.0579	0.6944	0.6245	7.4920
916.4	0.455037	0.6826	0.058	0.0579	0.6944	0.6247	7.4948
916.6	0.455192	0.6828	0.058	0.0579	0.6944	0.6249	7.4976
916.8	0.455347	0.6830	0.058	0.0579	0.6944	0.6252	7.5004
917	0.455502	0.6833	0.058	0.0579	0.6944	0.6254	7.5032
917.2	0.455658	0.6835	0.058	0.0579	0.6944	0.6256	7.5060
917.4	0.455813	0.6837	0.058	0.0579	0.6944	0.6258	7.5088
917.6	0.455969	0.6840	0.058	0.0579	0.6944	0.6261	7.5116
917.8	0.456125	0.6842	0.058	0.0579	0.6944	0.6263	7.5144
918	0.45628	0.6844	0.058	0.0579	0.6944	0.6265	7.5172
918.2	0.456436	0.6847	0.058	0.0579	0.6944	0.6268	7.5200
918.4	0.456592	0.6849	0.058	0.0579	0.6944	0.6270	7.5228
918.6	0.456748	0.6851	0.058	0.0579	0.6944	0.6273	7.5256
918.8	0.456903	0.6854	0.058	0.0579	0.6944	0.6275	7.5284
919	0.457059	0.6856	0.058	0.0579	0.6944	0.6277	7.5312
919.2	0.457216	0.6858	0.058	0.0579	0.6944	0.6280	7.5340
919.4	0.457372	0.6861	0.058	0.0579	0.6944	0.6282	7.5368
919.6	0.457528	0.6863	0.058	0.0579	0.6944	0.6284	7.5397

919.8	0.457684	0.6865	0.058	0.0579	0.6944	0.6287	7.5425
920	0.45784	0.6868	0.058	0.0579	0.6944	0.6289	7.5453
920.2	0.457997	0.6870	0.058	0.0579	0.6944	0.6291	7.5481
920.4	0.458153	0.6872	0.058	0.0579	0.6944	0.6294	7.5509
920.6	0.45831	0.6875	0.058	0.0579	0.6944	0.6296	7.5537
920.8	0.458466	0.6877	0.058	0.0579	0.6944	0.6298	7.5565
921	0.458623	0.6879	0.058	0.0579	0.6944	0.6301	7.5594
921.2	0.458779	0.6882	0.058	0.0579	0.6944	0.6303	7.5622
921.4	0.458936	0.6884	0.058	0.0579	0.6944	0.6305	7.5650
921.6	0.459093	0.6886	0.058	0.0579	0.6944	0.6308	7.5678
921.8	0.45925	0.6889	0.058	0.0579	0.6944	0.6310	7.5706
922	0.459407	0.6891	0.058	0.0579	0.6944	0.6312	7.5735
922.2	0.459564	0.6893	0.058	0.0579	0.6944	0.6315	7.5763
922.4	0.459721	0.6896	0.058	0.0579	0.6944	0.6317	7.5791
922.6	0.459878	0.6898	0.058	0.0579	0.6944	0.6319	7.5819
922.8	0.460035	0.6901	0.058	0.0579	0.6944	0.6322	7.5848
923	0.460192	0.6903	0.058	0.0579	0.6944	0.6324	7.5876
923.2	0.46035	0.6905	0.058	0.0579	0.6944	0.6327	7.5904
923.4	0.460507	0.6908	0.058	0.0579	0.6944	0.6329	7.5933
923.6	0.460665	0.6910	0.058	0.0579	0.6944	0.6331	7.5961
923.8	0.460822	0.6912	0.058	0.0579	0.6944	0.6334	7.5989
924	0.46098	0.6915	0.058	0.0579	0.6944	0.6336	7.6018
924.2	0.461137	0.6917	0.058	0.0579	0.6944	0.6338	7.6046
924.4	0.461295	0.6919	0.058	0.0579	0.6944	0.6341	7.6074
924.6	0.461453	0.6922	0.058	0.0579	0.6944	0.6343	7.6103
924.8	0.461611	0.6924	0.058	0.0579	0.6944	0.6345	7.6131
925	0.461769	0.6927	0.058	0.0579	0.6944	0.6348	7.6160
925.2	0.461927	0.6929	0.058	0.0579	0.6944	0.6350	7.6188
925.4	0.462085	0.6931	0.058	0.0579	0.6944	0.6353	7.6217
925.6	0.462243	0.6934	0.058	0.0579	0.6944	0.6355	7.6245
925.8	0.462401	0.6936	0.058	0.0579	0.6944	0.6357	7.6273
926	0.462559	0.6938	0.058	0.0579	0.6944	0.6360	7.6302
926.2	0.462717	0.6941	0.058	0.0579	0.6944	0.6362	7.6330
926.4	0.462876	0.6943	0.058	0.0579	0.6944	0.6364	7.6359
926.6	0.463034	0.6946	0.058	0.0579	0.6944	0.6367	7.6387
926.8	0.463193	0.6948	0.058	0.0579	0.6944	0.6369	7.6416
927	0.463351	0.6950	0.058	0.0579	0.6944	0.6372	7.6445
927.2	0.46351	0.6953	0.058	0.0579	0.6944	0.6374	7.6473
927.4	0.463669	0.6955	0.058	0.0579	0.6944	0.6376	7.6502
927.6	0.463827	0.6957	0.058	0.0579	0.6944	0.6379	7.6530
927.8	0.463986	0.6960	0.058	0.0579	0.6944	0.6381	7.6559
928	0.464145	0.6962	0.058	0.0579	0.6944	0.6383	7.6587
928.2	0.464304	0.6965	0.058	0.0579	0.6944	0.6386	7.6616
928.4	0.464463	0.6967	0.058	0.0579	0.6944	0.6388	7.6645
928.6	0.464622	0.6969	0.058	0.0579	0.6944	0.6391	7.6673
928.8	0.464781	0.6972	0.058	0.0579	0.6944	0.6393	7.6702
929	0.464941	0.6974	0.058	0.0579	0.6944	0.6395	7.6731

929.2	0.4651	0.6976	0.058	0.0579	0.6944	0.6398	7.6759
929.4	0.465259	0.6979	0.058	0.0579	0.6944	0.6400	7.6788
929.6	0.465419	0.6981	0.058	0.0579	0.6944	0.6403	7.6817
929.8	0.465578	0.6984	0.058	0.0579	0.6944	0.6405	7.6845
930	0.465738	0.6986	0.058	0.0579	0.6944	0.6407	7.6874
930.2	0.465897	0.6988	0.058	0.0579	0.6944	0.6410	7.6903
930.4	0.466057	0.6991	0.058	0.0579	0.6944	0.6412	7.6931
930.6	0.466217	0.6993	0.058	0.0579	0.6944	0.6415	7.6960
930.8	0.466377	0.6996	0.058	0.0579	0.6944	0.6417	7.6989
931	0.466537	0.6998	0.058	0.0579	0.6944	0.6419	7.7018
931.2	0.466697	0.7000	0.058	0.0579	0.6944	0.6422	7.7047
931.4	0.466857	0.7003	0.058	0.0579	0.6944	0.6424	7.7075
931.6	0.467017	0.7005	0.058	0.0579	0.6944	0.6427	7.7104
931.8	0.467177	0.7008	0.058	0.0579	0.6944	0.6429	7.7133
932	0.467337	0.7010	0.058	0.0579	0.6944	0.6431	7.7162
932.2	0.467498	0.7012	0.058	0.0579	0.6944	0.6434	7.7191
932.4	0.467658	0.7015	0.058	0.0579	0.6944	0.6436	7.7220
932.6	0.467818	0.7017	0.058	0.0579	0.6944	0.6439	7.7248
932.8	0.467979	0.7020	0.058	0.0579	0.6944	0.6441	7.7277
933	0.46814	0.7022	0.058	0.0579	0.6944	0.6443	7.7306
933.2	0.4683	0.7025	0.058	0.0579	0.6944	0.6446	7.7335
933.4	0.468461	0.7027	0.058	0.0579	0.6944	0.6448	7.7364
933.6	0.468622	0.7029	0.058	0.0579	0.6944	0.6451	7.7393
933.8	0.468783	0.7032	0.058	0.0579	0.6944	0.6453	7.7422
934	0.468944	0.7034	0.058	0.0579	0.6944	0.6455	7.7451
934.2	0.469105	0.7037	0.058	0.0579	0.6944	0.6458	7.7480
934.4	0.469266	0.7039	0.058	0.0579	0.6944	0.6460	7.7509
934.6	0.469427	0.7041	0.058	0.0579	0.6944	0.6463	7.7538
934.8	0.469588	0.7044	0.058	0.0579	0.6944	0.6465	7.7567
935	0.469749	0.7046	0.058	0.0579	0.6944	0.6468	7.7596
935.2	0.469911	0.7049	0.058	0.0579	0.6944	0.6470	7.7625
935.4	0.470072	0.7051	0.058	0.0579	0.6944	0.6472	7.7654
935.6	0.470234	0.7054	0.058	0.0579	0.6944	0.6475	7.7683
935.8	0.470395	0.7056	0.058	0.0579	0.6944	0.6477	7.7712
936	0.470557	0.7058	0.058	0.0579	0.6944	0.6480	7.7741
936.2	0.470718	0.7061	0.058	0.0579	0.6944	0.6482	7.7770
936.4	0.47088	0.7063	0.058	0.0579	0.6944	0.6484	7.7799
936.6	0.471042	0.7066	0.058	0.0579	0.6944	0.6487	7.7829
936.8	0.471204	0.7068	0.058	0.0579	0.6944	0.6489	7.7858
937	0.471366	0.7070	0.058	0.0579	0.6944	0.6492	7.7887
937.2	0.471528	0.7073	0.058	0.0579	0.6944	0.6494	7.7916
937.4	0.47169	0.7075	0.058	0.0579	0.6944	0.6497	7.7945
937.6	0.471852	0.7078	0.058	0.0579	0.6944	0.6499	7.7974
937.8	0.472015	0.7080	0.058	0.0579	0.6944	0.6502	7.8004
938	0.472177	0.7083	0.058	0.0579	0.6944	0.6504	7.8033
938.2	0.472339	0.7085	0.058	0.0579	0.6944	0.6506	7.8062
938.4	0.472502	0.7088	0.058	0.0579	0.6944	0.6509	7.8091

938.6	0.472664	0.7090	0.058	0.0579	0.6944	0.6511	7.8121
938.8	0.472827	0.7092	0.058	0.0579	0.6944	0.6514	7.8150
939	0.47299	0.7095	0.058	0.0579	0.6944	0.6516	7.8179
939.2	0.473153	0.7097	0.058	0.0579	0.6944	0.6519	7.8208
939.4	0.473315	0.7100	0.058	0.0579	0.6944	0.6521	7.8238
939.6	0.473478	0.7102	0.058	0.0579	0.6944	0.6523	7.8267
939.8	0.473641	0.7105	0.058	0.0579	0.6944	0.6526	7.8296
940	0.473804	0.7107	0.058	0.0579	0.6944	0.6528	7.8326
940.2	0.473967	0.7110	0.058	0.0579	0.6944	0.6531	7.8355
940.4	0.474131	0.7112	0.058	0.0579	0.6944	0.6533	7.8384
940.6	0.474294	0.7114	0.058	0.0579	0.6944	0.6536	7.8414
940.8	0.474457	0.7117	0.058	0.0579	0.6944	0.6538	7.8443
941	0.474621	0.7119	0.058	0.0579	0.6944	0.6541	7.8473
941.2	0.474784	0.7122	0.058	0.0579	0.6944	0.6543	7.8502
941.4	0.474948	0.7124	0.058	0.0579	0.6944	0.6546	7.8531
941.6	0.475111	0.7127	0.058	0.0579	0.6944	0.6548	7.8561
941.8	0.475275	0.7129	0.058	0.0579	0.6944	0.6550	7.8590
942	0.475439	0.7132	0.058	0.0579	0.6944	0.6553	7.8620
942.2	0.475603	0.7134	0.058	0.0579	0.6944	0.6555	7.8649
942.4	0.475767	0.7137	0.058	0.0579	0.6944	0.6558	7.8679
942.6	0.475931	0.7139	0.058	0.0579	0.6944	0.6560	7.8708
942.8	0.476095	0.7141	0.058	0.0579	0.6944	0.6563	7.8738
943	0.476259	0.7144	0.058	0.0579	0.6944	0.6565	7.8767
943.2	0.476423	0.7146	0.058	0.0579	0.6944	0.6568	7.8797
943.4	0.476588	0.7149	0.058	0.0579	0.6944	0.6570	7.8827
943.6	0.476752	0.7151	0.058	0.0579	0.6944	0.6573	7.8856
943.8	0.476916	0.7154	0.058	0.0579	0.6944	0.6575	7.8886
944	0.477081	0.7156	0.058	0.0579	0.6944	0.6578	7.8915
944.2	0.477245	0.7159	0.058	0.0579	0.6944	0.6580	7.8945
944.4	0.47741	0.7161	0.058	0.0579	0.6944	0.6582	7.8975
944.6	0.477575	0.7164	0.058	0.0579	0.6944	0.6585	7.9004
944.8	0.47774	0.7166	0.058	0.0579	0.6944	0.6587	7.9034
945	0.477905	0.7169	0.058	0.0579	0.6944	0.6590	7.9064
945.2	0.47807	0.7171	0.058	0.0579	0.6944	0.6592	7.9093
945.4	0.478235	0.7174	0.058	0.0579	0.6944	0.6595	7.9123
945.6	0.4784	0.7176	0.058	0.0579	0.6944	0.6597	7.9153
945.8	0.478565	0.7178	0.058	0.0579	0.6944	0.6600	7.9182
946	0.47873	0.7181	0.058	0.0579	0.6944	0.6602	7.9212
946.2	0.478896	0.7183	0.058	0.0579	0.6944	0.6605	7.9242
946.4	0.479061	0.7186	0.058	0.0579	0.6944	0.6607	7.9272
946.6	0.479227	0.7188	0.058	0.0579	0.6944	0.6610	7.9301
946.8	0.479392	0.7191	0.058	0.0579	0.6944	0.6612	7.9331
947	0.479558	0.7193	0.058	0.0579	0.6944	0.6615	7.9361
947.2	0.479724	0.7196	0.058	0.0579	0.6944	0.6617	7.9391
947.4	0.479889	0.7198	0.058	0.0579	0.6944	0.6620	7.9421
947.6	0.480055	0.7201	0.058	0.0579	0.6944	0.6622	7.9451
947.8	0.480221	0.7203	0.058	0.0579	0.6944	0.6625	7.9480

948	0.480387	0.7206	0.058	0.0579	0.6944	0.6627	7.9510
948.2	0.480553	0.7208	0.058	0.0579	0.6944	0.6630	7.9540
948.4	0.48072	0.7211	0.058	0.0579	0.6944	0.6632	7.9570
948.6	0.480886	0.7213	0.058	0.0579	0.6944	0.6635	7.9600
948.8	0.481052	0.7216	0.058	0.0579	0.6944	0.6637	7.9630
949	0.481219	0.7218	0.058	0.0579	0.6944	0.6640	7.9660
949.2	0.481385	0.7221	0.058	0.0579	0.6944	0.6642	7.9690
949.4	0.481552	0.7223	0.058	0.0579	0.6944	0.6645	7.9720
949.6	0.481718	0.7226	0.058	0.0579	0.6944	0.6647	7.9750
949.8	0.481885	0.7228	0.058	0.0579	0.6944	0.6650	7.9780
950	0.482052	0.7231	0.058	0.0579	0.6944	0.6652	7.9810
950.2	0.482219	0.7233	0.058	0.0579	0.6944	0.6655	7.9840
950.4	0.482386	0.7236	0.058	0.0579	0.6944	0.6657	7.9870
950.6	0.482553	0.7238	0.058	0.0579	0.6944	0.6660	7.9900
950.8	0.48272	0.7241	0.058	0.0579	0.6944	0.6662	7.9930
951	0.482887	0.7243	0.058	0.0579	0.6944	0.6665	7.9960
951.2	0.483054	0.7246	0.058	0.0579	0.6944	0.6667	7.9990
951.4	0.483222	0.7248	0.058	0.0579	0.6944	0.6670	8.0020
951.6	0.483389	0.7251	0.058	0.0579	0.6944	0.6672	8.0051
951.8	0.483557	0.7253	0.058	0.0579	0.6944	0.6675	8.0081
952	0.483724	0.7256	0.058	0.0579	0.6944	0.6677	8.0111
952.2	0.483892	0.7258	0.058	0.0579	0.6944	0.6680	8.0141
952.4	0.48406	0.7261	0.058	0.0579	0.6944	0.6682	8.0171
952.6	0.484227	0.7263	0.058	0.0579	0.6944	0.6685	8.0201
952.8	0.484395	0.7266	0.058	0.0579	0.6944	0.6687	8.0232
953	0.484563	0.7268	0.058	0.0579	0.6944	0.6690	8.0262
953.2	0.484731	0.7271	0.058	0.0579	0.6944	0.6692	8.0292
953.4	0.484899	0.7273	0.058	0.0579	0.6944	0.6695	8.0322
953.6	0.485068	0.7276	0.058	0.0579	0.6944	0.6697	8.0353
953.8	0.485236	0.7279	0.058	0.0579	0.6944	0.6700	8.0383
954	0.485404	0.7281	0.058	0.0579	0.6944	0.6702	8.0413
954.2	0.485573	0.7284	0.058	0.0579	0.6944	0.6705	8.0443
954.4	0.485741	0.7286	0.058	0.0579	0.6944	0.6707	8.0474
954.6	0.48591	0.7289	0.058	0.0579	0.6944	0.6710	8.0504
954.8	0.486079	0.7291	0.058	0.0579	0.6944	0.6712	8.0535
955	0.486247	0.7294	0.058	0.0579	0.6944	0.6715	8.0565
955.2	0.486416	0.7296	0.058	0.0579	0.6944	0.6718	8.0595
955.4	0.486585	0.7299	0.058	0.0579	0.6944	0.6720	8.0626
955.6	0.486754	0.7301	0.058	0.0579	0.6944	0.6723	8.0656
955.8	0.486923	0.7304	0.058	0.0579	0.6944	0.6725	8.0687
956	0.487093	0.7306	0.058	0.0579	0.6944	0.6728	8.0717
956.2	0.487262	0.7309	0.058	0.0579	0.6944	0.6730	8.0747
956.4	0.487431	0.7311	0.058	0.0579	0.6944	0.6733	8.0778
956.6	0.487601	0.7314	0.058	0.0579	0.6944	0.6735	8.0808
956.8	0.48777	0.7317	0.058	0.0579	0.6944	0.6738	8.0839
957	0.48794	0.7319	0.058	0.0579	0.6944	0.6740	8.0869
957.2	0.488109	0.7322	0.058	0.0579	0.6944	0.6743	8.0900

957.4	0.488279	0.7324	0.058	0.0579	0.6944	0.6745	8.0931
957.6	0.488449	0.7327	0.058	0.0579	0.6944	0.6748	8.0961
957.8	0.488619	0.7329	0.058	0.0579	0.6944	0.6751	8.0992
958	0.488789	0.7332	0.058	0.0579	0.6944	0.6753	8.1022
958.2	0.488959	0.7334	0.058	0.0579	0.6944	0.6756	8.1053
958.4	0.489129	0.7337	0.058	0.0579	0.6944	0.6758	8.1083
958.6	0.489299	0.7339	0.058	0.0579	0.6944	0.6761	8.1114
958.8	0.48947	0.7342	0.058	0.0579	0.6944	0.6763	8.1145
959	0.48964	0.7345	0.058	0.0579	0.6944	0.6766	8.1175
959.2	0.489811	0.7347	0.058	0.0579	0.6944	0.6768	8.1206
959.4	0.489981	0.7350	0.058	0.0579	0.6944	0.6771	8.1237
959.6	0.490152	0.7352	0.058	0.0579	0.6944	0.6774	8.1268
959.8	0.490323	0.7355	0.058	0.0579	0.6944	0.6776	8.1298
960	0.490493	0.7357	0.058	0.0579	0.6944	0.6779	8.1329
960.2	0.490664	0.7360	0.058	0.0579	0.6944	0.6781	8.1360
960.4	0.490835	0.7363	0.058	0.0579	0.6944	0.6784	8.1391
960.6	0.491006	0.7365	0.058	0.0579	0.6944	0.6786	8.1421
960.8	0.491178	0.7368	0.058	0.0579	0.6944	0.6789	8.1452
961	0.491349	0.7370	0.058	0.0579	0.6944	0.6792	8.1483
961.2	0.49152	0.7373	0.058	0.0579	0.6944	0.6794	8.1514
961.4	0.491692	0.7375	0.058	0.0579	0.6944	0.6797	8.1545
961.6	0.491863	0.7378	0.058	0.0579	0.6944	0.6799	8.1575
961.8	0.492035	0.7381	0.058	0.0579	0.6944	0.6802	8.1606
962	0.492206	0.7383	0.058	0.0579	0.6944	0.6804	8.1637
962.2	0.492378	0.7386	0.058	0.0579	0.6944	0.6807	8.1668
962.4	0.49255	0.7388	0.058	0.0579	0.6944	0.6810	8.1699
962.6	0.492722	0.7391	0.058	0.0579	0.6944	0.6812	8.1730
962.8	0.492894	0.7393	0.058	0.0579	0.6944	0.6815	8.1761
963	0.493066	0.7396	0.058	0.0579	0.6944	0.6817	8.1792
963.2	0.493238	0.7399	0.058	0.0579	0.6944	0.6820	8.1823
963.4	0.493411	0.7401	0.058	0.0579	0.6944	0.6822	8.1854
963.6	0.493583	0.7404	0.058	0.0579	0.6944	0.6825	8.1885
963.8	0.493755	0.7406	0.058	0.0579	0.6944	0.6828	8.1916
964	0.493928	0.7409	0.058	0.0579	0.6944	0.6830	8.1947
964.2	0.4941	0.7412	0.058	0.0579	0.6944	0.6833	8.1978
964.4	0.494273	0.7414	0.058	0.0579	0.6944	0.6835	8.2009
964.6	0.494446	0.7417	0.058	0.0579	0.6944	0.6838	8.2040
964.8	0.494619	0.7419	0.058	0.0579	0.6944	0.6841	8.2071
965	0.494792	0.7422	0.058	0.0579	0.6944	0.6843	8.2103
965.2	0.494965	0.7424	0.058	0.0579	0.6944	0.6846	8.2134
965.4	0.495138	0.7427	0.058	0.0579	0.6944	0.6848	8.2165
965.6	0.495311	0.7430	0.058	0.0579	0.6944	0.6851	8.2196
965.8	0.495485	0.7432	0.058	0.0579	0.6944	0.6854	8.2227
966	0.495658	0.7435	0.058	0.0579	0.6944	0.6856	8.2258
966.2	0.495831	0.7437	0.058	0.0579	0.6944	0.6859	8.2290
966.4	0.496005	0.7440	0.058	0.0579	0.6944	0.6861	8.2321
966.6	0.496179	0.7443	0.058	0.0579	0.6944	0.6864	8.2352

966.8	0.496352	0.7445	0.058	0.0579	0.6944	0.6867	8.2383
967	0.496526	0.7448	0.058	0.0579	0.6944	0.6869	8.2415
967.2	0.4967	0.7451	0.058	0.0579	0.6944	0.6872	8.2446
967.4	0.496874	0.7453	0.058	0.0579	0.6944	0.6874	8.2477
967.6	0.497048	0.7456	0.058	0.0579	0.6944	0.6877	8.2509
967.8	0.497222	0.7458	0.058	0.0579	0.6944	0.6880	8.2540
968	0.497397	0.7461	0.058	0.0579	0.6944	0.6882	8.2571
968.2	0.497571	0.7464	0.058	0.0579	0.6944	0.6885	8.2603
968.4	0.497746	0.7466	0.058	0.0579	0.6944	0.6887	8.2634
968.6	0.49792	0.7469	0.058	0.0579	0.6944	0.6890	8.2665
968.8	0.498095	0.7471	0.058	0.0579	0.6944	0.6893	8.2697
969	0.498269	0.7474	0.058	0.0579	0.6944	0.6895	8.2728
969.2	0.498444	0.7477	0.058	0.0579	0.6944	0.6898	8.2760
969.4	0.498619	0.7479	0.058	0.0579	0.6944	0.6901	8.2791
969.6	0.498794	0.7482	0.058	0.0579	0.6944	0.6903	8.2823
969.8	0.498969	0.7485	0.058	0.0579	0.6944	0.6906	8.2854
970	0.499144	0.7487	0.058	0.0579	0.6944	0.6908	8.2886
970.2	0.49932	0.7490	0.058	0.0579	0.6944	0.6911	8.2917
970.4	0.499495	0.7492	0.058	0.0579	0.6944	0.6914	8.2949
970.6	0.499671	0.7495	0.058	0.0579	0.6944	0.6916	8.2980
970.8	0.499846	0.7498	0.058	0.0579	0.6944	0.6919	8.3012
971	0.500022	0.7500	0.058	0.0579	0.6944	0.6922	8.3044
971.2	0.500197	0.7503	0.058	0.0579	0.6944	0.6924	8.3075
971.4	0.500373	0.7506	0.058	0.0579	0.6944	0.6927	8.3107
971.6	0.500549	0.7508	0.058	0.0579	0.6944	0.6930	8.3139
971.8	0.500725	0.7511	0.058	0.0579	0.6944	0.6932	8.3170
972	0.500901	0.7514	0.058	0.0579	0.6944	0.6935	8.3202
972.2	0.501077	0.7516	0.058	0.0579	0.6944	0.6937	8.3234
972.4	0.501254	0.7519	0.058	0.0579	0.6944	0.6940	8.3265
972.6	0.50143	0.7521	0.058	0.0579	0.6944	0.6943	8.3297
972.8	0.501607	0.7524	0.058	0.0579	0.6944	0.6945	8.3329
973	0.501783	0.7527	0.058	0.0579	0.6944	0.6948	8.3361
973.2	0.50196	0.7529	0.058	0.0579	0.6944	0.6951	8.3392
973.4	0.502136	0.7532	0.058	0.0579	0.6944	0.6953	8.3424
973.6	0.502313	0.7535	0.058	0.0579	0.6944	0.6956	8.3456
973.8	0.50249	0.7537	0.058	0.0579	0.6944	0.6959	8.3488
974	0.502667	0.7540	0.058	0.0579	0.6944	0.6961	8.3520
974.2	0.502844	0.7543	0.058	0.0579	0.6944	0.6964	8.3552
974.4	0.503022	0.7545	0.058	0.0579	0.6944	0.6967	8.3583
974.6	0.503199	0.7548	0.058	0.0579	0.6944	0.6969	8.3615
974.8	0.503376	0.7551	0.058	0.0579	0.6944	0.6972	8.3647
975	0.503554	0.7553	0.058	0.0579	0.6944	0.6975	8.3679
975.2	0.503731	0.7556	0.058	0.0579	0.6944	0.6977	8.3711
975.4	0.503909	0.7559	0.058	0.0579	0.6944	0.6980	8.3743
975.6	0.504087	0.7561	0.058	0.0579	0.6944	0.6983	8.3775
975.8	0.504265	0.7564	0.058	0.0579	0.6944	0.6985	8.3807
976	0.504443	0.7567	0.058	0.0579	0.6944	0.6988	8.3839

976.2	0.504621	0.7569	0.058	0.0579	0.6944	0.6991	8.3871
976.4	0.504799	0.7572	0.058	0.0579	0.6944	0.6993	8.3903
976.6	0.504977	0.7575	0.058	0.0579	0.6944	0.6996	8.3935
976.8	0.505155	0.7577	0.058	0.0579	0.6944	0.6999	8.3967
977	0.505334	0.7580	0.058	0.0579	0.6944	0.7001	8.4000
977.2	0.505512	0.7583	0.058	0.0579	0.6944	0.7004	8.4032
977.4	0.505691	0.7585	0.058	0.0579	0.6944	0.7007	8.4064
977.6	0.50587	0.7588	0.058	0.0579	0.6944	0.7009	8.4096
977.8	0.506048	0.7591	0.058	0.0579	0.6944	0.7012	8.4128
978	0.506227	0.7593	0.058	0.0579	0.6944	0.7015	8.4160
978.2	0.506406	0.7596	0.058	0.0579	0.6944	0.7017	8.4193
978.4	0.506586	0.7599	0.058	0.0579	0.6944	0.7020	8.4225
978.6	0.506765	0.7601	0.058	0.0579	0.6944	0.7023	8.4257
978.8	0.506944	0.7604	0.058	0.0579	0.6944	0.7025	8.4289
979	0.507123	0.7607	0.058	0.0579	0.6944	0.7028	8.4322
979.2	0.507303	0.7610	0.058	0.0579	0.6944	0.7031	8.4354
979.4	0.507483	0.7612	0.058	0.0579	0.6944	0.7034	8.4386
979.6	0.507662	0.7615	0.058	0.0579	0.6944	0.7036	8.4419
979.8	0.507842	0.7618	0.058	0.0579	0.6944	0.7039	8.4451
980	0.508022	0.7620	0.058	0.0579	0.6944	0.7042	8.4483
980.2	0.508202	0.7623	0.058	0.0579	0.6944	0.7044	8.4516
980.4	0.508382	0.7626	0.058	0.0579	0.6944	0.7047	8.4548
980.6	0.508562	0.7628	0.058	0.0579	0.6944	0.7050	8.4581
980.8	0.508742	0.7631	0.058	0.0579	0.6944	0.7052	8.4613
981	0.508923	0.7634	0.058	0.0579	0.6944	0.7055	8.4645
981.2	0.509103	0.7637	0.058	0.0579	0.6944	0.7058	8.4678
981.4	0.509284	0.7639	0.058	0.0579	0.6944	0.7061	8.4710
981.6	0.509465	0.7642	0.058	0.0579	0.6944	0.7063	8.4743
981.8	0.509645	0.7645	0.058	0.0579	0.6944	0.7066	8.4775
982	0.509826	0.7647	0.058	0.0579	0.6944	0.7069	8.4808
982.2	0.510007	0.7650	0.058	0.0579	0.6944	0.7071	8.4841
982.4	0.510188	0.7653	0.058	0.0579	0.6944	0.7074	8.4873
982.6	0.51037	0.7656	0.058	0.0579	0.6944	0.7077	8.4906
982.8	0.510551	0.7658	0.058	0.0579	0.6944	0.7080	8.4938
983	0.510732	0.7661	0.058	0.0579	0.6944	0.7082	8.4971
983.2	0.510914	0.7664	0.058	0.0579	0.6944	0.7085	8.5004
983.4	0.511095	0.7666	0.058	0.0579	0.6944	0.7088	8.5036
983.6	0.511277	0.7669	0.058	0.0579	0.6944	0.7090	8.5069
983.8	0.511459	0.7672	0.058	0.0579	0.6944	0.7093	8.5102
984	0.511641	0.7675	0.058	0.0579	0.6944	0.7096	8.5134
984.2	0.511823	0.7677	0.058	0.0579	0.6944	0.7099	8.5167
984.4	0.512005	0.7680	0.058	0.0579	0.6944	0.7101	8.5200
984.6	0.512187	0.7683	0.058	0.0579	0.6944	0.7104	8.5233
984.8	0.512369	0.7686	0.058	0.0579	0.6944	0.7107	8.5266
985	0.512552	0.7688	0.058	0.0579	0.6944	0.7110	8.5298
985.2	0.512734	0.7691	0.058	0.0579	0.6944	0.7112	8.5331
985.4	0.512917	0.7694	0.058	0.0579	0.6944	0.7115	8.5364

985.6	0.513099	0.7696	0.058	0.0579	0.6944	0.7118	8.5397
985.8	0.513282	0.7699	0.058	0.0579	0.6944	0.7121	8.5430
986	0.513465	0.7702	0.058	0.0579	0.6944	0.7123	8.5463
986.2	0.513648	0.7705	0.058	0.0579	0.6944	0.7126	8.5496
986.4	0.513831	0.7707	0.058	0.0579	0.6944	0.7129	8.5529
986.6	0.514015	0.7710	0.058	0.0579	0.6944	0.7132	8.5562
986.8	0.514198	0.7713	0.058	0.0579	0.6944	0.7134	8.5595
987	0.514381	0.7716	0.058	0.0579	0.6944	0.7137	8.5628
987.2	0.514565	0.7718	0.058	0.0579	0.6944	0.7140	8.5661
987.4	0.514748	0.7721	0.058	0.0579	0.6944	0.7143	8.5694
987.6	0.514932	0.7724	0.058	0.0579	0.6944	0.7145	8.5727
987.8	0.515116	0.7727	0.058	0.0579	0.6944	0.7148	8.5760
988	0.5153	0.7730	0.058	0.0579	0.6944	0.7151	8.5793
988.2	0.515484	0.7732	0.058	0.0579	0.6944	0.7154	8.5826
988.4	0.515668	0.7735	0.058	0.0579	0.6944	0.7156	8.5859
988.6	0.515853	0.7738	0.058	0.0579	0.6944	0.7159	8.5892
988.8	0.516037	0.7741	0.058	0.0579	0.6944	0.7162	8.5926
989	0.516221	0.7743	0.058	0.0579	0.6944	0.7165	8.5959
989.2	0.516406	0.7746	0.058	0.0579	0.6944	0.7167	8.5992
989.4	0.516591	0.7749	0.058	0.0579	0.6944	0.7170	8.6025
989.6	0.516776	0.7752	0.058	0.0579	0.6944	0.7173	8.6059
989.8	0.51696	0.7754	0.058	0.0579	0.6944	0.7176	8.6092
990	0.517145	0.7757	0.058	0.0579	0.6944	0.7178	8.6125
990.2	0.517331	0.7760	0.058	0.0579	0.6944	0.7181	8.6158
990.4	0.517516	0.7763	0.058	0.0579	0.6944	0.7184	8.6192
990.6	0.517701	0.7766	0.058	0.0579	0.6944	0.7187	8.6225
990.8	0.517887	0.7768	0.058	0.0579	0.6944	0.7190	8.6258
991	0.518072	0.7771	0.058	0.0579	0.6944	0.7192	8.6292
991.2	0.518258	0.7774	0.058	0.0579	0.6944	0.7195	8.6325
991.4	0.518444	0.7777	0.058	0.0579	0.6944	0.7198	8.6359
991.6	0.51863	0.7779	0.058	0.0579	0.6944	0.7201	8.6392
991.8	0.518816	0.7782	0.058	0.0579	0.6944	0.7204	8.6426
992	0.519002	0.7785	0.058	0.0579	0.6944	0.7206	8.6459
992.2	0.519188	0.7788	0.058	0.0579	0.6944	0.7209	8.6493
992.4	0.519374	0.7791	0.058	0.0579	0.6944	0.7212	8.6526
992.6	0.519561	0.7793	0.058	0.0579	0.6944	0.7215	8.6560
992.8	0.519747	0.7796	0.058	0.0579	0.6944	0.7218	8.6593
993	0.519934	0.7799	0.058	0.0579	0.6944	0.7220	8.6627
993.2	0.520121	0.7802	0.058	0.0579	0.6944	0.7223	8.6660
993.4	0.520307	0.7805	0.058	0.0579	0.6944	0.7226	8.6694
993.6	0.520494	0.7807	0.058	0.0579	0.6944	0.7229	8.6728
993.8	0.520682	0.7810	0.058	0.0579	0.6944	0.7232	8.6761
994	0.520869	0.7813	0.058	0.0579	0.6944	0.7234	8.6795
994.2	0.521056	0.7816	0.058	0.0579	0.6944	0.7237	8.6829
994.4	0.521244	0.7819	0.058	0.0579	0.6944	0.7240	8.6863
994.6	0.521431	0.7821	0.058	0.0579	0.6944	0.7243	8.6896
994.8	0.521619	0.7824	0.058	0.0579	0.6944	0.7246	8.6930

995	0.521806	0.7827	0.058	0.0579	0.6944	0.7248	8.6964
995.2	0.521994	0.7830	0.058	0.0579	0.6944	0.7251	8.6998
995.4	0.522182	0.7833	0.058	0.0579	0.6944	0.7254	8.7031
995.6	0.52237	0.7836	0.058	0.0579	0.6944	0.7257	8.7065
995.8	0.522559	0.7838	0.058	0.0579	0.6944	0.7260	8.7099
996	0.522747	0.7841	0.058	0.0579	0.6944	0.7263	8.7133
996.2	0.522935	0.7844	0.058	0.0579	0.6944	0.7265	8.7167
996.4	0.523124	0.7847	0.058	0.0579	0.6944	0.7268	8.7201
996.6	0.523313	0.7850	0.058	0.0579	0.6944	0.7271	8.7235
996.8	0.523501	0.7853	0.058	0.0579	0.6944	0.7274	8.7269
997	0.52369	0.7855	0.058	0.0579	0.6944	0.7277	8.7303
997.2	0.523879	0.7858	0.058	0.0579	0.6944	0.7279	8.7337
997.4	0.524069	0.7861	0.058	0.0579	0.6944	0.7282	8.7371
997.6	0.524258	0.7864	0.058	0.0579	0.6944	0.7285	8.7405
997.8	0.524447	0.7867	0.058	0.0579	0.6944	0.7288	8.7439
998	0.524637	0.7870	0.058	0.0579	0.6944	0.7291	8.7473
998.2	0.524826	0.7872	0.058	0.0579	0.6944	0.7294	8.7507
998.4	0.525016	0.7875	0.058	0.0579	0.6944	0.7297	8.7541
998.6	0.525206	0.7878	0.058	0.0579	0.6944	0.7299	8.7576
998.8	0.525396	0.7881	0.058	0.0579	0.6944	0.7302	8.7610
999	0.525586	0.7884	0.058	0.0579	0.6944	0.7305	8.7644
999.2	0.525776	0.7887	0.058	0.0579	0.6944	0.7308	8.7678
999.4	0.525966	0.7889	0.058	0.0579	0.6944	0.7311	8.7712
999.6	0.526157	0.7892	0.058	0.0579	0.6944	0.7314	8.7747
999.8	0.526347	0.7895	0.058	0.0579	0.6944	0.7317	8.7781
1000	0.526538	0.7898	0.058	0.0579	0.6944	0.7319	8.7815
1000.2	0.526729	0.7901	0.058	0.0579	0.6944	0.7322	8.7850
1000.4	0.526919	0.7904	0.058	0.0579	0.6944	0.7325	8.7884
1000.6	0.52711	0.7907	0.058	0.0579	0.6944	0.7328	8.7918
1000.8	0.527302	0.7910	0.058	0.0579	0.6944	0.7331	8.7953
1001	0.527493	0.7912	0.058	0.0579	0.6944	0.7334	8.7987
1001.2	0.527684	0.7915	0.058	0.0579	0.6944	0.7337	8.8021
1001.4	0.527876	0.7918	0.058	0.0579	0.6944	0.7339	8.8056
1001.6	0.528067	0.7921	0.058	0.0579	0.6944	0.7342	8.8090
1001.8	0.528259	0.7924	0.058	0.0579	0.6944	0.7345	8.8125
1002	0.528451	0.7927	0.058	0.0579	0.6944	0.7348	8.8159
1002.2	0.528643	0.7930	0.058	0.0579	0.6944	0.7351	8.8194
1002.4	0.528835	0.7933	0.058	0.0579	0.6944	0.7354	8.8229
1002.6	0.529027	0.7935	0.058	0.0579	0.6944	0.7357	8.8263
1002.8	0.529219	0.7938	0.058	0.0579	0.6944	0.7360	8.8298
1003	0.529412	0.7941	0.058	0.0579	0.6944	0.7362	8.8332
1003.2	0.529604	0.7944	0.058	0.0579	0.6944	0.7365	8.8367
1003.4	0.529797	0.7947	0.058	0.0579	0.6944	0.7368	8.8402
1003.6	0.52999	0.7950	0.058	0.0579	0.6944	0.7371	8.8436
1003.8	0.530183	0.7953	0.058	0.0579	0.6944	0.7374	8.8471
1004	0.530376	0.7956	0.058	0.0579	0.6944	0.7377	8.8506
1004.2	0.530569	0.7959	0.058	0.0579	0.6944	0.7380	8.8541

1004.4	0.530762	0.7961	0.058	0.0579	0.6944	0.7383	8.8575
1004.6	0.530956	0.7964	0.058	0.0579	0.6944	0.7386	8.8610
1004.8	0.531149	0.7967	0.058	0.0579	0.6944	0.7389	8.8645
1005	0.531343	0.7970	0.058	0.0579	0.6944	0.7391	8.8680
1005.2	0.531537	0.7973	0.058	0.0579	0.6944	0.7394	8.8715
1005.4	0.531731	0.7976	0.058	0.0579	0.6944	0.7397	8.8750
1005.6	0.531925	0.7979	0.058	0.0579	0.6944	0.7400	8.8785
1005.8	0.532119	0.7982	0.058	0.0579	0.6944	0.7403	8.8819
1006	0.532313	0.7985	0.058	0.0579	0.6944	0.7406	8.8854
1006.2	0.532507	0.7988	0.058	0.0579	0.6944	0.7409	8.8889
1006.4	0.532702	0.7991	0.058	0.0579	0.6944	0.7412	8.8924
1006.6	0.532897	0.7993	0.058	0.0579	0.6944	0.7415	8.8959
1006.8	0.533091	0.7996	0.058	0.0579	0.6944	0.7418	8.8994
1007	0.533286	0.7999	0.058	0.0579	0.6944	0.7421	8.9030
1007.2	0.533481	0.8002	0.058	0.0579	0.6944	0.7424	8.9065
1007.4	0.533677	0.8005	0.058	0.0579	0.6944	0.7426	8.9100
1007.6	0.533872	0.8008	0.058	0.0579	0.6944	0.7429	8.9135
1007.8	0.534067	0.8011	0.058	0.0579	0.6944	0.7432	8.9170
1008	0.534263	0.8014	0.058	0.0579	0.6944	0.7435	8.9205
1008.2	0.534459	0.8017	0.058	0.0579	0.6944	0.7438	8.9240
1008.4	0.534654	0.8020	0.058	0.0579	0.6944	0.7441	8.9276
1008.6	0.53485	0.8023	0.058	0.0579	0.6944	0.7444	8.9311
1008.8	0.535046	0.8026	0.058	0.0579	0.6944	0.7447	8.9346
1009	0.535242	0.8029	0.058	0.0579	0.6944	0.7450	8.9382
1009.2	0.535439	0.8032	0.058	0.0579	0.6944	0.7453	8.9417
1009.4	0.535635	0.8035	0.058	0.0579	0.6944	0.7456	8.9452
1009.6	0.535832	0.8037	0.058	0.0579	0.6944	0.7459	8.9488
1009.8	0.536029	0.8040	0.058	0.0579	0.6944	0.7462	8.9523
1010	0.536225	0.8043	0.058	0.0579	0.6944	0.7465	8.9558
1010.2	0.536422	0.8046	0.058	0.0579	0.6944	0.7468	8.9594
1010.4	0.536619	0.8049	0.058	0.0579	0.6944	0.7471	8.9629
1010.6	0.536817	0.8052	0.058	0.0579	0.6944	0.7474	8.9665
1010.8	0.537014	0.8055	0.058	0.0579	0.6944	0.7477	8.9700
1011	0.537212	0.8058	0.058	0.0579	0.6944	0.7479	8.9736
1011.2	0.537409	0.8061	0.058	0.0579	0.6944	0.7482	8.9771
1011.4	0.537607	0.8064	0.058	0.0579	0.6944	0.7485	8.9807
1011.6	0.537805	0.8067	0.058	0.0579	0.6944	0.7488	8.9843
1011.8	0.538003	0.8070	0.058	0.0579	0.6944	0.7491	8.9878
1012	0.538201	0.8073	0.058	0.0579	0.6944	0.7494	8.9914
1012.2	0.538399	0.8076	0.058	0.0579	0.6944	0.7497	8.9950
1012.4	0.538598	0.8079	0.058	0.0579	0.6944	0.7500	8.9985
1012.6	0.538796	0.8082	0.058	0.0579	0.6944	0.7503	9.0021
1012.8	0.538995	0.8085	0.058	0.0579	0.6944	0.7506	9.0057
1013	0.539194	0.8088	0.058	0.0579	0.6944	0.7509	9.0093
1013.2	0.539393	0.8091	0.058	0.0579	0.6944	0.7512	9.0128
1013.4	0.539592	0.8094	0.058	0.0579	0.6944	0.7515	9.0164
1013.6	0.539791	0.8097	0.058	0.0579	0.6944	0.7518	9.0200

1013.8	0.53999	0.8100	0.058	0.0579	0.6944	0.7521	9.0236
1014	0.54019	0.8103	0.058	0.0579	0.6944	0.7524	9.0272
1014.2	0.540389	0.8106	0.058	0.0579	0.6944	0.7527	9.0308
1014.4	0.540589	0.8109	0.058	0.0579	0.6944	0.7530	9.0344
1014.6	0.540789	0.8112	0.058	0.0579	0.6944	0.7533	9.0380
1014.8	0.540989	0.8115	0.058	0.0579	0.6944	0.7536	9.0416
1015	0.541189	0.8118	0.058	0.0579	0.6944	0.7539	9.0452
1015.2	0.54139	0.8121	0.058	0.0579	0.6944	0.7542	9.0488
1015.4	0.54159	0.8124	0.058	0.0579	0.6944	0.7545	9.0524
1015.6	0.541791	0.8127	0.058	0.0579	0.6944	0.7548	9.0560
1015.8	0.541991	0.8130	0.058	0.0579	0.6944	0.7551	9.0596
1016	0.542192	0.8133	0.058	0.0579	0.6944	0.7554	9.0632
1016.2	0.542393	0.8136	0.058	0.0579	0.6944	0.7557	9.0668
1016.4	0.542595	0.8139	0.058	0.0579	0.6944	0.7560	9.0704
1016.6	0.542796	0.8142	0.058	0.0579	0.6944	0.7563	9.0741
1016.8	0.542997	0.8145	0.058	0.0579	0.6944	0.7566	9.0777
1017	0.543199	0.8148	0.058	0.0579	0.6944	0.7569	9.0813
1017.2	0.5434	0.8151	0.058	0.0579	0.6944	0.7572	9.0849
1017.4	0.543602	0.8154	0.058	0.0579	0.6944	0.7575	9.0886
1017.6	0.543804	0.8157	0.058	0.0579	0.6944	0.7578	9.0922
1017.8	0.544006	0.8160	0.058	0.0579	0.6944	0.7581	9.0959
1018	0.544209	0.8163	0.058	0.0579	0.6944	0.7584	9.0995
1018.2	0.544411	0.8166	0.058	0.0579	0.6944	0.7587	9.1031
1018.4	0.544614	0.8169	0.058	0.0579	0.6944	0.7591	9.1068
1018.6	0.544816	0.8172	0.058	0.0579	0.6944	0.7594	9.1104
1018.8	0.545019	0.8175	0.058	0.0579	0.6944	0.7597	9.1141
1019	0.545222	0.8178	0.058	0.0579	0.6944	0.7600	9.1177
1019.2	0.545425	0.8181	0.058	0.0579	0.6944	0.7603	9.1214
1019.4	0.545629	0.8184	0.058	0.0579	0.6944	0.7606	9.1250
1019.6	0.545832	0.8187	0.058	0.0579	0.6944	0.7609	9.1287
1019.8	0.546036	0.8191	0.058	0.0579	0.6944	0.7612	9.1324
1020	0.546239	0.8194	0.058	0.0579	0.6944	0.7615	9.1360
1020.2	0.546443	0.8197	0.058	0.0579	0.6944	0.7618	9.1397
1020.4	0.546647	0.8200	0.058	0.0579	0.6944	0.7621	9.1434
1020.6	0.546851	0.8203	0.058	0.0579	0.6944	0.7624	9.1470
1020.8	0.547056	0.8206	0.058	0.0579	0.6944	0.7627	9.1507
1021	0.54726	0.8209	0.058	0.0579	0.6944	0.7630	9.1544
1021.2	0.547465	0.8212	0.058	0.0579	0.6944	0.7633	9.1581
1021.4	0.547669	0.8215	0.058	0.0579	0.6944	0.7636	9.1618
1021.6	0.547874	0.8218	0.058	0.0579	0.6944	0.7639	9.1654
1021.8	0.548079	0.8221	0.058	0.0579	0.6944	0.7642	9.1691
1022	0.548284	0.8224	0.058	0.0579	0.6944	0.7646	9.1728
1022.2	0.54849	0.8227	0.058	0.0579	0.6944	0.7649	9.1765
1022.4	0.548695	0.8230	0.058	0.0579	0.6944	0.7652	9.1802
1022.6	0.548901	0.8234	0.058	0.0579	0.6944	0.7655	9.1839
1022.8	0.549107	0.8237	0.058	0.0579	0.6944	0.7658	9.1876
1023	0.549312	0.8240	0.058	0.0579	0.6944	0.7661	9.1913

1023.2	0.549519	0.8243	0.058	0.0579	0.6944	0.7664	9.1950
1023.4	0.549725	0.8246	0.058	0.0579	0.6944	0.7667	9.1987
1023.6	0.549931	0.8249	0.058	0.0579	0.6944	0.7670	9.2025
1023.8	0.550138	0.8252	0.058	0.0579	0.6944	0.7673	9.2062
1024	0.550344	0.8255	0.058	0.0579	0.6944	0.7676	9.2099
1024.2	0.550551	0.8258	0.058	0.0579	0.6944	0.7680	9.2136
1024.4	0.550758	0.8261	0.058	0.0579	0.6944	0.7683	9.2173
1024.6	0.550965	0.8264	0.058	0.0579	0.6944	0.7686	9.2211
1024.8	0.551173	0.8268	0.058	0.0579	0.6944	0.7689	9.2248
1025	0.55138	0.8271	0.058	0.0579	0.6944	0.7692	9.2285
1025.2	0.551588	0.8274	0.058	0.0579	0.6944	0.7695	9.2323
1025.4	0.551795	0.8277	0.058	0.0579	0.6944	0.7698	9.2360
1025.6	0.552003	0.8280	0.058	0.0579	0.6944	0.7701	9.2397
1025.8	0.552211	0.8283	0.058	0.0579	0.6944	0.7704	9.2435
1026	0.552419	0.8286	0.058	0.0579	0.6944	0.7708	9.2472
1026.2	0.552628	0.8289	0.058	0.0579	0.6944	0.7711	9.2510
1026.4	0.552836	0.8293	0.058	0.0579	0.6944	0.7714	9.2547
1026.6	0.553045	0.8296	0.058	0.0579	0.6944	0.7717	9.2585
1026.8	0.553254	0.8299	0.058	0.0579	0.6944	0.7720	9.2622
1027	0.553463	0.8302	0.058	0.0579	0.6944	0.7723	9.2660
1027.2	0.553672	0.8305	0.058	0.0579	0.6944	0.7726	9.2698
1027.4	0.553881	0.8308	0.058	0.0579	0.6944	0.7730	9.2735
1027.6	0.554091	0.8311	0.058	0.0579	0.6944	0.7733	9.2773
1027.8	0.5543	0.8315	0.058	0.0579	0.6944	0.7736	9.2811
1028	0.55451	0.8318	0.058	0.0579	0.6944	0.7739	9.2848
1028.2	0.55472	0.8321	0.058	0.0579	0.6944	0.7742	9.2886
1028.4	0.55493	0.8324	0.058	0.0579	0.6944	0.7745	9.2924
1028.6	0.55514	0.8327	0.058	0.0579	0.6944	0.7748	9.2962
1028.8	0.555351	0.8330	0.058	0.0579	0.6944	0.7752	9.3000
1029	0.555561	0.8333	0.058	0.0579	0.6944	0.7755	9.3038
1029.2	0.555772	0.8337	0.058	0.0579	0.6944	0.7758	9.3076
1029.4	0.555983	0.8340	0.058	0.0579	0.6944	0.7761	9.3114
1029.6	0.556194	0.8343	0.058	0.0579	0.6944	0.7764	9.3151
1029.8	0.556405	0.8346	0.058	0.0579	0.6944	0.7767	9.3189
1030	0.556617	0.8349	0.058	0.0579	0.6944	0.7771	9.3228
1030.2	0.556828	0.8352	0.058	0.0579	0.6944	0.7774	9.3266
1030.4	0.55704	0.8356	0.058	0.0579	0.6944	0.7777	9.3304
1030.6	0.557252	0.8359	0.058	0.0579	0.6944	0.7780	9.3342
1030.8	0.557464	0.8362	0.058	0.0579	0.6944	0.7783	9.3380
1031	0.557676	0.8365	0.058	0.0579	0.6944	0.7786	9.3418
1031.2	0.557888	0.8368	0.058	0.0579	0.6944	0.7790	9.3456
1031.4	0.558101	0.8372	0.058	0.0579	0.6944	0.7793	9.3495
1031.6	0.558314	0.8375	0.058	0.0579	0.6944	0.7796	9.3533
1031.8	0.558526	0.8378	0.058	0.0579	0.6944	0.7799	9.3571
1032	0.558739	0.8381	0.058	0.0579	0.6944	0.7802	9.3609
1032.2	0.558953	0.8384	0.058	0.0579	0.6944	0.7806	9.3648
1032.4	0.559166	0.8387	0.058	0.0579	0.6944	0.7809	9.3686

1032.6	0.55938	0.8391	0.058	0.0579	0.6944	0.7812	9.3725
1032.8	0.559593	0.8394	0.058	0.0579	0.6944	0.7815	9.3763
1033	0.559807	0.8397	0.058	0.0579	0.6944	0.7818	9.3802
1033.2	0.560021	0.8400	0.058	0.0579	0.6944	0.7822	9.3840
1033.4	0.560235	0.8404	0.058	0.0579	0.6944	0.7825	9.3879
1033.6	0.56045	0.8407	0.058	0.0579	0.6944	0.7828	9.3917
1033.8	0.560664	0.8410	0.058	0.0579	0.6944	0.7831	9.3956
1034	0.560879	0.8413	0.058	0.0579	0.6944	0.7834	9.3994
1034.2	0.561094	0.8416	0.058	0.0579	0.6944	0.7838	9.4033
1034.4	0.561309	0.8420	0.058	0.0579	0.6944	0.7841	9.4072
1034.6	0.561524	0.8423	0.058	0.0579	0.6944	0.7844	9.4111
1034.8	0.56174	0.8426	0.058	0.0579	0.6944	0.7847	9.4149
1035	0.561955	0.8429	0.058	0.0579	0.6944	0.7851	9.4188
1035.2	0.562171	0.8433	0.058	0.0579	0.6944	0.7854	9.4227
1035.4	0.562387	0.8436	0.058	0.0579	0.6944	0.7857	9.4266
1035.6	0.562603	0.8439	0.058	0.0579	0.6944	0.7860	9.4305
1035.8	0.562819	0.8442	0.058	0.0579	0.6944	0.7864	9.4344
1036	0.563036	0.8446	0.058	0.0579	0.6944	0.7867	9.4383
1036.2	0.563252	0.8449	0.058	0.0579	0.6944	0.7870	9.4421
1036.4	0.563469	0.8452	0.058	0.0579	0.6944	0.7873	9.4460
1036.6	0.563686	0.8455	0.058	0.0579	0.6944	0.7877	9.4500
1036.8	0.563903	0.8459	0.058	0.0579	0.6944	0.7880	9.4539
1037	0.564121	0.8462	0.058	0.0579	0.6944	0.7883	9.4578
1037.2	0.564338	0.8465	0.058	0.0579	0.6944	0.7886	9.4617
1037.4	0.564556	0.8468	0.058	0.0579	0.6944	0.7890	9.4656
1037.6	0.564774	0.8472	0.058	0.0579	0.6944	0.7893	9.4695
1037.8	0.564992	0.8475	0.058	0.0579	0.6944	0.7896	9.4734
1038	0.56521	0.8478	0.058	0.0579	0.6944	0.7899	9.4774
1038.2	0.565428	0.8481	0.058	0.0579	0.6944	0.7903	9.4813
1038.4	0.565647	0.8485	0.058	0.0579	0.6944	0.7906	9.4852
1038.6	0.565866	0.8488	0.058	0.0579	0.6944	0.7909	9.4892
1038.8	0.566085	0.8491	0.058	0.0579	0.6944	0.7913	9.4931
1039	0.566304	0.8495	0.058	0.0579	0.6944	0.7916	9.4971
1039.2	0.566523	0.8498	0.058	0.0579	0.6944	0.7919	9.5010
1039.4	0.566743	0.8501	0.058	0.0579	0.6944	0.7922	9.5049
1039.6	0.566962	0.8504	0.058	0.0579	0.6944	0.7926	9.5089
1039.8	0.567182	0.8508	0.058	0.0579	0.6944	0.7929	9.5129
1040	0.567402	0.8511	0.058	0.0579	0.6944	0.7932	9.5168
1040.2	0.567622	0.8514	0.058	0.0579	0.6944	0.7936	9.5208
1040.4	0.567843	0.8518	0.058	0.0579	0.6944	0.7939	9.5247
1040.6	0.568063	0.8521	0.058	0.0579	0.6944	0.7942	9.5287
1040.8	0.568284	0.8524	0.058	0.0579	0.6944	0.7946	9.5327
1041	0.568505	0.8528	0.058	0.0579	0.6944	0.7949	9.5367
1041.2	0.568726	0.8531	0.058	0.0579	0.6944	0.7952	9.5406
1041.4	0.568948	0.8534	0.058	0.0579	0.6944	0.7956	9.5446
1041.6	0.569169	0.8538	0.058	0.0579	0.6944	0.7959	9.5486
1041.8	0.569391	0.8541	0.058	0.0579	0.6944	0.7962	9.5526

1042	0.569613	0.8544	0.058	0.0579	0.6944	0.7965	9.5566
1042.2	0.569835	0.8548	0.058	0.0579	0.6944	0.7969	9.5606
1042.4	0.570057	0.8551	0.058	0.0579	0.6944	0.7972	9.5646
1042.6	0.57028	0.8554	0.058	0.0579	0.6944	0.7975	9.5686
1042.8	0.570502	0.8558	0.058	0.0579	0.6944	0.7979	9.5726
1043	0.570725	0.8561	0.058	0.0579	0.6944	0.7982	9.5766
1043.2	0.570948	0.8564	0.058	0.0579	0.6944	0.7986	9.5806
1043.4	0.571172	0.8568	0.058	0.0579	0.6944	0.7989	9.5846
1043.6	0.571395	0.8571	0.058	0.0579	0.6944	0.7992	9.5887
1043.8	0.571619	0.8574	0.058	0.0579	0.6944	0.7996	9.5927
1044	0.571842	0.8578	0.058	0.0579	0.6944	0.7999	9.5967
1044.2	0.572067	0.8581	0.058	0.0579	0.6944	0.8002	9.6007
1044.4	0.572291	0.8584	0.058	0.0579	0.6944	0.8006	9.6048
1044.6	0.572515	0.8588	0.058	0.0579	0.6944	0.8009	9.6088
1044.8	0.57274	0.8591	0.058	0.0579	0.6944	0.8012	9.6129
1045	0.572965	0.8594	0.058	0.0579	0.6944	0.8016	9.6169
1045.2	0.57319	0.8598	0.058	0.0579	0.6944	0.8019	9.6209
1045.4	0.573415	0.8601	0.058	0.0579	0.6944	0.8023	9.6250
1045.6	0.57364	0.8605	0.058	0.0579	0.6944	0.8026	9.6291
1045.8	0.573866	0.8608	0.058	0.0579	0.6944	0.8029	9.6331
1046	0.574092	0.8611	0.058	0.0579	0.6944	0.8033	9.6372
1046.2	0.574318	0.8615	0.058	0.0579	0.6944	0.8036	9.6412
1046.4	0.574544	0.8618	0.058	0.0579	0.6944	0.8039	9.6453
1046.6	0.57477	0.8622	0.058	0.0579	0.6944	0.8043	9.6494
1046.8	0.574997	0.8625	0.058	0.0579	0.6944	0.8046	9.6535
1047	0.575224	0.8628	0.058	0.0579	0.6944	0.8050	9.6575
1047.2	0.575451	0.8632	0.058	0.0579	0.6944	0.8053	9.6616
1047.4	0.575678	0.8635	0.058	0.0579	0.6944	0.8056	9.6657
1047.6	0.575905	0.8639	0.058	0.0579	0.6944	0.8060	9.6698
1047.8	0.576133	0.8642	0.058	0.0579	0.6944	0.8063	9.6739
1048	0.576361	0.8645	0.058	0.0579	0.6944	0.8067	9.6780
1048.2	0.576589	0.8649	0.058	0.0579	0.6944	0.8070	9.6821
1048.4	0.576817	0.8652	0.058	0.0579	0.6944	0.8074	9.6862
1048.6	0.577046	0.8656	0.058	0.0579	0.6944	0.8077	9.6903
1048.8	0.577274	0.8659	0.058	0.0579	0.6944	0.8080	9.6944
1049	0.577503	0.8663	0.058	0.0579	0.6944	0.8084	9.6986
1049.2	0.577732	0.8666	0.058	0.0579	0.6944	0.8087	9.7027
1049.4	0.577962	0.8669	0.058	0.0579	0.6944	0.8091	9.7068
1049.6	0.578191	0.8673	0.058	0.0579	0.6944	0.8094	9.7109
1049.8	0.578421	0.8676	0.058	0.0579	0.6944	0.8098	9.7151
1050	0.578651	0.8680	0.058	0.0579	0.6944	0.8101	9.7192
1050.2	0.578881	0.8683	0.058	0.0579	0.6944	0.8105	9.7233
1050.4	0.579111	0.8687	0.058	0.0579	0.6944	0.8108	9.7275
1050.6	0.579342	0.8690	0.058	0.0579	0.6944	0.8111	9.7316
1050.8	0.579572	0.8694	0.058	0.0579	0.6944	0.8115	9.7358
1051	0.579803	0.8697	0.058	0.0579	0.6944	0.8118	9.7399
1051.2	0.580035	0.8701	0.058	0.0579	0.6944	0.8122	9.7441

1051.4	0.580266	0.8704	0.058	0.0579	0.6944	0.8125	9.7483
1051.6	0.580498	0.8707	0.058	0.0579	0.6944	0.8129	9.7524
1051.8	0.58073	0.8711	0.058	0.0579	0.6944	0.8132	9.7566
1052	0.580962	0.8714	0.058	0.0579	0.6944	0.8136	9.7608
1052.2	0.581194	0.8718	0.058	0.0579	0.6944	0.8139	9.7650
1052.4	0.581426	0.8721	0.058	0.0579	0.6944	0.8143	9.7691
1052.6	0.581659	0.8725	0.058	0.0579	0.6944	0.8146	9.7733
1052.8	0.581892	0.8728	0.058	0.0579	0.6944	0.8150	9.7775
1053	0.582125	0.8732	0.058	0.0579	0.6944	0.8153	9.7817
1053.2	0.582359	0.8735	0.058	0.0579	0.6944	0.8157	9.7859
1053.4	0.582592	0.8739	0.058	0.0579	0.6944	0.8160	9.7901
1053.6	0.582826	0.8742	0.058	0.0579	0.6944	0.8164	9.7943
1053.8	0.58306	0.8746	0.058	0.0579	0.6944	0.8167	9.7985
1054	0.583294	0.8749	0.058	0.0579	0.6944	0.8171	9.8027
1054.2	0.583529	0.8753	0.058	0.0579	0.6944	0.8174	9.8070
1054.4	0.583764	0.8756	0.058	0.0579	0.6944	0.8178	9.8112
1054.6	0.583999	0.8760	0.058	0.0579	0.6944	0.8181	9.8154
1054.8	0.584234	0.8764	0.058	0.0579	0.6944	0.8185	9.8196
1055	0.584469	0.8767	0.058	0.0579	0.6944	0.8188	9.8239
1055.2	0.584705	0.8771	0.058	0.0579	0.6944	0.8192	9.8281
1055.4	0.584941	0.8774	0.058	0.0579	0.6944	0.8195	9.8324
1055.6	0.585177	0.8778	0.058	0.0579	0.6944	0.8199	9.8366
1055.8	0.585413	0.8781	0.058	0.0579	0.6944	0.8202	9.8409
1056	0.58565	0.8785	0.058	0.0579	0.6944	0.8206	9.8451
1056.2	0.585887	0.8788	0.058	0.0579	0.6944	0.8210	9.8494
1056.4	0.586124	0.8792	0.058	0.0579	0.6944	0.8213	9.8536
1056.6	0.586361	0.8795	0.058	0.0579	0.6944	0.8217	9.8579
1056.8	0.586598	0.8799	0.058	0.0579	0.6944	0.8220	9.8622
1057	0.586836	0.8803	0.058	0.0579	0.6944	0.8224	9.8665
1057.2	0.587074	0.8806	0.058	0.0579	0.6944	0.8227	9.8707
1057.4	0.587312	0.8810	0.058	0.0579	0.6944	0.8231	9.8750
1057.6	0.587551	0.8813	0.058	0.0579	0.6944	0.8235	9.8793
1057.8	0.587789	0.8817	0.058	0.0579	0.6944	0.8238	9.8836
1058	0.588028	0.8820	0.058	0.0579	0.6944	0.8242	9.8879
1058.2	0.588267	0.8824	0.058	0.0579	0.6944	0.8245	9.8922
1058.4	0.588507	0.8828	0.058	0.0579	0.6944	0.8249	9.8965
1058.6	0.588746	0.8831	0.058	0.0579	0.6944	0.8252	9.9008
1058.8	0.588986	0.8835	0.058	0.0579	0.6944	0.8256	9.9052
1059	0.589226	0.8838	0.058	0.0579	0.6944	0.8260	9.9095
1059.2	0.589467	0.8842	0.058	0.0579	0.6944	0.8263	9.9138
1059.4	0.589707	0.8846	0.058	0.0579	0.6944	0.8267	9.9181
1059.6	0.589948	0.8849	0.058	0.0579	0.6944	0.8271	9.9225
1059.8	0.590189	0.8853	0.058	0.0579	0.6944	0.8274	9.9268
1060	0.590431	0.8856	0.058	0.0579	0.6944	0.8278	9.9311
1060.2	0.590672	0.8860	0.058	0.0579	0.6944	0.8281	9.9355
1060.4	0.590914	0.8864	0.058	0.0579	0.6944	0.8285	9.9398
1060.6	0.591156	0.8867	0.058	0.0579	0.6944	0.8289	9.9442

1060.8	0.591398	0.8871	0.058	0.0579	0.6944	0.8292	9.9485
1061	0.591641	0.8875	0.058	0.0579	0.6944	0.8296	9.9529
1061.2	0.591884	0.8878	0.058	0.0579	0.6944	0.8300	9.9573
1061.4	0.592127	0.8882	0.058	0.0579	0.6944	0.8303	9.9617
1061.6	0.59237	0.8886	0.058	0.0579	0.6944	0.8307	9.9660
1061.8	0.592614	0.8889	0.058	0.0579	0.6944	0.8311	9.9704
1062	0.592858	0.8893	0.058	0.0579	0.6944	0.8314	9.9748
1062.2	0.593102	0.8897	0.058	0.0579	0.6944	0.8318	9.9792
1062.4	0.593346	0.8900	0.058	0.0579	0.6944	0.8321	9.9836
1062.6	0.593591	0.8904	0.058	0.0579	0.6944	0.8325	9.9880
1062.8	0.593836	0.8908	0.058	0.0579	0.6944	0.8329	9.9924
1063	0.594081	0.8911	0.058	0.0579	0.6944	0.8333	9.9968
1063.2	0.594326	0.8915	0.058	0.0579	0.6944	0.8336	10.0012
1063.4	0.594572	0.8919	0.058	0.0579	0.6944	0.8340	10.0056
1063.6	0.594818	0.8922	0.058	0.0579	0.6944	0.8344	10.0101
1063.8	0.595064	0.8926	0.058	0.0579	0.6944	0.8347	10.0145
1064	0.59531	0.8930	0.058	0.0579	0.6944	0.8351	10.0189
1064.2	0.595557	0.8933	0.058	0.0579	0.6944	0.8355	10.0234
1064.4	0.595804	0.8937	0.058	0.0579	0.6944	0.8358	10.0278
1064.6	0.596051	0.8941	0.058	0.0579	0.6944	0.8362	10.0323
1064.8	0.596299	0.8944	0.058	0.0579	0.6944	0.8366	10.0367
1065	0.596546	0.8948	0.058	0.0579	0.6944	0.8369	10.0412
1065.2	0.596794	0.8952	0.058	0.0579	0.6944	0.8373	10.0456
1065.4	0.597043	0.8956	0.058	0.0579	0.6944	0.8377	10.0501
1065.6	0.597291	0.8959	0.058	0.0579	0.6944	0.8381	10.0546
1065.8	0.59754	0.8963	0.058	0.0579	0.6944	0.8384	10.0590
1066	0.597789	0.8967	0.058	0.0579	0.6944	0.8388	10.0635
1066.2	0.598039	0.8971	0.058	0.0579	0.6944	0.8392	10.0680
1066.4	0.598288	0.8974	0.058	0.0579	0.6944	0.8396	10.0725
1066.6	0.598538	0.8978	0.058	0.0579	0.6944	0.8399	10.0770
1066.8	0.598788	0.8982	0.058	0.0579	0.6944	0.8403	10.0815
1067	0.599039	0.8986	0.058	0.0579	0.6944	0.8407	10.0860
1067.2	0.59929	0.8989	0.058	0.0579	0.6944	0.8411	10.0905
1067.4	0.599541	0.8993	0.058	0.0579	0.6944	0.8414	10.0950
1067.6	0.599792	0.8997	0.058	0.0579	0.6944	0.8418	10.0995
1067.8	0.600043	0.9001	0.058	0.0579	0.6944	0.8422	10.1041
1068	0.600295	0.9004	0.058	0.0579	0.6944	0.8426	10.1086
1068.2	0.600547	0.9008	0.058	0.0579	0.6944	0.8430	10.1131
1068.4	0.6008	0.9012	0.058	0.0579	0.6944	0.8433	10.1177
1068.6	0.601053	0.9016	0.058	0.0579	0.6944	0.8437	10.1222
1068.8	0.601306	0.9020	0.058	0.0579	0.6944	0.8441	10.1268
1069	0.601559	0.9023	0.058	0.0579	0.6944	0.8445	10.1313
1069.2	0.601813	0.9027	0.058	0.0579	0.6944	0.8448	10.1359
1069.4	0.602066	0.9031	0.058	0.0579	0.6944	0.8452	10.1405
1069.6	0.602321	0.9035	0.058	0.0579	0.6944	0.8456	10.1450
1069.8	0.602575	0.9039	0.058	0.0579	0.6944	0.8460	10.1496
1070	0.60283	0.9042	0.058	0.0579	0.6944	0.8464	10.1542

1070.2	0.603085	0.9046	0.058	0.0579	0.6944	0.8468	10.1588
1070.4	0.60334	0.9050	0.058	0.0579	0.6944	0.8471	10.1634
1070.6	0.603596	0.9054	0.058	0.0579	0.6944	0.8475	10.1680
1070.8	0.603852	0.9058	0.058	0.0579	0.6944	0.8479	10.1726
1071	0.604108	0.9062	0.058	0.0579	0.6944	0.8483	10.1772
1071.2	0.604364	0.9065	0.058	0.0579	0.6944	0.8487	10.1818
1071.4	0.604621	0.9069	0.058	0.0579	0.6944	0.8491	10.1864
1071.6	0.604878	0.9073	0.058	0.0579	0.6944	0.8494	10.1910
1071.8	0.605136	0.9077	0.058	0.0579	0.6944	0.8498	10.1957
1072	0.605393	0.9081	0.058	0.0579	0.6944	0.8502	10.2003
1072.2	0.605651	0.9085	0.058	0.0579	0.6944	0.8506	10.2050
1072.4	0.60591	0.9089	0.058	0.0579	0.6944	0.8510	10.2096
1072.6	0.606168	0.9093	0.058	0.0579	0.6944	0.8514	10.2143
1072.8	0.606427	0.9096	0.058	0.0579	0.6944	0.8518	10.2189
1073	0.606686	0.9100	0.058	0.0579	0.6944	0.8522	10.2236
1073.2	0.606946	0.9104	0.058	0.0579	0.6944	0.8525	10.2282
1073.4	0.607206	0.9108	0.058	0.0579	0.6944	0.8529	10.2329
1073.6	0.607466	0.9112	0.058	0.0579	0.6944	0.8533	10.2376
1073.8	0.607726	0.9116	0.058	0.0579	0.6944	0.8537	10.2423
1074	0.607987	0.9120	0.058	0.0579	0.6944	0.8541	10.2470
1074.2	0.608248	0.9124	0.058	0.0579	0.6944	0.8545	10.2517
1074.4	0.60851	0.9128	0.058	0.0579	0.6944	0.8549	10.2564
1074.6	0.608771	0.9132	0.058	0.0579	0.6944	0.8553	10.2611
1074.8	0.609033	0.9136	0.058	0.0579	0.6944	0.8557	10.2658
1075	0.609296	0.9139	0.058	0.0579	0.6944	0.8561	10.2705
1075.2	0.609558	0.9143	0.058	0.0579	0.6944	0.8565	10.2752
1075.4	0.609821	0.9147	0.058	0.0579	0.6944	0.8569	10.2800
1075.6	0.610085	0.9151	0.058	0.0579	0.6944	0.8573	10.2847
1075.8	0.610348	0.9155	0.058	0.0579	0.6944	0.8577	10.2895
1076	0.610612	0.9159	0.058	0.0579	0.6944	0.8580	10.2942
1076.2	0.610877	0.9163	0.058	0.0579	0.6944	0.8584	10.2990
1076.4	0.611141	0.9167	0.058	0.0579	0.6944	0.8588	10.3037
1076.6	0.611406	0.9171	0.058	0.0579	0.6944	0.8592	10.3085
1076.8	0.611672	0.9175	0.058	0.0579	0.6944	0.8596	10.3133
1077	0.611937	0.9179	0.058	0.0579	0.6944	0.8600	10.3180
1077.2	0.612203	0.9183	0.058	0.0579	0.6944	0.8604	10.3228
1077.4	0.61247	0.9187	0.058	0.0579	0.6944	0.8608	10.3276
1077.6	0.612736	0.9191	0.058	0.0579	0.6944	0.8612	10.3324
1077.8	0.613003	0.9195	0.058	0.0579	0.6944	0.8616	10.3372
1078	0.61327	0.9199	0.058	0.0579	0.6944	0.8620	10.3420
1078.2	0.613538	0.9203	0.058	0.0579	0.6944	0.8624	10.3468
1078.4	0.613806	0.9207	0.058	0.0579	0.6944	0.8628	10.3517
1078.6	0.614074	0.9211	0.058	0.0579	0.6944	0.8632	10.3565
1078.8	0.614343	0.9215	0.058	0.0579	0.6944	0.8636	10.3613
1079	0.614612	0.9219	0.058	0.0579	0.6944	0.8640	10.3662
1079.2	0.614882	0.9223	0.058	0.0579	0.6944	0.8645	10.3710
1079.4	0.615151	0.9227	0.058	0.0579	0.6944	0.8649	10.3759

1079.6	0.615421	0.9231	0.058	0.0579	0.6944	0.8653	10.3807
1079.8	0.615692	0.9235	0.058	0.0579	0.6944	0.8657	10.3856
1080	0.615962	0.9239	0.058	0.0579	0.6944	0.8661	10.3904
1080.2	0.616234	0.9244	0.058	0.0579	0.6944	0.8665	10.3953
1080.4	0.616505	0.9248	0.058	0.0579	0.6944	0.8669	10.4002
1080.6	0.616777	0.9252	0.058	0.0579	0.6944	0.8673	10.4051
1080.8	0.617049	0.9256	0.058	0.0579	0.6944	0.8677	10.4100
1081	0.617322	0.9260	0.058	0.0579	0.6944	0.8681	10.4149
1081.2	0.617595	0.9264	0.058	0.0579	0.6944	0.8685	10.4198
1081.4	0.617868	0.9268	0.058	0.0579	0.6944	0.8689	10.4247
1081.6	0.618141	0.9272	0.058	0.0579	0.6944	0.8693	10.4296
1081.8	0.618415	0.9276	0.058	0.0579	0.6944	0.8698	10.4346
1082	0.61869	0.9280	0.058	0.0579	0.6944	0.8702	10.4395
1082.2	0.618965	0.9284	0.058	0.0579	0.6944	0.8706	10.4444
1082.4	0.61924	0.9289	0.058	0.0579	0.6944	0.8710	10.4494
1082.6	0.619515	0.9293	0.058	0.0579	0.6944	0.8714	10.4543
1082.8	0.619791	0.9297	0.058	0.0579	0.6944	0.8718	10.4593
1083	0.620067	0.9301	0.058	0.0579	0.6944	0.8722	10.4643
1083.2	0.620344	0.9305	0.058	0.0579	0.6944	0.8726	10.4693
1083.4	0.620621	0.9309	0.058	0.0579	0.6944	0.8731	10.4742
1083.6	0.620898	0.9313	0.058	0.0579	0.6944	0.8735	10.4792
1083.8	0.621176	0.9318	0.058	0.0579	0.6944	0.8739	10.4842
1084	0.621454	0.9322	0.058	0.0579	0.6944	0.8743	10.4892
1084.2	0.621733	0.9326	0.058	0.0579	0.6944	0.8747	10.4942
1084.4	0.622012	0.9330	0.058	0.0579	0.6944	0.8751	10.4993
1084.6	0.622291	0.9334	0.058	0.0579	0.6944	0.8756	10.5043
1084.8	0.62257	0.9339	0.058	0.0579	0.6944	0.8760	10.5093
1085	0.622851	0.9343	0.058	0.0579	0.6944	0.8764	10.5143
1085.2	0.623131	0.9347	0.058	0.0579	0.6944	0.8768	10.5194
1085.4	0.623412	0.9351	0.058	0.0579	0.6944	0.8772	10.5244
1085.6	0.623693	0.9355	0.058	0.0579	0.6944	0.8777	10.5295
1085.8	0.623975	0.9360	0.058	0.0579	0.6944	0.8781	10.5346
1086	0.624257	0.9364	0.058	0.0579	0.6944	0.8785	10.5396
1086.2	0.624539	0.9368	0.058	0.0579	0.6944	0.8789	10.5447
1086.4	0.624822	0.9372	0.058	0.0579	0.6944	0.8794	10.5498
1086.6	0.625105	0.9377	0.058	0.0579	0.6944	0.8798	10.5549
1086.8	0.625389	0.9381	0.058	0.0579	0.6944	0.8802	10.5600
1087	0.625673	0.9385	0.058	0.0579	0.6944	0.8806	10.5651
1087.2	0.625958	0.9389	0.058	0.0579	0.6944	0.8811	10.5702
1087.4	0.626243	0.9394	0.058	0.0579	0.6944	0.8815	10.5754
1087.6	0.626528	0.9398	0.058	0.0579	0.6944	0.8819	10.5805
1087.8	0.626814	0.9402	0.058	0.0579	0.6944	0.8824	10.5856
1088	0.6271	0.9406	0.058	0.0579	0.6944	0.8828	10.5908
1088.2	0.627386	0.9411	0.058	0.0579	0.6944	0.8832	10.5959
1088.4	0.627673	0.9415	0.058	0.0579	0.6944	0.8836	10.6011
1088.6	0.627961	0.9419	0.058	0.0579	0.6944	0.8841	10.6063
1088.8	0.628249	0.9424	0.058	0.0579	0.6944	0.8845	10.6114

1089	0.628537	0.9428	0.058	0.0579	0.6944	0.8849	10.6166
1089.2	0.628826	0.9432	0.058	0.0579	0.6944	0.8854	10.6218
1089.4	0.629115	0.9437	0.058	0.0579	0.6944	0.8858	10.6270
1089.6	0.629404	0.9441	0.058	0.0579	0.6944	0.8862	10.6322
1089.8	0.629694	0.9445	0.058	0.0579	0.6944	0.8867	10.6374
1090	0.629985	0.9450	0.058	0.0579	0.6944	0.8871	10.6427
1090.2	0.630276	0.9454	0.058	0.0579	0.6944	0.8875	10.6479
1090.4	0.630567	0.9459	0.058	0.0579	0.6944	0.8880	10.6531
1090.6	0.630859	0.9463	0.058	0.0579	0.6944	0.8884	10.6584
1090.8	0.631151	0.9467	0.058	0.0579	0.6944	0.8889	10.6636
1091	0.631444	0.9472	0.058	0.0579	0.6944	0.8893	10.6689
1091.2	0.631737	0.9476	0.058	0.0579	0.6944	0.8897	10.6742
1091.4	0.63203	0.9480	0.058	0.0579	0.6944	0.8902	10.6795
1091.6	0.632324	0.9485	0.058	0.0579	0.6944	0.8906	10.6847
1091.8	0.632619	0.9489	0.058	0.0579	0.6944	0.8911	10.6900
1092	0.632914	0.9494	0.058	0.0579	0.6944	0.8915	10.6954
1092.2	0.633209	0.9498	0.058	0.0579	0.6944	0.8919	10.7007
1092.4	0.633505	0.9503	0.058	0.0579	0.6944	0.8924	10.7060
1092.6	0.633802	0.9507	0.058	0.0579	0.6944	0.8928	10.7113
1092.8	0.634098	0.9511	0.058	0.0579	0.6944	0.8933	10.7167
1093	0.634396	0.9516	0.058	0.0579	0.6944	0.8937	10.7220
1093.2	0.634693	0.9520	0.058	0.0579	0.6944	0.8942	10.7274
1093.4	0.634992	0.9525	0.058	0.0579	0.6944	0.8946	10.7327
1093.6	0.63529	0.9529	0.058	0.0579	0.6944	0.8951	10.7381
1093.8	0.63559	0.9534	0.058	0.0579	0.6944	0.8955	10.7435
1094	0.635889	0.9538	0.058	0.0579	0.6944	0.8960	10.7489
1094.2	0.636189	0.9543	0.058	0.0579	0.6944	0.8964	10.7543
1094.4	0.63649	0.9547	0.058	0.0579	0.6944	0.8969	10.7597
1094.6	0.636791	0.9552	0.058	0.0579	0.6944	0.8973	10.7651
1094.8	0.637093	0.9556	0.058	0.0579	0.6944	0.8978	10.7705
1095	0.637395	0.9561	0.058	0.0579	0.6944	0.8982	10.7759
1095.2	0.637698	0.9565	0.058	0.0579	0.6944	0.8987	10.7814
1095.4	0.638001	0.9570	0.058	0.0579	0.6944	0.8991	10.7868
1095.6	0.638304	0.9575	0.058	0.0579	0.6944	0.8996	10.7923
1095.8	0.638609	0.9579	0.058	0.0579	0.6944	0.9000	10.7978
1096	0.638913	0.9584	0.058	0.0579	0.6944	0.9005	10.8033
1096.2	0.639218	0.9588	0.058	0.0579	0.6944	0.9010	10.8087
1096.4	0.639524	0.9593	0.058	0.0579	0.6944	0.9014	10.8142
1096.6	0.63983	0.9597	0.058	0.0579	0.6944	0.9019	10.8197
1096.8	0.640137	0.9602	0.058	0.0579	0.6944	0.9023	10.8253
1097	0.640444	0.9607	0.058	0.0579	0.6944	0.9028	10.8308
1097.2	0.640752	0.9611	0.058	0.0579	0.6944	0.9033	10.8363
1097.4	0.64106	0.9616	0.058	0.0579	0.6944	0.9037	10.8419
1097.6	0.641369	0.9621	0.058	0.0579	0.6944	0.9042	10.8474
1097.8	0.641679	0.9625	0.058	0.0579	0.6944	0.9046	10.8530
1098	0.641988	0.9630	0.058	0.0579	0.6944	0.9051	10.8586
1098.2	0.642299	0.9634	0.058	0.0579	0.6944	0.9056	10.8641

1098.4	0.64261	0.9639	0.058	0.0579	0.6944	0.9060	10.8697
1098.6	0.642921	0.9644	0.058	0.0579	0.6944	0.9065	10.8753
1098.8	0.643233	0.9649	0.058	0.0579	0.6944	0.9070	10.8809
1099	0.643546	0.9653	0.058	0.0579	0.6944	0.9074	10.8866
1099.2	0.643859	0.9658	0.058	0.0579	0.6944	0.9079	10.8922
1099.4	0.644173	0.9663	0.058	0.0579	0.6944	0.9084	10.8978
1099.6	0.644487	0.9667	0.058	0.0579	0.6944	0.9089	10.9035
1099.8	0.644802	0.9672	0.058	0.0579	0.6944	0.9093	10.9092
1100	0.645118	0.9677	0.058	0.0579	0.6944	0.9098	10.9148
1100.2	0.645434	0.9682	0.058	0.0579	0.6944	0.9103	10.9205
1100.4	0.64575	0.9686	0.058	0.0579	0.6944	0.9108	10.9262
1100.6	0.646067	0.9691	0.058	0.0579	0.6944	0.9112	10.9319
1100.8	0.646385	0.9696	0.058	0.0579	0.6944	0.9117	10.9376
1101	0.646703	0.9701	0.058	0.0579	0.6944	0.9122	10.9434
1101.2	0.647022	0.9705	0.058	0.0579	0.6944	0.9127	10.9491
1101.4	0.647342	0.9710	0.058	0.0579	0.6944	0.9131	10.9548
1101.6	0.647662	0.9715	0.058	0.0579	0.6944	0.9136	10.9606
1101.8	0.647983	0.9720	0.058	0.0579	0.6944	0.9141	10.9664
1102	0.648304	0.9725	0.058	0.0579	0.6944	0.9146	10.9721
1102.2	0.648626	0.9729	0.058	0.0579	0.6944	0.9151	10.9779
1102.4	0.648948	0.9734	0.058	0.0579	0.6944	0.9156	10.9837
1102.6	0.649271	0.9739	0.058	0.0579	0.6944	0.9160	10.9895
1102.8	0.649595	0.9744	0.058	0.0579	0.6944	0.9165	10.9954
1103	0.64992	0.9749	0.058	0.0579	0.6944	0.9170	11.0012
1103.2	0.650245	0.9754	0.058	0.0579	0.6944	0.9175	11.0070
1103.4	0.65057	0.9759	0.058	0.0579	0.6944	0.9180	11.0129
1103.6	0.650896	0.9763	0.058	0.0579	0.6944	0.9185	11.0188
1103.8	0.651223	0.9768	0.058	0.0579	0.6944	0.9190	11.0246
1104	0.651551	0.9773	0.058	0.0579	0.6944	0.9195	11.0305
1104.2	0.651879	0.9778	0.058	0.0579	0.6944	0.9199	11.0364
1104.4	0.652208	0.9783	0.058	0.0579	0.6944	0.9204	11.0423
1104.6	0.652537	0.9788	0.058	0.0579	0.6944	0.9209	11.0483
1104.8	0.652867	0.9793	0.058	0.0579	0.6944	0.9214	11.0542
1105	0.653198	0.9798	0.058	0.0579	0.6944	0.9219	11.0601
1105.2	0.653529	0.9803	0.058	0.0579	0.6944	0.9224	11.0661
1105.4	0.653861	0.9808	0.058	0.0579	0.6944	0.9229	11.0721
1105.6	0.654194	0.9813	0.058	0.0579	0.6944	0.9234	11.0781
1105.8	0.654528	0.9818	0.058	0.0579	0.6944	0.9239	11.0841
1106	0.654862	0.9823	0.058	0.0579	0.6944	0.9244	11.0901
1106.2	0.655197	0.9828	0.058	0.0579	0.6944	0.9249	11.0961
1106.4	0.655532	0.9833	0.058	0.0579	0.6944	0.9254	11.1021
1106.6	0.655868	0.9838	0.058	0.0579	0.6944	0.9259	11.1082
1106.8	0.656205	0.9843	0.058	0.0579	0.6944	0.9264	11.1142
1107	0.656543	0.9848	0.058	0.0579	0.6944	0.9269	11.1203
1107.2	0.656881	0.9853	0.058	0.0579	0.6944	0.9275	11.1264
1107.4	0.65722	0.9858	0.058	0.0579	0.6944	0.9280	11.1325
1107.6	0.65756	0.9863	0.058	0.0579	0.6944	0.9285	11.1386

1107.8	0.6579	0.9869	0.058	0.0579	0.6944	0.9290	11.1447
1108	0.658241	0.9874	0.058	0.0579	0.6944	0.9295	11.1508
1108.2	0.658583	0.9879	0.058	0.0579	0.6944	0.9300	11.1570
1108.4	0.658926	0.9884	0.058	0.0579	0.6944	0.9305	11.1631
1108.6	0.659269	0.9889	0.058	0.0579	0.6944	0.9310	11.1693
1108.8	0.659613	0.9894	0.058	0.0579	0.6944	0.9315	11.1755
1109	0.659958	0.9899	0.058	0.0579	0.6944	0.9321	11.1817
1109.2	0.660304	0.9905	0.058	0.0579	0.6944	0.9326	11.1879
1109.4	0.66065	0.9910	0.058	0.0579	0.6944	0.9331	11.1941
1109.6	0.660997	0.9915	0.058	0.0579	0.6944	0.9336	11.2004
1109.8	0.661345	0.9920	0.058	0.0579	0.6944	0.9341	11.2066
1110	0.661694	0.9925	0.058	0.0579	0.6944	0.9347	11.2129
1110.2	0.662043	0.9931	0.058	0.0579	0.6944	0.9352	11.2192
1110.4	0.662393	0.9936	0.058	0.0579	0.6944	0.9357	11.2255
1110.6	0.662744	0.9941	0.058	0.0579	0.6944	0.9362	11.2318
1110.8	0.663096	0.9946	0.058	0.0579	0.6944	0.9368	11.2381
1111	0.663449	0.9952	0.058	0.0579	0.6944	0.9373	11.2445
1111.2	0.663802	0.9957	0.058	0.0579	0.6944	0.9378	11.2508
1111.4	0.664156	0.9962	0.058	0.0579	0.6944	0.9384	11.2572
1111.6	0.664512	0.9968	0.058	0.0579	0.6944	0.9389	11.2636
1111.8	0.664867	0.9973	0.058	0.0579	0.6944	0.9394	11.2700
1112	0.665224	0.9978	0.058	0.0579	0.6944	0.9400	11.2764
1112.2	0.665582	0.9984	0.058	0.0579	0.6944	0.9405	11.2828
1112.4	0.66594	0.9989	0.058	0.0579	0.6944	0.9410	11.2893
1112.6	0.666299	0.9994	0.058	0.0579	0.6944	0.9416	11.2957
1112.8	0.66666	1.0000	0.058	0.0579	0.6944	0.9421	11.3022
1113	0.667021	1.0005	0.058	0.0579	0.6944	0.9427	11.3087
1113.2	0.667382	1.0011	0.058	0.0579	0.6944	0.9432	11.3152
1113.4	0.667745	1.0016	0.058	0.0579	0.6944	0.9437	11.3217
1113.6	0.668109	1.0022	0.058	0.0579	0.6944	0.9443	11.3282
1113.8	0.668473	1.0027	0.058	0.0579	0.6944	0.9448	11.3348
1114	0.668839	1.0033	0.058	0.0579	0.6944	0.9454	11.3414
1114.2	0.669205	1.0038	0.058	0.0579	0.6944	0.9459	11.3480
1114.4	0.669572	1.0044	0.058	0.0579	0.6944	0.9465	11.3546
1114.6	0.66994	1.0049	0.058	0.0579	0.6944	0.9470	11.3612
1114.8	0.67031	1.0055	0.058	0.0579	0.6944	0.9476	11.3678
1115	0.67068	1.0060	0.058	0.0579	0.6944	0.9481	11.3745
1115.2	0.671051	1.0066	0.058	0.0579	0.6944	0.9487	11.3811
1115.4	0.671422	1.0071	0.058	0.0579	0.6944	0.9493	11.3878
1115.6	0.671795	1.0077	0.058	0.0579	0.6944	0.9498	11.3945
1115.8	0.672169	1.0083	0.058	0.0579	0.6944	0.9504	11.4012
1116	0.672544	1.0088	0.058	0.0579	0.6944	0.9509	11.4080
1116.2	0.67292	1.0094	0.058	0.0579	0.6944	0.9515	11.4147
1116.4	0.673296	1.0099	0.058	0.0579	0.6944	0.9521	11.4215
1116.6	0.673674	1.0105	0.058	0.0579	0.6944	0.9526	11.4283
1116.8	0.674053	1.0111	0.058	0.0579	0.6944	0.9532	11.4351
1117	0.674433	1.0116	0.058	0.0579	0.6944	0.9538	11.4419

1117.2	0.674814	1.0122	0.058	0.0579	0.6944	0.9544	11.4488
1117.4	0.675195	1.0128	0.058	0.0579	0.6944	0.9549	11.4556
1117.6	0.675578	1.0134	0.058	0.0579	0.6944	0.9555	11.4625
1117.8	0.675962	1.0139	0.058	0.0579	0.6944	0.9561	11.4694
1118	0.676347	1.0145	0.058	0.0579	0.6944	0.9567	11.4763
1118.2	0.676733	1.0151	0.058	0.0579	0.6944	0.9572	11.4833
1118.4	0.67712	1.0157	0.058	0.0579	0.6944	0.9578	11.4902
1118.6	0.677509	1.0163	0.058	0.0579	0.6944	0.9584	11.4972
1118.8	0.677898	1.0168	0.058	0.0579	0.6944	0.9590	11.5042
1119	0.678288	1.0174	0.058	0.0579	0.6944	0.9596	11.5112
1119.2	0.67868	1.0180	0.058	0.0579	0.6944	0.9601	11.5183
1119.4	0.679072	1.0186	0.058	0.0579	0.6944	0.9607	11.5253
1119.6	0.679466	1.0192	0.058	0.0579	0.6944	0.9613	11.5324
1119.8	0.679861	1.0198	0.058	0.0579	0.6944	0.9619	11.5395
1120	0.680257	1.0204	0.058	0.0579	0.6944	0.9625	11.5466
1120.2	0.680654	1.0210	0.058	0.0579	0.6944	0.9631	11.5538
1120.4	0.681053	1.0216	0.058	0.0579	0.6944	0.9637	11.5609
1120.6	0.681452	1.0222	0.058	0.0579	0.6944	0.9643	11.5681
1120.8	0.681853	1.0228	0.058	0.0579	0.6944	0.9649	11.5753
1121	0.682255	1.0234	0.058	0.0579	0.6944	0.9655	11.5825
1121.2	0.682658	1.0240	0.058	0.0579	0.6944	0.9661	11.5898
1121.4	0.683063	1.0246	0.058	0.0579	0.6944	0.9667	11.5970
1121.6	0.683469	1.0252	0.058	0.0579	0.6944	0.9673	11.6043
1121.8	0.683876	1.0258	0.058	0.0579	0.6944	0.9679	11.6117
1122	0.684284	1.0264	0.058	0.0579	0.6944	0.9686	11.6190
1122.2	0.684693	1.0270	0.058	0.0579	0.6944	0.9692	11.6263
1122.4	0.685104	1.0277	0.058	0.0579	0.6944	0.9698	11.6337
1122.6	0.685516	1.0283	0.058	0.0579	0.6944	0.9704	11.6411
1122.8	0.68593	1.0289	0.058	0.0579	0.6944	0.9710	11.6486
1123	0.686344	1.0295	0.058	0.0579	0.6944	0.9716	11.6560
1123.2	0.68676	1.0301	0.058	0.0579	0.6944	0.9723	11.6635
1123.4	0.687178	1.0308	0.058	0.0579	0.6944	0.9729	11.6710
1123.6	0.687597	1.0314	0.058	0.0579	0.6944	0.9735	11.6785
1123.8	0.688017	1.0320	0.058	0.0579	0.6944	0.9742	11.6861
1124	0.688439	1.0327	0.058	0.0579	0.6944	0.9748	11.6937
1124.2	0.688862	1.0333	0.058	0.0579	0.6944	0.9754	11.7013
1124.4	0.689286	1.0339	0.058	0.0579	0.6944	0.9761	11.7089
1124.6	0.689712	1.0346	0.058	0.0579	0.6944	0.9767	11.7165
1124.8	0.690139	1.0352	0.058	0.0579	0.6944	0.9773	11.7242
1125	0.690568	1.0359	0.058	0.0579	0.6944	0.9780	11.7319
1125.2	0.690999	1.0365	0.058	0.0579	0.6944	0.9786	11.7397
1125.4	0.691431	1.0371	0.058	0.0579	0.6944	0.9793	11.7474
1125.6	0.691864	1.0378	0.058	0.0579	0.6944	0.9799	11.7552
1125.8	0.692299	1.0384	0.058	0.0579	0.6944	0.9806	11.7630
1126	0.692735	1.0391	0.058	0.0579	0.6944	0.9812	11.7709
1126.2	0.693174	1.0398	0.058	0.0579	0.6944	0.9819	11.7787
1126.4	0.693613	1.0404	0.058	0.0579	0.6944	0.9825	11.7866

1126.6	0.694055	1.0411	0.058	0.0579	0.6944	0.9832	11.7946
1126.8	0.694498	1.0417	0.058	0.0579	0.6944	0.9839	11.8025
1127	0.694942	1.0424	0.058	0.0579	0.6944	0.9845	11.8105
1127.2	0.695388	1.0431	0.058	0.0579	0.6944	0.9852	11.8185
1127.4	0.695836	1.0438	0.058	0.0579	0.6944	0.9859	11.8266
1127.6	0.696286	1.0444	0.058	0.0579	0.6944	0.9866	11.8347
1127.8	0.696738	1.0451	0.058	0.0579	0.6944	0.9872	11.8428
1128	0.697191	1.0458	0.058	0.0579	0.6944	0.9879	11.8509
1128.2	0.697646	1.0465	0.058	0.0579	0.6944	0.9886	11.8591
1128.4	0.698102	1.0472	0.058	0.0579	0.6944	0.9893	11.8673
1128.6	0.698561	1.0478	0.058	0.0579	0.6944	0.9900	11.8755
1128.8	0.699022	1.0485	0.058	0.0579	0.6944	0.9907	11.8838
1129	0.699484	1.0492	0.058	0.0579	0.6944	0.9914	11.8921
1129.2	0.699948	1.0499	0.058	0.0579	0.6944	0.9921	11.9004
1129.4	0.700414	1.0506	0.058	0.0579	0.6944	0.9928	11.9088
1129.6	0.700882	1.0513	0.058	0.0579	0.6944	0.9935	11.9172
1129.8	0.701352	1.0520	0.058	0.0579	0.6944	0.9942	11.9257
1130	0.701824	1.0527	0.058	0.0579	0.6944	0.9949	11.9341
1130.2	0.702298	1.0534	0.058	0.0579	0.6944	0.9956	11.9427
1130.4	0.702774	1.0542	0.058	0.0579	0.6944	0.9963	11.9512
1130.6	0.703253	1.0549	0.058	0.0579	0.6944	0.9970	11.9598
1130.8	0.703733	1.0556	0.058	0.0579	0.6944	0.9977	11.9684
1131	0.704215	1.0563	0.058	0.0579	0.6944	0.9985	11.9771
1131.2	0.7047	1.0570	0.058	0.0579	0.6944	0.9992	11.9858
1131.4	0.705187	1.0578	0.058	0.0579	0.6944	0.9999	11.9945
1131.6	0.705676	1.0585	0.058	0.0579	0.6944	1.0006	12.0033
1131.8	0.706167	1.0593	0.058	0.0579	0.6944	1.0014	12.0121
1132	0.70666	1.0600	0.058	0.0579	0.6944	1.0021	12.0210
1132.2	0.707156	1.0607	0.058	0.0579	0.6944	1.0029	12.0299
1132.4	0.707654	1.0615	0.058	0.0579	0.6944	1.0036	12.0389
1132.6	0.708155	1.0622	0.058	0.0579	0.6944	1.0044	12.0478
1132.8	0.708658	1.0630	0.058	0.0579	0.6944	1.0051	12.0569
1133	0.709164	1.0637	0.058	0.0579	0.6944	1.0059	12.0660
1133.2	0.709672	1.0645	0.058	0.0579	0.6944	1.0066	12.0751
1133.4	0.710182	1.0653	0.058	0.0579	0.6944	1.0074	12.0842
1133.6	0.710695	1.0660	0.058	0.0579	0.6944	1.0082	12.0935
1133.8	0.711211	1.0668	0.058	0.0579	0.6944	1.0089	12.1027
1134	0.71173	1.0676	0.058	0.0579	0.6944	1.0097	12.1120
1134.2	0.712251	1.0684	0.058	0.0579	0.6944	1.0105	12.1214
1134.4	0.712775	1.0692	0.058	0.0579	0.6944	1.0113	12.1308
1134.6	0.713302	1.0700	0.058	0.0579	0.6944	1.0121	12.1402
1134.8	0.713831	1.0707	0.058	0.0579	0.6944	1.0129	12.1498
1135	0.714364	1.0715	0.058	0.0579	0.6944	1.0137	12.1593
1135.2	0.714899	1.0723	0.058	0.0579	0.6944	1.0145	12.1689
1135.4	0.715438	1.0732	0.058	0.0579	0.6944	1.0153	12.1786
1135.6	0.715979	1.0740	0.058	0.0579	0.6944	1.0161	12.1883
1135.8	0.716524	1.0748	0.058	0.0579	0.6944	1.0169	12.1981

1136	0.717072	1.0756	0.058	0.0579	0.6944	1.0177	12.2079
1136.2	0.717623	1.0764	0.058	0.0579	0.6944	1.0186	12.2178
1136.4	0.718177	1.0773	0.058	0.0579	0.6944	1.0194	12.2277
1136.6	0.718735	1.0781	0.058	0.0579	0.6944	1.0202	12.2378
1136.8	0.719296	1.0789	0.058	0.0579	0.6944	1.0211	12.2478
1137	0.71986	1.0798	0.058	0.0579	0.6944	1.0219	12.2580
1137.2	0.720428	1.0806	0.058	0.0579	0.6944	1.0228	12.2682
1137.4	0.721	1.0815	0.058	0.0579	0.6944	1.0236	12.2784
1137.6	0.721575	1.0824	0.058	0.0579	0.6944	1.0245	12.2887
1137.8	0.722155	1.0832	0.058	0.0579	0.6944	1.0254	12.2991
1138	0.722738	1.0841	0.058	0.0579	0.6944	1.0262	12.3096
1138.2	0.723325	1.0850	0.058	0.0579	0.6944	1.0271	12.3201
1138.4	0.723916	1.0859	0.058	0.0579	0.6944	1.0280	12.3307
1138.6	0.724511	1.0868	0.058	0.0579	0.6944	1.0289	12.3414
1138.8	0.72511	1.0877	0.058	0.0579	0.6944	1.0298	12.3521
1139	0.725713	1.0886	0.058	0.0579	0.6944	1.0307	12.3630
1139.2	0.726321	1.0895	0.058	0.0579	0.6944	1.0316	12.3739
1139.4	0.726934	1.0904	0.058	0.0579	0.6944	1.0325	12.3849
1139.6	0.727551	1.0913	0.058	0.0579	0.6944	1.0335	12.3959
1139.8	0.728172	1.0923	0.058	0.0579	0.6944	1.0344	12.4071
1140	0.728799	1.0932	0.058	0.0579	0.6944	1.0353	12.4183
1140.2	0.72943	1.0941	0.058	0.0579	0.6944	1.0363	12.4296
1140.4	0.730067	1.0951	0.058	0.0579	0.6944	1.0372	12.4410
1140.6	0.730709	1.0961	0.058	0.0579	0.6944	1.0382	12.4525
1140.8	0.731356	1.0970	0.058	0.0579	0.6944	1.0392	12.4641
1141	0.732008	1.0980	0.058	0.0579	0.6944	1.0401	12.4758
1141.2	0.732666	1.0990	0.058	0.0579	0.6944	1.0411	12.4876
1141.4	0.73333	1.1000	0.058	0.0579	0.6944	1.0421	12.4995
1141.6	0.733999	1.1010	0.058	0.0579	0.6944	1.0431	12.5115
1141.8	0.734675	1.1020	0.058	0.0579	0.6944	1.0441	12.5236
1142	0.735357	1.1030	0.058	0.0579	0.6944	1.0452	12.5358
1142.2	0.736046	1.1041	0.058	0.0579	0.6944	1.0462	12.5482
1142.4	0.736741	1.1051	0.058	0.0579	0.6944	1.0472	12.5606
1142.6	0.737443	1.1062	0.058	0.0579	0.6944	1.0483	12.5732
1142.8	0.738152	1.1072	0.058	0.0579	0.6944	1.0494	12.5859
1143	0.738868	1.1083	0.058	0.0579	0.6944	1.0504	12.5987
1143.2	0.739592	1.1094	0.058	0.0579	0.6944	1.0515	12.6117
1143.4	0.740323	1.1105	0.058	0.0579	0.6944	1.0526	12.6248
1143.6	0.741063	1.1116	0.058	0.0579	0.6944	1.0537	12.6380
1143.8	0.741811	1.1127	0.058	0.0579	0.6944	1.0548	12.6514
1144	0.742567	1.1139	0.058	0.0579	0.6944	1.0560	12.6650
1144.2	0.743333	1.1150	0.058	0.0579	0.6944	1.0571	12.6787
1144.4	0.744108	1.1162	0.058	0.0579	0.6944	1.0583	12.6925
1144.6	0.744892	1.1173	0.058	0.0579	0.6944	1.0595	12.7066
1144.8	0.745687	1.1185	0.058	0.0579	0.6944	1.0607	12.7208
1145	0.746492	1.1197	0.058	0.0579	0.6944	1.0619	12.7352
1145.2	0.747307	1.1210	0.058	0.0579	0.6944	1.0631	12.7497

1145.4	0.748135	1.1222	0.058	0.0579	0.6944	1.0643	12.7645
1145.6	0.748974	1.1235	0.058	0.0579	0.6944	1.0656	12.7795
1145.8	0.749825	1.1247	0.058	0.0579	0.6944	1.0669	12.7947
1146	0.750689	1.1260	0.058	0.0579	0.6944	1.0682	12.8102
1146.2	0.751567	1.1274	0.058	0.0579	0.6944	1.0695	12.8259
1146.4	0.75246	1.1287	0.058	0.0579	0.6944	1.0708	12.8418
1146.6	0.753367	1.1301	0.058	0.0579	0.6944	1.0722	12.8580
1146.8	0.754291	1.1314	0.058	0.0579	0.6944	1.0736	12.8745
1147	0.755231	1.1328	0.058	0.0579	0.6944	1.0750	12.8913
1147.2	0.75619	1.1343	0.058	0.0579	0.6944	1.0764	12.9083
1147.4	0.757167	1.1358	0.058	0.0579	0.6944	1.0779	12.9258
1147.6	0.758164	1.1372	0.058	0.0579	0.6944	1.0794	12.9435
1147.8	0.759183	1.1388	0.058	0.0579	0.6944	1.0809	12.9617
1148	0.760225	1.1403	0.058	0.0579	0.6944	1.0825	12.9802
1148.2	0.761292	1.1419	0.058	0.0579	0.6944	1.0841	12.9992
1148.4	0.762385	1.1436	0.058	0.0579	0.6944	1.0857	13.0186
1148.6	0.763507	1.1453	0.058	0.0579	0.6944	1.0874	13.0386
1148.8	0.764661	1.1470	0.058	0.0579	0.6944	1.0891	13.0591
1149	0.76585	1.1488	0.058	0.0579	0.6944	1.0909	13.0802
1149.2	0.767076	1.1506	0.058	0.0579	0.6944	1.0927	13.1019
1149.4	0.768344	1.1525	0.058	0.0579	0.6944	1.0946	13.1243
1149.6	0.769659	1.1545	0.058	0.0579	0.6944	1.0966	13.1476
1149.8	0.771026	1.1565	0.058	0.0579	0.6944	1.0987	13.1717
1150	0.772454	1.1587	0.058	0.0579	0.6944	1.1008	13.1969
1150.2	0.77395	1.1609	0.058	0.0579	0.6944	1.1031	13.2232
1150.4	0.775526	1.1633	0.058	0.0579	0.6944	1.1054	13.2508
1150.6	0.777198	1.1658	0.058	0.0579	0.6944	1.1079	13.2801
1150.8	0.778987	1.1685	0.058	0.0579	0.6944	1.1106	13.3112
1151	0.780923	1.1714	0.058	0.0579	0.6944	1.1135	13.3447
1151.2	0.78305	1.1746	0.058	0.0579	0.6944	1.1167	13.3813
1151.4	0.785447	1.1782	0.058	0.0579	0.6944	1.1203	13.4220
1151.6	0.788262	1.1824	0.058	0.0579	0.6944	1.1245	13.4689
1151.8	0.79187	1.1878	0.058	0.0579	0.6944	1.1299	13.5267
1152	0.8	1.2000	0.058	0.0579	0.6944	1.1421	13.6324
1152.2	0.804237	1.2064	0.058	0.0579	0.6944	1.1485	13.7437
1152.4	0.806118	1.2092	0.058	0.0579	0.6944	1.1513	13.7988
1152.6	0.807585	1.2114	0.058	0.0579	0.6944	1.1535	13.8289
1152.8	0.808835	1.2133	0.058	0.0579	0.6944	1.1554	13.8533
1153	0.809944	1.2149	0.058	0.0579	0.6944	1.1570	13.8746
1153.2	0.810953	1.2164	0.058	0.0579	0.6944	1.1586	13.8936
1153.4	0.811885	1.2178	0.058	0.0579	0.6944	1.1600	13.9111
1153.6	0.812757	1.2191	0.058	0.0579	0.6944	1.1613	13.9273
1153.8	0.813578	1.2204	0.058	0.0579	0.6944	1.1625	13.9426
1154	0.814358	1.2215	0.058	0.0579	0.6944	1.1637	13.9570
1154.2	0.815102	1.2227	0.058	0.0579	0.6944	1.1648	13.9707
1154.4	0.815815	1.2237	0.058	0.0579	0.6944	1.1659	13.9838
1154.6	0.8165	1.2248	0.058	0.0579	0.6944	1.1669	13.9964

1154.8	0.817161	1.2257	0.058	0.0579	0.6944	1.1679	14.0085
1155	0.8178	1.2267	0.058	0.0579	0.6944	1.1688	14.0202
1155.2	0.81842	1.2276	0.058	0.0579	0.6944	1.1698	14.0315
1155.4	0.819021	1.2285	0.058	0.0579	0.6944	1.1707	14.0425
1155.6	0.819606	1.2294	0.058	0.0579	0.6944	1.1715	14.0532
1155.8	0.820176	1.2303	0.058	0.0579	0.6944	1.1724	14.0636
1156	0.820732	1.2311	0.058	0.0579	0.6944	1.1732	14.0737
1156.2	0.821275	1.2319	0.058	0.0579	0.6944	1.1740	14.0836
1156.4	0.821806	1.2327	0.058	0.0579	0.6944	1.1748	14.0933
1156.6	0.822326	1.2335	0.058	0.0579	0.6944	1.1756	14.1027
1156.8	0.822835	1.2343	0.058	0.0579	0.6944	1.1764	14.1120
1157	0.823335	1.2350	0.058	0.0579	0.6944	1.1771	14.1211
1157.2	0.823825	1.2357	0.058	0.0579	0.6944	1.1779	14.1300
1157.4	0.824306	1.2365	0.058	0.0579	0.6944	1.1786	14.1387
1157.6	0.824779	1.2372	0.058	0.0579	0.6944	1.1793	14.1473
1157.8	0.825245	1.2379	0.058	0.0579	0.6944	1.1800	14.1558
1158	0.825702	1.2386	0.058	0.0579	0.6944	1.1807	14.1641
1158.2	0.826153	1.2392	0.058	0.0579	0.6944	1.1814	14.1723
1158.4	0.826597	1.2399	0.058	0.0579	0.6944	1.1820	14.1803
1158.6	0.827034	1.2406	0.058	0.0579	0.6944	1.1827	14.1882
1158.8	0.827465	1.2412	0.058	0.0579	0.6944	1.1833	14.1960
1159	0.82789	1.2418	0.058	0.0579	0.6944	1.1840	14.2038
1159.2	0.82831	1.2425	0.058	0.0579	0.6944	1.1846	14.2114
1159.4	0.828724	1.2431	0.058	0.0579	0.6944	1.1852	14.2189
1159.6	0.829133	1.2437	0.058	0.0579	0.6944	1.1858	14.2263
1159.8	0.829537	1.2443	0.058	0.0579	0.6944	1.1864	14.2336
1160	0.829936	1.2449	0.058	0.0579	0.6944	1.1870	14.2408
1160.2	0.83033	1.2455	0.058	0.0579	0.6944	1.1876	14.2479
1160.4	0.83072	1.2461	0.058	0.0579	0.6944	1.1882	14.2550
1160.6	0.831105	1.2467	0.058	0.0579	0.6944	1.1888	14.2620
1160.8	0.831487	1.2472	0.058	0.0579	0.6944	1.1894	14.2689
1161	0.831864	1.2478	0.058	0.0579	0.6944	1.1899	14.2757
1161.2	0.832237	1.2484	0.058	0.0579	0.6944	1.1905	14.2825
1161.4	0.832607	1.2489	0.058	0.0579	0.6944	1.1910	14.2892
1161.6	0.832973	1.2495	0.058	0.0579	0.6944	1.1916	14.2958
1161.8	0.833335	1.2500	0.058	0.0579	0.6944	1.1921	14.3023
1162	0.833694	1.2505	0.058	0.0579	0.6944	1.1927	14.3088
1162.2	0.834049	1.2511	0.058	0.0579	0.6944	1.1932	14.3152
1162.4	0.834402	1.2516	0.058	0.0579	0.6944	1.1937	14.3216
1162.6	0.834751	1.2521	0.058	0.0579	0.6944	1.1943	14.3279
1162.8	0.835097	1.2526	0.058	0.0579	0.6944	1.1948	14.3342
1163	0.83544	1.2532	0.058	0.0579	0.6944	1.1953	14.3404
1163.2	0.83578	1.2537	0.058	0.0579	0.6944	1.1958	14.3465
1163.4	0.836117	1.2542	0.058	0.0579	0.6944	1.1963	14.3526
1163.6	0.836451	1.2547	0.058	0.0579	0.6944	1.1968	14.3587
1163.8	0.836783	1.2552	0.058	0.0579	0.6944	1.1973	14.3647
1164	0.837112	1.2557	0.058	0.0579	0.6944	1.1978	14.3706

1164.2	0.837439	1.2562	0.058	0.0579	0.6944	1.1983	14.3765
1164.4	0.837763	1.2566	0.058	0.0579	0.6944	1.1988	14.3824
1164.6	0.838085	1.2571	0.058	0.0579	0.6944	1.1993	14.3882
1164.8	0.838404	1.2576	0.058	0.0579	0.6944	1.1997	14.3939
1165	0.838721	1.2581	0.058	0.0579	0.6944	1.2002	14.3997
1165.2	0.839035	1.2586	0.058	0.0579	0.6944	1.2007	14.4054
1165.4	0.839348	1.2590	0.058	0.0579	0.6944	1.2012	14.4110
1165.6	0.839658	1.2595	0.058	0.0579	0.6944	1.2016	14.4166
1165.8	0.839966	1.2599	0.058	0.0579	0.6944	1.2021	14.4222
1166	0.840272	1.2604	0.058	0.0579	0.6944	1.2025	14.4277
1166.2	0.840576	1.2609	0.058	0.0579	0.6944	1.2030	14.4332
1166.4	0.840877	1.2613	0.058	0.0579	0.6944	1.2034	14.4386
1166.6	0.841177	1.2618	0.058	0.0579	0.6944	1.2039	14.4440
1166.8	0.841475	1.2622	0.058	0.0579	0.6944	1.2043	14.4494
1167	0.841772	1.2627	0.058	0.0579	0.6944	1.2048	14.4548
1167.2	0.842066	1.2631	0.058	0.0579	0.6944	1.2052	14.4601
1167.4	0.842358	1.2635	0.058	0.0579	0.6944	1.2057	14.4654
1167.6	0.842649	1.2640	0.058	0.0579	0.6944	1.2061	14.4706
1167.8	0.842938	1.2644	0.058	0.0579	0.6944	1.2065	14.4758
1168	0.843225	1.2648	0.058	0.0579	0.6944	1.2070	14.4810
1168.2	0.843511	1.2653	0.058	0.0579	0.6944	1.2074	14.4862
1168.4	0.843794	1.2657	0.058	0.0579	0.6944	1.2078	14.4913
1168.6	0.844077	1.2661	0.058	0.0579	0.6944	1.2082	14.4964
1168.8	0.844357	1.2665	0.058	0.0579	0.6944	1.2087	14.5015
1169	0.844636	1.2670	0.058	0.0579	0.6944	1.2091	14.5065
1169.2	0.844914	1.2674	0.058	0.0579	0.6944	1.2095	14.5115
1169.4	0.84519	1.2678	0.058	0.0579	0.6944	1.2099	14.5165
1169.6	0.845465	1.2682	0.058	0.0579	0.6944	1.2103	14.5214
1169.8	0.845738	1.2686	0.058	0.0579	0.6944	1.2107	14.5264
1170	0.846009	1.2690	0.058	0.0579	0.6944	1.2111	14.5313
1170.2	0.84628	1.2694	0.058	0.0579	0.6944	1.2115	14.5362
1170.4	0.846548	1.2698	0.058	0.0579	0.6944	1.2120	14.5410
1170.6	0.846816	1.2702	0.058	0.0579	0.6944	1.2124	14.5458
1170.8	0.847082	1.2706	0.058	0.0579	0.6944	1.2128	14.5506
1171	0.847347	1.2710	0.058	0.0579	0.6944	1.2131	14.5554
1171.2	0.84761	1.2714	0.058	0.0579	0.6944	1.2135	14.5602
1171.4	0.847873	1.2718	0.058	0.0579	0.6944	1.2139	14.5649
1171.6	0.848134	1.2722	0.058	0.0579	0.6944	1.2143	14.5696
1171.8	0.848393	1.2726	0.058	0.0579	0.6944	1.2147	14.5743
1172	0.848652	1.2730	0.058	0.0579	0.6944	1.2151	14.5790
1172.2	0.848909	1.2734	0.058	0.0579	0.6944	1.2155	14.5836
1172.4	0.849165	1.2737	0.058	0.0579	0.6944	1.2159	14.5882
1172.6	0.84942	1.2741	0.058	0.0579	0.6944	1.2163	14.5928
1172.8	0.849674	1.2745	0.058	0.0579	0.6944	1.2166	14.5974
1173	0.849926	1.2749	0.058	0.0579	0.6944	1.2170	14.6020
1173.2	0.850178	1.2753	0.058	0.0579	0.6944	1.2174	14.6065
1173.4	0.850428	1.2756	0.058	0.0579	0.6944	1.2178	14.6110

1173.6	0.850677	1.2760	0.058	0.0579	0.6944	1.2181	14.6155
1173.8	0.850925	1.2764	0.058	0.0579	0.6944	1.2185	14.6200
1174	0.851172	1.2768	0.058	0.0579	0.6944	1.2189	14.6244
1174.2	0.851418	1.2771	0.058	0.0579	0.6944	1.2193	14.6289
1174.4	0.851663	1.2775	0.058	0.0579	0.6944	1.2196	14.6333
1174.6	0.851907	1.2779	0.058	0.0579	0.6944	1.2200	14.6377
1174.8	0.85215	1.2782	0.058	0.0579	0.6944	1.2204	14.6421
1175	0.852392	1.2786	0.058	0.0579	0.6944	1.2207	14.6464
1175.2	0.852633	1.2789	0.058	0.0579	0.6944	1.2211	14.6508
1175.4	0.852873	1.2793	0.058	0.0579	0.6944	1.2214	14.6551
1175.6	0.853112	1.2797	0.058	0.0579	0.6944	1.2218	14.6594
1175.8	0.85335	1.2800	0.058	0.0579	0.6944	1.2222	14.6637
1176	0.853588	1.2804	0.058	0.0579	0.6944	1.2225	14.6680
1176.2	0.853824	1.2807	0.058	0.0579	0.6944	1.2229	14.6723
1176.4	0.854059	1.2811	0.058	0.0579	0.6944	1.2232	14.6765
1176.6	0.854293	1.2814	0.058	0.0579	0.6944	1.2236	14.6807
1176.8	0.854527	1.2818	0.058	0.0579	0.6944	1.2239	14.6849
1177	0.85476	1.2821	0.058	0.0579	0.6944	1.2243	14.6891
1177.2	0.854991	1.2825	0.058	0.0579	0.6944	1.2246	14.6933
1177.4	0.855222	1.2828	0.058	0.0579	0.6944	1.2250	14.6975
1177.6	0.855452	1.2832	0.058	0.0579	0.6944	1.2253	14.7016
1177.8	0.855681	1.2835	0.058	0.0579	0.6944	1.2257	14.7058
1178	0.85591	1.2839	0.058	0.0579	0.6944	1.2260	14.7099
1178.2	0.856137	1.2842	0.058	0.0579	0.6944	1.2263	14.7140
1178.4	0.856364	1.2845	0.058	0.0579	0.6944	1.2267	14.7181
1178.6	0.85659	1.2849	0.058	0.0579	0.6944	1.2270	14.7221
1178.8	0.856815	1.2852	0.058	0.0579	0.6944	1.2274	14.7262
1179	0.857039	1.2856	0.058	0.0579	0.6944	1.2277	14.7302
1179.2	0.857263	1.2859	0.058	0.0579	0.6944	1.2280	14.7343
1179.4	0.857486	1.2862	0.058	0.0579	0.6944	1.2284	14.7383
1179.6	0.857708	1.2866	0.058	0.0579	0.6944	1.2287	14.7423
1179.8	0.857929	1.2869	0.058	0.0579	0.6944	1.2290	14.7463
1180	0.858149	1.2872	0.058	0.0579	0.6944	1.2294	14.7503
1180.2	0.858369	1.2876	0.058	0.0579	0.6944	1.2297	14.7542
1180.4	0.858588	1.2879	0.058	0.0579	0.6944	1.2300	14.7582
1180.6	0.858807	1.2882	0.058	0.0579	0.6944	1.2303	14.7621
1180.8	0.859024	1.2885	0.058	0.0579	0.6944	1.2307	14.7660
1181	0.859241	1.2889	0.058	0.0579	0.6944	1.2310	14.7699
1181.2	0.859457	1.2892	0.058	0.0579	0.6944	1.2313	14.7738
1181.4	0.859673	1.2895	0.058	0.0579	0.6944	1.2316	14.7777
1181.6	0.859888	1.2898	0.058	0.0579	0.6944	1.2320	14.7816
1181.8	0.860102	1.2902	0.058	0.0579	0.6944	1.2323	14.7855
1182	0.860315	1.2905	0.058	0.0579	0.6944	1.2326	14.7893
1182.2	0.860528	1.2908	0.058	0.0579	0.6944	1.2329	14.7931
1182.4	0.86074	1.2911	0.058	0.0579	0.6944	1.2332	14.7970
1182.6	0.860951	1.2914	0.058	0.0579	0.6944	1.2336	14.8008
1182.8	0.861162	1.2917	0.058	0.0579	0.6944	1.2339	14.8046

1183	0.861372	1.2921	0.058	0.0579	0.6944	1.2342	14.8084
1183.2	0.861582	1.2924	0.058	0.0579	0.6944	1.2345	14.8121
1183.4	0.861791	1.2927	0.058	0.0579	0.6944	1.2348	14.8159
1183.6	0.861999	1.2930	0.058	0.0579	0.6944	1.2351	14.8197
1183.8	0.862207	1.2933	0.058	0.0579	0.6944	1.2354	14.8234
1184	0.862414	1.2936	0.058	0.0579	0.6944	1.2358	14.8271
1184.2	0.86262	1.2939	0.058	0.0579	0.6944	1.2361	14.8309
1184.4	0.862826	1.2942	0.058	0.0579	0.6944	1.2364	14.8346
1184.6	0.863031	1.2945	0.058	0.0579	0.6944	1.2367	14.8383
1184.8	0.863236	1.2949	0.058	0.0579	0.6944	1.2370	14.8420
1185	0.86344	1.2952	0.058	0.0579	0.6944	1.2373	14.8456
1185.2	0.863644	1.2955	0.058	0.0579	0.6944	1.2376	14.8493
1185.4	0.863847	1.2958	0.058	0.0579	0.6944	1.2379	14.8530
1185.6	0.864049	1.2961	0.058	0.0579	0.6944	1.2382	14.8566
1185.8	0.864251	1.2964	0.058	0.0579	0.6944	1.2385	14.8603
1186	0.864452	1.2967	0.058	0.0579	0.6944	1.2388	14.8639
1186.2	0.864653	1.2970	0.058	0.0579	0.6944	1.2391	14.8675
1186.4	0.864853	1.2973	0.058	0.0579	0.6944	1.2394	14.8711
1186.6	0.865052	1.2976	0.058	0.0579	0.6944	1.2397	14.8747
1186.8	0.865251	1.2979	0.058	0.0579	0.6944	1.2400	14.8783
1187	0.86545	1.2982	0.058	0.0579	0.6944	1.2403	14.8819
1187.2	0.865648	1.2985	0.058	0.0579	0.6944	1.2406	14.8854
1187.4	0.865845	1.2988	0.058	0.0579	0.6944	1.2409	14.8890
1187.6	0.866042	1.2991	0.058	0.0579	0.6944	1.2412	14.8925
1187.8	0.866238	1.2994	0.058	0.0579	0.6944	1.2415	14.8961
1188	0.866434	1.2997	0.058	0.0579	0.6944	1.2418	14.8996
1188.2	0.86663	1.2999	0.058	0.0579	0.6944	1.2421	14.9031
1188.4	0.866824	1.3002	0.058	0.0579	0.6944	1.2424	14.9066
1188.6	0.867019	1.3005	0.058	0.0579	0.6944	1.2427	14.9101
1188.8	0.867213	1.3008	0.058	0.0579	0.6944	1.2429	14.9136
1189	0.867406	1.3011	0.058	0.0579	0.6944	1.2432	14.9171
1189.2	0.867599	1.3014	0.058	0.0579	0.6944	1.2435	14.9206
1189.4	0.867791	1.3017	0.058	0.0579	0.6944	1.2438	14.9241
1189.6	0.867983	1.3020	0.058	0.0579	0.6944	1.2441	14.9275
1189.8	0.868175	1.3023	0.058	0.0579	0.6944	1.2444	14.9310
1190	0.868366	1.3025	0.058	0.0579	0.6944	1.2447	14.9344
1190.2	0.868556	1.3028	0.058	0.0579	0.6944	1.2450	14.9378
1190.4	0.868746	1.3031	0.058	0.0579	0.6944	1.2452	14.9413
1190.6	0.868936	1.3034	0.058	0.0579	0.6944	1.2455	14.9447
1190.8	0.869125	1.3037	0.058	0.0579	0.6944	1.2458	14.9481
1191	0.869313	1.3040	0.058	0.0579	0.6944	1.2461	14.9515
1191.2	0.869501	1.3043	0.058	0.0579	0.6944	1.2464	14.9549
1191.4	0.869689	1.3045	0.058	0.0579	0.6944	1.2467	14.9583
1191.6	0.869876	1.3048	0.058	0.0579	0.6944	1.2469	14.9616
1191.8	0.870063	1.3051	0.058	0.0579	0.6944	1.2472	14.9650
1192	0.87025	1.3054	0.058	0.0579	0.6944	1.2475	14.9684
1192.2	0.870436	1.3057	0.058	0.0579	0.6944	1.2478	14.9717

1192.4	0.870621	1.3059	0.058	0.0579	0.6944	1.2481	14.9751
1192.6	0.870806	1.3062	0.058	0.0579	0.6944	1.2483	14.9784
1192.8	0.870991	1.3065	0.058	0.0579	0.6944	1.2486	14.9817
1193	0.871175	1.3068	0.058	0.0579	0.6944	1.2489	14.9850
1193.2	0.871359	1.3070	0.058	0.0579	0.6944	1.2492	14.9884
1193.4	0.871542	1.3073	0.058	0.0579	0.6944	1.2494	14.9917
1193.6	0.871725	1.3076	0.058	0.0579	0.6944	1.2497	14.9950
1193.8	0.871908	1.3079	0.058	0.0579	0.6944	1.2500	14.9983
1194	0.87209	1.3081	0.058	0.0579	0.6944	1.2503	15.0015
1194.2	0.872272	1.3084	0.058	0.0579	0.6944	1.2505	15.0048
1194.4	0.872453	1.3087	0.058	0.0579	0.6944	1.2508	15.0081
1194.6	0.872634	1.3090	0.058	0.0579	0.6944	1.2511	15.0113
1194.8	0.872814	1.3092	0.058	0.0579	0.6944	1.2514	15.0146
1195	0.872995	1.3095	0.058	0.0579	0.6944	1.2516	15.0178
1195.2	0.873174	1.3098	0.058	0.0579	0.6944	1.2519	15.0211
1195.4	0.873354	1.3100	0.058	0.0579	0.6944	1.2522	15.0243
1195.6	0.873533	1.3103	0.058	0.0579	0.6944	1.2524	15.0275
1195.8	0.873711	1.3106	0.058	0.0579	0.6944	1.2527	15.0307
1196	0.873889	1.3108	0.058	0.0579	0.6944	1.2530	15.0340
1196.2	0.874067	1.3111	0.058	0.0579	0.6944	1.2532	15.0372
1196.4	0.874245	1.3114	0.058	0.0579	0.6944	1.2535	15.0404
1196.6	0.874422	1.3116	0.058	0.0579	0.6944	1.2538	15.0436
1196.8	0.874598	1.3119	0.058	0.0579	0.6944	1.2540	15.0467
1197	0.874775	1.3122	0.058	0.0579	0.6944	1.2543	15.0499
1197.2	0.874951	1.3124	0.058	0.0579	0.6944	1.2546	15.0531
1197.4	0.875126	1.3127	0.058	0.0579	0.6944	1.2548	15.0562
1197.6	0.875301	1.3130	0.058	0.0579	0.6944	1.2551	15.0594
1197.8	0.875476	1.3132	0.058	0.0579	0.6944	1.2553	15.0626
1198	0.875651	1.3135	0.058	0.0579	0.6944	1.2556	15.0657
1198.2	0.875825	1.3137	0.058	0.0579	0.6944	1.2559	15.0688
1198.4	0.875999	1.3140	0.058	0.0579	0.6944	1.2561	15.0720
1198.6	0.876172	1.3143	0.058	0.0579	0.6944	1.2564	15.0751
1198.8	0.876345	1.3145	0.058	0.0579	0.6944	1.2566	15.0782
1199	0.876518	1.3148	0.058	0.0579	0.6944	1.2569	15.0813
1199.2	0.87669	1.3150	0.058	0.0579	0.6944	1.2572	15.0844
1199.4	0.876862	1.3153	0.058	0.0579	0.6944	1.2574	15.0875
1199.6	0.877034	1.3156	0.058	0.0579	0.6944	1.2577	15.0906
1199.8	0.877206	1.3158	0.058	0.0579	0.6944	1.2579	15.0937
1200	0.877377	1.3161	0.058	0.0579	0.6944	1.2582	15.0968
1200.2	0.877547	1.3163	0.058	0.0579	0.6944	1.2585	15.0999
1200.4	0.877718	1.3166	0.058	0.0579	0.6944	1.2587	15.1029
1200.6	0.877888	1.3168	0.058	0.0579	0.6944	1.2590	15.1060
1200.8	0.878057	1.3171	0.058	0.0579	0.6944	1.2592	15.1091
1201	0.878227	1.3173	0.058	0.0579	0.6944	1.2595	15.1121
1201.2	0.878396	1.3176	0.058	0.0579	0.6944	1.2597	15.1152
1201.4	0.878565	1.3178	0.058	0.0579	0.6944	1.2600	15.1182
1201.6	0.878733	1.3181	0.058	0.0579	0.6944	1.2602	15.1212

1201.8	0.878901	1.3184	0.058	0.0579	0.6944	1.2605	15.1243
1202	0.879069	1.3186	0.058	0.0579	0.6944	1.2607	15.1273
1202.2	0.879236	1.3189	0.058	0.0579	0.6944	1.2610	15.1303
1202.4	0.879404	1.3191	0.058	0.0579	0.6944	1.2612	15.1333
1202.6	0.87957	1.3194	0.058	0.0579	0.6944	1.2615	15.1363
1202.8	0.879737	1.3196	0.058	0.0579	0.6944	1.2617	15.1393
1203	0.879903	1.3199	0.058	0.0579	0.6944	1.2620	15.1423
1203.2	0.880069	1.3201	0.058	0.0579	0.6944	1.2622	15.1453
1203.4	0.880235	1.3204	0.058	0.0579	0.6944	1.2625	15.1483
1203.6	0.8804	1.3206	0.058	0.0579	0.6944	1.2627	15.1513
1203.8	0.880565	1.3208	0.058	0.0579	0.6944	1.2630	15.1542
1204	0.88073	1.3211	0.058	0.0579	0.6944	1.2632	15.1572
1204.2	0.880894	1.3213	0.058	0.0579	0.6944	1.2635	15.1602
1204.4	0.881058	1.3216	0.058	0.0579	0.6944	1.2637	15.1631
1204.6	0.881222	1.3218	0.058	0.0579	0.6944	1.2640	15.1661
1204.8	0.881386	1.3221	0.058	0.0579	0.6944	1.2642	15.1690
1205	0.881549	1.3223	0.058	0.0579	0.6944	1.2645	15.1720
1205.2	0.881712	1.3226	0.058	0.0579	0.6944	1.2647	15.1749
1205.4	0.881875	1.3228	0.058	0.0579	0.6944	1.2649	15.1778
1205.6	0.882037	1.3231	0.058	0.0579	0.6944	1.2652	15.1808
1205.8	0.882199	1.3233	0.058	0.0579	0.6944	1.2654	15.1837
1206	0.882361	1.3235	0.058	0.0579	0.6944	1.2657	15.1866
1206.2	0.882522	1.3238	0.058	0.0579	0.6944	1.2659	15.1895
1206.4	0.882684	1.3240	0.058	0.0579	0.6944	1.2662	15.1924
1206.6	0.882845	1.3243	0.058	0.0579	0.6944	1.2664	15.1953
1206.8	0.883005	1.3245	0.058	0.0579	0.6944	1.2666	15.1982
1207	0.883166	1.3247	0.058	0.0579	0.6944	1.2669	15.2011
1207.2	0.883326	1.3250	0.058	0.0579	0.6944	1.2671	15.2040
1207.4	0.883486	1.3252	0.058	0.0579	0.6944	1.2674	15.2069
1207.6	0.883645	1.3255	0.058	0.0579	0.6944	1.2676	15.2097
1207.8	0.883805	1.3257	0.058	0.0579	0.6944	1.2678	15.2126
1208	0.883964	1.3259	0.058	0.0579	0.6944	1.2681	15.2155
1208.2	0.884123	1.3262	0.058	0.0579	0.6944	1.2683	15.2183
1208.4	0.884281	1.3264	0.058	0.0579	0.6944	1.2686	15.2212
1208.6	0.884439	1.3267	0.058	0.0579	0.6944	1.2688	15.2240
1208.8	0.884597	1.3269	0.058	0.0579	0.6944	1.2690	15.2269
1209	0.884755	1.3271	0.058	0.0579	0.6944	1.2693	15.2297
1209.2	0.884913	1.3274	0.058	0.0579	0.6944	1.2695	15.2326
1209.4	0.88507	1.3276	0.058	0.0579	0.6944	1.2697	15.2354
1209.6	0.885227	1.3278	0.058	0.0579	0.6944	1.2700	15.2382
1209.8	0.885383	1.3281	0.058	0.0579	0.6944	1.2702	15.2410
1210	0.88554	1.3283	0.058	0.0579	0.6944	1.2704	15.2439
1210.2	0.885696	1.3285	0.058	0.0579	0.6944	1.2707	15.2467
1210.4	0.885852	1.3288	0.058	0.0579	0.6944	1.2709	15.2495
1210.6	0.886008	1.3290	0.058	0.0579	0.6944	1.2711	15.2523
1210.8	0.886163	1.3292	0.058	0.0579	0.6944	1.2714	15.2551
1211	0.886318	1.3295	0.058	0.0579	0.6944	1.2716	15.2579

1211.2	0.886473	1.3297	0.058	0.0579	0.6944	1.2718	15.2607
1211.4	0.886628	1.3299	0.058	0.0579	0.6944	1.2721	15.2635
1211.6	0.886783	1.3302	0.058	0.0579	0.6944	1.2723	15.2663
1211.8	0.886937	1.3304	0.058	0.0579	0.6944	1.2725	15.2690
1212	0.887091	1.3306	0.058	0.0579	0.6944	1.2728	15.2718
1212.2	0.887245	1.3309	0.058	0.0579	0.6944	1.2730	15.2746
1212.4	0.887398	1.3311	0.058	0.0579	0.6944	1.2732	15.2773
1212.6	0.887551	1.3313	0.058	0.0579	0.6944	1.2735	15.2801
1212.8	0.887704	1.3316	0.058	0.0579	0.6944	1.2737	15.2829
1213	0.887857	1.3318	0.058	0.0579	0.6944	1.2739	15.2856
1213.2	0.88801	1.3320	0.058	0.0579	0.6944	1.2741	15.2884
1213.4	0.888162	1.3322	0.058	0.0579	0.6944	1.2744	15.2911
1213.6	0.888314	1.3325	0.058	0.0579	0.6944	1.2746	15.2938
1213.8	0.888466	1.3327	0.058	0.0579	0.6944	1.2748	15.2966
1214	0.888618	1.3329	0.058	0.0579	0.6944	1.2751	15.2993
1214.2	0.888769	1.3332	0.058	0.0579	0.6944	1.2753	15.3020
1214.4	0.88892	1.3334	0.058	0.0579	0.6944	1.2755	15.3048
1214.6	0.889071	1.3336	0.058	0.0579	0.6944	1.2757	15.3075
1214.8	0.889222	1.3338	0.058	0.0579	0.6944	1.2760	15.3102
1215	0.889372	1.3341	0.058	0.0579	0.6944	1.2762	15.3129
1215.2	0.889522	1.3343	0.058	0.0579	0.6944	1.2764	15.3156
1215.4	0.889673	1.3345	0.058	0.0579	0.6944	1.2766	15.3183
1215.6	0.889822	1.3347	0.058	0.0579	0.6944	1.2769	15.3210
1215.8	0.889972	1.3350	0.058	0.0579	0.6944	1.2771	15.3237
1216	0.890121	1.3352	0.058	0.0579	0.6944	1.2773	15.3264
1216.2	0.89027	1.3354	0.058	0.0579	0.6944	1.2775	15.3291
1216.4	0.890419	1.3356	0.058	0.0579	0.6944	1.2778	15.3318
1216.6	0.890568	1.3359	0.058	0.0579	0.6944	1.2780	15.3344
1216.8	0.890717	1.3361	0.058	0.0579	0.6944	1.2782	15.3371
1217	0.890865	1.3363	0.058	0.0579	0.6944	1.2784	15.3398
1217.2	0.891013	1.3365	0.058	0.0579	0.6944	1.2786	15.3425
1217.4	0.891161	1.3367	0.058	0.0579	0.6944	1.2789	15.3451
1217.6	0.891308	1.3370	0.058	0.0579	0.6944	1.2791	15.3478
1217.8	0.891456	1.3372	0.058	0.0579	0.6944	1.2793	15.3504
1218	0.891603	1.3374	0.058	0.0579	0.6944	1.2795	15.3531
1218.2	0.89175	1.3376	0.058	0.0579	0.6944	1.2798	15.3557
1218.4	0.891897	1.3378	0.058	0.0579	0.6944	1.2800	15.3584
1218.6	0.892044	1.3381	0.058	0.0579	0.6944	1.2802	15.3610
1218.8	0.89219	1.3383	0.058	0.0579	0.6944	1.2804	15.3637
1219	0.892336	1.3385	0.058	0.0579	0.6944	1.2806	15.3663
1219.2	0.892482	1.3387	0.058	0.0579	0.6944	1.2809	15.3689
1219.4	0.892628	1.3389	0.058	0.0579	0.6944	1.2811	15.3715
1219.6	0.892773	1.3392	0.058	0.0579	0.6944	1.2813	15.3742
1219.8	0.892919	1.3394	0.058	0.0579	0.6944	1.2815	15.3768
1220	0.893064	1.3396	0.058	0.0579	0.6944	1.2817	15.3794
1220.2	0.893209	1.3398	0.058	0.0579	0.6944	1.2819	15.3820
1220.4	0.893354	1.3400	0.058	0.0579	0.6944	1.2822	15.3846

1220.6	0.893498	1.3402	0.058	0.0579	0.6944	1.2824	15.3872
1220.8	0.893643	1.3405	0.058	0.0579	0.6944	1.2826	15.3898
1221	0.893787	1.3407	0.058	0.0579	0.6944	1.2828	15.3924
1221.2	0.893931	1.3409	0.058	0.0579	0.6944	1.2830	15.3950
1221.4	0.894075	1.3411	0.058	0.0579	0.6944	1.2832	15.3976
1221.6	0.894218	1.3413	0.058	0.0579	0.6944	1.2835	15.4002
1221.8	0.894362	1.3415	0.058	0.0579	0.6944	1.2837	15.4028
1222	0.894505	1.3418	0.058	0.0579	0.6944	1.2839	15.4054
1222.2	0.894648	1.3420	0.058	0.0579	0.6944	1.2841	15.4079
1222.4	0.894791	1.3422	0.058	0.0579	0.6944	1.2843	15.4105
1222.6	0.894933	1.3424	0.058	0.0579	0.6944	1.2845	15.4131
1222.8	0.895076	1.3426	0.058	0.0579	0.6944	1.2847	15.4156
1223	0.895218	1.3428	0.058	0.0579	0.6944	1.2850	15.4182
1223.2	0.89536	1.3430	0.058	0.0579	0.6944	1.2852	15.4208
1223.4	0.895502	1.3433	0.058	0.0579	0.6944	1.2854	15.4233
1223.6	0.895644	1.3435	0.058	0.0579	0.6944	1.2856	15.4259
1223.8	0.895785	1.3437	0.058	0.0579	0.6944	1.2858	15.4284
1224	0.895926	1.3439	0.058	0.0579	0.6944	1.2860	15.4310
1224.2	0.896068	1.3441	0.058	0.0579	0.6944	1.2862	15.4335
1224.4	0.896208	1.3443	0.058	0.0579	0.6944	1.2864	15.4360
1224.6	0.896349	1.3445	0.058	0.0579	0.6944	1.2867	15.4386
1224.8	0.89649	1.3447	0.058	0.0579	0.6944	1.2869	15.4411
1225	0.89663	1.3449	0.058	0.0579	0.6944	1.2871	15.4436
1225.2	0.89677	1.3452	0.058	0.0579	0.6944	1.2873	15.4462
1225.4	0.896911	1.3454	0.058	0.0579	0.6944	1.2875	15.4487
1225.6	0.89705	1.3456	0.058	0.0579	0.6944	1.2877	15.4512
1225.8	0.89719	1.3458	0.058	0.0579	0.6944	1.2879	15.4537
1226	0.89733	1.3460	0.058	0.0579	0.6944	1.2881	15.4562
1226.2	0.897469	1.3462	0.058	0.0579	0.6944	1.2883	15.4587
1226.4	0.897608	1.3464	0.058	0.0579	0.6944	1.2885	15.4612
1226.6	0.897747	1.3466	0.058	0.0579	0.6944	1.2888	15.4638
1226.8	0.897886	1.3468	0.058	0.0579	0.6944	1.2890	15.4663
1227	0.898024	1.3470	0.058	0.0579	0.6944	1.2892	15.4687
1227.2	0.898163	1.3472	0.058	0.0579	0.6944	1.2894	15.4712
1227.4	0.898301	1.3475	0.058	0.0579	0.6944	1.2896	15.4737
1227.6	0.898439	1.3477	0.058	0.0579	0.6944	1.2898	15.4762
1227.8	0.898577	1.3479	0.058	0.0579	0.6944	1.2900	15.4787
1228	0.898715	1.3481	0.058	0.0579	0.6944	1.2902	15.4812
1228.2	0.898853	1.3483	0.058	0.0579	0.6944	1.2904	15.4837
1228.4	0.89899	1.3485	0.058	0.0579	0.6944	1.2906	15.4861
1228.6	0.899127	1.3487	0.058	0.0579	0.6944	1.2908	15.4886
1228.8	0.899264	1.3489	0.058	0.0579	0.6944	1.2910	15.4911
1229	0.899401	1.3491	0.058	0.0579	0.6944	1.2912	15.4935
1229.2	0.899538	1.3493	0.058	0.0579	0.6944	1.2914	15.4960
1229.4	0.899675	1.3495	0.058	0.0579	0.6944	1.2916	15.4985
1229.6	0.899811	1.3497	0.058	0.0579	0.6944	1.2918	15.5009
1229.8	0.899947	1.3499	0.058	0.0579	0.6944	1.2921	15.5034

1230	0.900083	1.3501	0.058	0.0579	0.6944	1.2923	15.5058
1230.2	0.900219	1.3503	0.058	0.0579	0.6944	1.2925	15.5083
1230.4	0.900355	1.3505	0.058	0.0579	0.6944	1.2927	15.5107
1230.6	0.900491	1.3507	0.058	0.0579	0.6944	1.2929	15.5132
1230.8	0.900626	1.3509	0.058	0.0579	0.6944	1.2931	15.5156
1231	0.900761	1.3511	0.058	0.0579	0.6944	1.2933	15.5180
1231.2	0.900897	1.3513	0.058	0.0579	0.6944	1.2935	15.5205
1231.4	0.901032	1.3515	0.058	0.0579	0.6944	1.2937	15.5229
1231.6	0.901166	1.3517	0.058	0.0579	0.6944	1.2939	15.5253
1231.8	0.901301	1.3520	0.058	0.0579	0.6944	1.2941	15.5278
1232	0.901435	1.3522	0.058	0.0579	0.6944	1.2943	15.5302
1232.2	0.90157	1.3524	0.058	0.0579	0.6944	1.2945	15.5326
1232.4	0.901704	1.3526	0.058	0.0579	0.6944	1.2947	15.5350
1232.6	0.901838	1.3528	0.058	0.0579	0.6944	1.2949	15.5374
1232.8	0.901972	1.3530	0.058	0.0579	0.6944	1.2951	15.5398
1233	0.902105	1.3532	0.058	0.0579	0.6944	1.2953	15.5423
1233.2	0.902239	1.3534	0.058	0.0579	0.6944	1.2955	15.5447
1233.4	0.902372	1.3536	0.058	0.0579	0.6944	1.2957	15.5471
1233.6	0.902506	1.3538	0.058	0.0579	0.6944	1.2959	15.5495
1233.8	0.902639	1.3540	0.058	0.0579	0.6944	1.2961	15.5519
1234	0.902772	1.3542	0.058	0.0579	0.6944	1.2963	15.5542
1234.2	0.902904	1.3544	0.058	0.0579	0.6944	1.2965	15.5566
1234.4	0.903037	1.3546	0.058	0.0579	0.6944	1.2967	15.5590
1234.6	0.90317	1.3548	0.058	0.0579	0.6944	1.2969	15.5614
1234.8	0.903302	1.3550	0.058	0.0579	0.6944	1.2971	15.5638
1235	0.903434	1.3552	0.058	0.0579	0.6944	1.2973	15.5662
1235.2	0.903566	1.3553	0.058	0.0579	0.6944	1.2975	15.5686
1235.4	0.903698	1.3555	0.058	0.0579	0.6944	1.2977	15.5709
1235.6	0.90383	1.3557	0.058	0.0579	0.6944	1.2979	15.5733
1235.8	0.903961	1.3559	0.058	0.0579	0.6944	1.2981	15.5757
1236	0.904093	1.3561	0.058	0.0579	0.6944	1.2983	15.5780
1236.2	0.904224	1.3563	0.058	0.0579	0.6944	1.2985	15.5804
1236.4	0.904355	1.3565	0.058	0.0579	0.6944	1.2987	15.5828
1236.6	0.904486	1.3567	0.058	0.0579	0.6944	1.2989	15.5851
1236.8	0.904617	1.3569	0.058	0.0579	0.6944	1.2991	15.5875
1237	0.904748	1.3571	0.058	0.0579	0.6944	1.2993	15.5898
1237.2	0.904878	1.3573	0.058	0.0579	0.6944	1.2994	15.5922
1237.4	0.905009	1.3575	0.058	0.0579	0.6944	1.2996	15.5945
1237.6	0.905139	1.3577	0.058	0.0579	0.6944	1.2998	15.5969
1237.8	0.905269	1.3579	0.058	0.0579	0.6944	1.3000	15.5992
1238	0.905399	1.3581	0.058	0.0579	0.6944	1.3002	15.6016
1238.2	0.905529	1.3583	0.058	0.0579	0.6944	1.3004	15.6039
1238.4	0.905658	1.3585	0.058	0.0579	0.6944	1.3006	15.6062
1238.6	0.905788	1.3587	0.058	0.0579	0.6944	1.3008	15.6086
1238.8	0.905917	1.3589	0.058	0.0579	0.6944	1.3010	15.6109
1239	0.906047	1.3591	0.058	0.0579	0.6944	1.3012	15.6132
1239.2	0.906176	1.3593	0.058	0.0579	0.6944	1.3014	15.6156

1239.4	0.906305	1.3595	0.058	0.0579	0.6944	1.3016	15.6179
1239.6	0.906434	1.3597	0.058	0.0579	0.6944	1.3018	15.6202
1239.8	0.906562	1.3598	0.058	0.0579	0.6944	1.3020	15.6225
1240	0.906691	1.3600	0.058	0.0579	0.6944	1.3022	15.6248
1240.2	0.906819	1.3602	0.058	0.0579	0.6944	1.3024	15.6271
1240.4	0.906948	1.3604	0.058	0.0579	0.6944	1.3026	15.6295
1240.6	0.907076	1.3606	0.058	0.0579	0.6944	1.3027	15.6318
1240.8	0.907204	1.3608	0.058	0.0579	0.6944	1.3029	15.6341
1241	0.907332	1.3610	0.058	0.0579	0.6944	1.3031	15.6364
1241.2	0.90746	1.3612	0.058	0.0579	0.6944	1.3033	15.6387
1241.4	0.907587	1.3614	0.058	0.0579	0.6944	1.3035	15.6410
1241.6	0.907715	1.3616	0.058	0.0579	0.6944	1.3037	15.6433
1241.8	0.907842	1.3618	0.058	0.0579	0.6944	1.3039	15.6456
1242	0.907969	1.3620	0.058	0.0579	0.6944	1.3041	15.6479
1242.2	0.908096	1.3621	0.058	0.0579	0.6944	1.3043	15.6501
1242.4	0.908223	1.3623	0.058	0.0579	0.6944	1.3045	15.6524
1242.6	0.90835	1.3625	0.058	0.0579	0.6944	1.3047	15.6547
1242.8	0.908477	1.3627	0.058	0.0579	0.6944	1.3048	15.6570
1243	0.908604	1.3629	0.058	0.0579	0.6944	1.3050	15.6593
1243.2	0.90873	1.3631	0.058	0.0579	0.6944	1.3052	15.6616
1243.4	0.908856	1.3633	0.058	0.0579	0.6944	1.3054	15.6638
1243.6	0.908982	1.3635	0.058	0.0579	0.6944	1.3056	15.6661
1243.8	0.909109	1.3637	0.058	0.0579	0.6944	1.3058	15.6684
1244	0.909234	1.3639	0.058	0.0579	0.6944	1.3060	15.6706
1244.2	0.90936	1.3640	0.058	0.0579	0.6944	1.3062	15.6729
1244.4	0.909486	1.3642	0.058	0.0579	0.6944	1.3064	15.6752
1244.6	0.909611	1.3644	0.058	0.0579	0.6944	1.3065	15.6774
1244.8	0.909737	1.3646	0.058	0.0579	0.6944	1.3067	15.6797
1245	0.909862	1.3648	0.058	0.0579	0.6944	1.3069	15.6819
1245.2	0.909987	1.3650	0.058	0.0579	0.6944	1.3071	15.6842
1245.4	0.910112	1.3652	0.058	0.0579	0.6944	1.3073	15.6865
1245.6	0.910237	1.3654	0.058	0.0579	0.6944	1.3075	15.6887
1245.8	0.910362	1.3655	0.058	0.0579	0.6944	1.3077	15.6909
1246	0.910487	1.3657	0.058	0.0579	0.6944	1.3079	15.6932
1246.2	0.910611	1.3659	0.058	0.0579	0.6944	1.3080	15.6954
1246.4	0.910736	1.3661	0.058	0.0579	0.6944	1.3082	15.6977
1246.6	0.91086	1.3663	0.058	0.0579	0.6944	1.3084	15.6999
1246.8	0.910984	1.3665	0.058	0.0579	0.6944	1.3086	15.7022
1247	0.911108	1.3667	0.058	0.0579	0.6944	1.3088	15.7044
1247.2	0.911232	1.3668	0.058	0.0579	0.6944	1.3090	15.7066
1247.4	0.911356	1.3670	0.058	0.0579	0.6944	1.3092	15.7088
1247.6	0.911479	1.3672	0.058	0.0579	0.6944	1.3093	15.7111
1247.8	0.911603	1.3674	0.058	0.0579	0.6944	1.3095	15.7133
1248	0.911726	1.3676	0.058	0.0579	0.6944	1.3097	15.7155
1248.2	0.91185	1.3678	0.058	0.0579	0.6944	1.3099	15.7177
1248.4	0.911973	1.3680	0.058	0.0579	0.6944	1.3101	15.7200
1248.6	0.912096	1.3681	0.058	0.0579	0.6944	1.3103	15.7222

1248.8	0.912219	1.3683	0.058	0.0579	0.6944	1.3105	15.7244
1249	0.912342	1.3685	0.058	0.0579	0.6944	1.3106	15.7266
1249.2	0.912464	1.3687	0.058	0.0579	0.6944	1.3108	15.7288
1249.4	0.912587	1.3689	0.058	0.0579	0.6944	1.3110	15.7310
1249.6	0.912709	1.3691	0.058	0.0579	0.6944	1.3112	15.7332
1249.8	0.912832	1.3692	0.058	0.0579	0.6944	1.3114	15.7354
1250	0.912954	1.3694	0.058	0.0579	0.6944	1.3116	15.7376
1250.2	0.913076	1.3696	0.058	0.0579	0.6944	1.3117	15.7398
1250.4	0.913198	1.3698	0.058	0.0579	0.6944	1.3119	15.7420
1250.6	0.91332	1.3700	0.058	0.0579	0.6944	1.3121	15.7442
1250.8	0.913442	1.3702	0.058	0.0579	0.6944	1.3123	15.7464
1251	0.913563	1.3703	0.058	0.0579	0.6944	1.3125	15.7486
1251.2	0.913685	1.3705	0.058	0.0579	0.6944	1.3127	15.7508
1251.4	0.913806	1.3707	0.058	0.0579	0.6944	1.3128	15.7530
1251.6	0.913928	1.3709	0.058	0.0579	0.6944	1.3130	15.7552
1251.8	0.914049	1.3711	0.058	0.0579	0.6944	1.3132	15.7573
1252	0.91417	1.3713	0.058	0.0579	0.6944	1.3134	15.7595
1252.2	0.914291	1.3714	0.058	0.0579	0.6944	1.3136	15.7617
1252.4	0.914412	1.3716	0.058	0.0579	0.6944	1.3137	15.7639
1252.6	0.914533	1.3718	0.058	0.0579	0.6944	1.3139	15.7661
1252.8	0.914653	1.3720	0.058	0.0579	0.6944	1.3141	15.7682
1253	0.914774	1.3722	0.058	0.0579	0.6944	1.3143	15.7704
1253.2	0.914894	1.3723	0.058	0.0579	0.6944	1.3145	15.7726
1253.4	0.915014	1.3725	0.058	0.0579	0.6944	1.3147	15.7747
1253.6	0.915135	1.3727	0.058	0.0579	0.6944	1.3148	15.7769
1253.8	0.915255	1.3729	0.058	0.0579	0.6944	1.3150	15.7791
1254	0.915375	1.3731	0.058	0.0579	0.6944	1.3152	15.7812
1254.2	0.915494	1.3732	0.058	0.0579	0.6944	1.3154	15.7834
1254.4	0.915614	1.3734	0.058	0.0579	0.6944	1.3156	15.7855
1254.6	0.915734	1.3736	0.058	0.0579	0.6944	1.3157	15.7877
1254.8	0.915853	1.3738	0.058	0.0579	0.6944	1.3159	15.7898
1255	0.915973	1.3740	0.058	0.0579	0.6944	1.3161	15.7920
1255.2	0.916092	1.3741	0.058	0.0579	0.6944	1.3163	15.7941
1255.4	0.916211	1.3743	0.058	0.0579	0.6944	1.3164	15.7963
1255.6	0.91633	1.3745	0.058	0.0579	0.6944	1.3166	15.7984
1255.8	0.916449	1.3747	0.058	0.0579	0.6944	1.3168	15.8006
1256	0.916568	1.3749	0.058	0.0579	0.6944	1.3170	15.8027
1256.2	0.916687	1.3750	0.058	0.0579	0.6944	1.3172	15.8048
1256.4	0.916805	1.3752	0.058	0.0579	0.6944	1.3173	15.8070
1256.6	0.916924	1.3754	0.058	0.0579	0.6944	1.3175	15.8091
1256.8	0.917042	1.3756	0.058	0.0579	0.6944	1.3177	15.8113
1257	0.917161	1.3757	0.058	0.0579	0.6944	1.3179	15.8134
1257.2	0.917279	1.3759	0.058	0.0579	0.6944	1.3180	15.8155
1257.4	0.917397	1.3761	0.058	0.0579	0.6944	1.3182	15.8176
1257.6	0.917515	1.3763	0.058	0.0579	0.6944	1.3184	15.8198
1257.8	0.917633	1.3764	0.058	0.0579	0.6944	1.3186	15.8219
1258	0.917751	1.3766	0.058	0.0579	0.6944	1.3188	15.8240

1258.2	0.917869	1.3768	0.058	0.0579	0.6944	1.3189	15.8261
1258.4	0.917986	1.3770	0.058	0.0579	0.6944	1.3191	15.8282
1258.6	0.918104	1.3772	0.058	0.0579	0.6944	1.3193	15.8304
1258.8	0.918221	1.3773	0.058	0.0579	0.6944	1.3195	15.8325
1259	0.918338	1.3775	0.058	0.0579	0.6944	1.3196	15.8346
1259.2	0.918455	1.3777	0.058	0.0579	0.6944	1.3198	15.8367
1259.4	0.918573	1.3779	0.058	0.0579	0.6944	1.3200	15.8388
1259.6	0.91869	1.3780	0.058	0.0579	0.6944	1.3202	15.8409
1259.8	0.918806	1.3782	0.058	0.0579	0.6944	1.3203	15.8430
1260	0.918923	1.3784	0.058	0.0579	0.6944	1.3205	15.8451
1260.2	0.91904	1.3786	0.058	0.0579	0.6944	1.3207	15.8472
1260.4	0.919156	1.3787	0.058	0.0579	0.6944	1.3209	15.8493
1260.6	0.919273	1.3789	0.058	0.0579	0.6944	1.3210	15.8514
1260.8	0.919389	1.3791	0.058	0.0579	0.6944	1.3212	15.8535
1261	0.919506	1.3793	0.058	0.0579	0.6944	1.3214	15.8556
1261.2	0.919622	1.3794	0.058	0.0579	0.6944	1.3216	15.8577
1261.4	0.919738	1.3796	0.058	0.0579	0.6944	1.3217	15.8598
1261.6	0.919854	1.3798	0.058	0.0579	0.6944	1.3219	15.8619
1261.8	0.91997	1.3800	0.058	0.0579	0.6944	1.3221	15.8640
1262	0.920085	1.3801	0.058	0.0579	0.6944	1.3223	15.8661
1262.2	0.920201	1.3803	0.058	0.0579	0.6944	1.3224	15.8681
1262.4	0.920317	1.3805	0.058	0.0579	0.6944	1.3226	15.8702
1262.6	0.920432	1.3806	0.058	0.0579	0.6944	1.3228	15.8723
1262.8	0.920547	1.3808	0.058	0.0579	0.6944	1.3230	15.8744
1263	0.920663	1.3810	0.058	0.0579	0.6944	1.3231	15.8764
1263.2	0.920778	1.3812	0.058	0.0579	0.6944	1.3233	15.8785
1263.4	0.920893	1.3813	0.058	0.0579	0.6944	1.3235	15.8806
1263.6	0.921008	1.3815	0.058	0.0579	0.6944	1.3236	15.8827
1263.8	0.921123	1.3817	0.058	0.0579	0.6944	1.3238	15.8847
1264	0.921238	1.3819	0.058	0.0579	0.6944	1.3240	15.8868
1264.2	0.921352	1.3820	0.058	0.0579	0.6944	1.3242	15.8889
1264.4	0.921467	1.3822	0.058	0.0579	0.6944	1.3243	15.8909
1264.6	0.921581	1.3824	0.058	0.0579	0.6944	1.3245	15.8930
1264.8	0.921696	1.3825	0.058	0.0579	0.6944	1.3247	15.8951
1265	0.92181	1.3827	0.058	0.0579	0.6944	1.3248	15.8971
1265.2	0.921924	1.3829	0.058	0.0579	0.6944	1.3250	15.8992
1265.4	0.922039	1.3831	0.058	0.0579	0.6944	1.3252	15.9012
1265.6	0.922153	1.3832	0.058	0.0579	0.6944	1.3254	15.9033
1265.8	0.922266	1.3834	0.058	0.0579	0.6944	1.3255	15.9053
1266	0.92238	1.3836	0.058	0.0579	0.6944	1.3257	15.9074
1266.2	0.922494	1.3837	0.058	0.0579	0.6944	1.3259	15.9094
1266.4	0.922608	1.3839	0.058	0.0579	0.6944	1.3260	15.9115
1266.6	0.922721	1.3841	0.058	0.0579	0.6944	1.3262	15.9135
1266.8	0.922835	1.3843	0.058	0.0579	0.6944	1.3264	15.9156
1267	0.922948	1.3844	0.058	0.0579	0.6944	1.3266	15.9176
1267.2	0.923061	1.3846	0.058	0.0579	0.6944	1.3267	15.9196
1267.4	0.923175	1.3848	0.058	0.0579	0.6944	1.3269	15.9217

1267.6	0.923288	1.3849	0.058	0.0579	0.6944	1.3271	15.9237
1267.8	0.923401	1.3851	0.058	0.0579	0.6944	1.3272	15.9258
1268	0.923514	1.3853	0.058	0.0579	0.6944	1.3274	15.9278
1268.2	0.923626	1.3854	0.058	0.0579	0.6944	1.3276	15.9298
1268.4	0.923739	1.3856	0.058	0.0579	0.6944	1.3277	15.9318
1268.6	0.923852	1.3858	0.058	0.0579	0.6944	1.3279	15.9339
1268.8	0.923964	1.3859	0.058	0.0579	0.6944	1.3281	15.9359
1269	0.924077	1.3861	0.058	0.0579	0.6944	1.3282	15.9379
1269.2	0.924189	1.3863	0.058	0.0579	0.6944	1.3284	15.9399
1269.4	0.924301	1.3865	0.058	0.0579	0.6944	1.3286	15.9420
1269.6	0.924414	1.3866	0.058	0.0579	0.6944	1.3288	15.9440
1269.8	0.924526	1.3868	0.058	0.0579	0.6944	1.3289	15.9460
1270	0.924638	1.3870	0.058	0.0579	0.6944	1.3291	15.9480
1270.2	0.92475	1.3871	0.058	0.0579	0.6944	1.3293	15.9500
1270.4	0.924861	1.3873	0.058	0.0579	0.6944	1.3294	15.9521
1270.6	0.924973	1.3875	0.058	0.0579	0.6944	1.3296	15.9541
1270.8	0.925085	1.3876	0.058	0.0579	0.6944	1.3298	15.9561
1271	0.925196	1.3878	0.058	0.0579	0.6944	1.3299	15.9581
1271.2	0.925308	1.3880	0.058	0.0579	0.6944	1.3301	15.9601
1271.4	0.925419	1.3881	0.058	0.0579	0.6944	1.3303	15.9621
1271.6	0.925531	1.3883	0.058	0.0579	0.6944	1.3304	15.9641
1271.8	0.925642	1.3885	0.058	0.0579	0.6944	1.3306	15.9661
1272	0.925753	1.3886	0.058	0.0579	0.6944	1.3308	15.9681
1272.2	0.925864	1.3888	0.058	0.0579	0.6944	1.3309	15.9701
1272.4	0.925975	1.3890	0.058	0.0579	0.6944	1.3311	15.9721
1272.6	0.926086	1.3891	0.058	0.0579	0.6944	1.3313	15.9741
1272.8	0.926197	1.3893	0.058	0.0579	0.6944	1.3314	15.9761
1273	0.926307	1.3895	0.058	0.0579	0.6944	1.3316	15.9781
1273.2	0.926418	1.3896	0.058	0.0579	0.6944	1.3318	15.9801
1273.4	0.926528	1.3898	0.058	0.0579	0.6944	1.3319	15.9821
1273.6	0.926639	1.3900	0.058	0.0579	0.6944	1.3321	15.9841
1273.8	0.926749	1.3901	0.058	0.0579	0.6944	1.3323	15.9860
1274	0.926859	1.3903	0.058	0.0579	0.6944	1.3324	15.9880
1274.2	0.92697	1.3905	0.058	0.0579	0.6944	1.3326	15.9900
1274.4	0.92708	1.3906	0.058	0.0579	0.6944	1.3327	15.9920
1274.6	0.92719	1.3908	0.058	0.0579	0.6944	1.3329	15.9940
1274.8	0.9273	1.3909	0.058	0.0579	0.6944	1.3331	15.9960
1275	0.927409	1.3911	0.058	0.0579	0.6944	1.3332	15.9979
1275.2	0.927519	1.3913	0.058	0.0579	0.6944	1.3334	15.9999
1275.4	0.927629	1.3914	0.058	0.0579	0.6944	1.3336	16.0019
1275.6	0.927738	1.3916	0.058	0.0579	0.6944	1.3337	16.0039
1275.8	0.927848	1.3918	0.058	0.0579	0.6944	1.3339	16.0058
1276	0.927957	1.3919	0.058	0.0579	0.6944	1.3341	16.0078
1276.2	0.928067	1.3921	0.058	0.0579	0.6944	1.3342	16.0098
1276.4	0.928176	1.3923	0.058	0.0579	0.6944	1.3344	16.0117
1276.6	0.928285	1.3924	0.058	0.0579	0.6944	1.3346	16.0137
1276.8	0.928394	1.3926	0.058	0.0579	0.6944	1.3347	16.0157

1277	0.928503	1.3928	0.058	0.0579	0.6944	1.3349	16.0176
1277.2	0.928612	1.3929	0.058	0.0579	0.6944	1.3350	16.0196
1277.4	0.928721	1.3931	0.058	0.0579	0.6944	1.3352	16.0216
1277.6	0.92883	1.3932	0.058	0.0579	0.6944	1.3354	16.0235
1277.8	0.928939	1.3934	0.058	0.0579	0.6944	1.3355	16.0255
1278	0.929047	1.3936	0.058	0.0579	0.6944	1.3357	16.0274
1278.2	0.929156	1.3937	0.058	0.0579	0.6944	1.3359	16.0294
1278.4	0.929264	1.3939	0.058	0.0579	0.6944	1.3360	16.0313
1278.6	0.929372	1.3941	0.058	0.0579	0.6944	1.3362	16.0333
1278.8	0.929481	1.3942	0.058	0.0579	0.6944	1.3364	16.0352
1279	0.929589	1.3944	0.058	0.0579	0.6944	1.3365	16.0372
1279.2	0.929697	1.3945	0.058	0.0579	0.6944	1.3367	16.0391
1279.4	0.929805	1.3947	0.058	0.0579	0.6944	1.3368	16.0411
1279.6	0.929913	1.3949	0.058	0.0579	0.6944	1.3370	16.0430
1279.8	0.930021	1.3950	0.058	0.0579	0.6944	1.3372	16.0450
1280	0.930129	1.3952	0.058	0.0579	0.6944	1.3373	16.0469
1280.2	0.930236	1.3954	0.058	0.0579	0.6944	1.3375	16.0488
1280.4	0.930344	1.3955	0.058	0.0579	0.6944	1.3376	16.0508
1280.6	0.930452	1.3957	0.058	0.0579	0.6944	1.3378	16.0527
1280.8	0.930559	1.3958	0.058	0.0579	0.6944	1.3380	16.0547
1281	0.930667	1.3960	0.058	0.0579	0.6944	1.3381	16.0566
1281.2	0.930774	1.3962	0.058	0.0579	0.6944	1.3383	16.0585
1281.4	0.930881	1.3963	0.058	0.0579	0.6944	1.3385	16.0605
1281.6	0.930988	1.3965	0.058	0.0579	0.6944	1.3386	16.0624
1281.8	0.931095	1.3966	0.058	0.0579	0.6944	1.3388	16.0643
1282	0.931202	1.3968	0.058	0.0579	0.6944	1.3389	16.0662
1282.2	0.931309	1.3970	0.058	0.0579	0.6944	1.3391	16.0682
1282.4	0.931416	1.3971	0.058	0.0579	0.6944	1.3393	16.0701
1282.6	0.931523	1.3973	0.058	0.0579	0.6944	1.3394	16.0720
1282.8	0.93163	1.3974	0.058	0.0579	0.6944	1.3396	16.0739
1283	0.931736	1.3976	0.058	0.0579	0.6944	1.3397	16.0759
1283.2	0.931843	1.3978	0.058	0.0579	0.6944	1.3399	16.0778
1283.4	0.931949	1.3979	0.058	0.0579	0.6944	1.3401	16.0797
1283.6	0.932056	1.3981	0.058	0.0579	0.6944	1.3402	16.0816
1283.8	0.932162	1.3982	0.058	0.0579	0.6944	1.3404	16.0835
1284	0.932268	1.3984	0.058	0.0579	0.6944	1.3405	16.0854
1284.2	0.932375	1.3986	0.058	0.0579	0.6944	1.3407	16.0873
1284.4	0.932481	1.3987	0.058	0.0579	0.6944	1.3409	16.0893
1284.6	0.932587	1.3989	0.058	0.0579	0.6944	1.3410	16.0912
1284.8	0.932693	1.3990	0.058	0.0579	0.6944	1.3412	16.0931
1285	0.932799	1.3992	0.058	0.0579	0.6944	1.3413	16.0950
1285.2	0.932904	1.3994	0.058	0.0579	0.6944	1.3415	16.0969
1285.4	0.93301	1.3995	0.058	0.0579	0.6944	1.3416	16.0988
1285.6	0.933116	1.3997	0.058	0.0579	0.6944	1.3418	16.1007
1285.8	0.933221	1.3998	0.058	0.0579	0.6944	1.3420	16.1026
1286	0.933327	1.4000	0.058	0.0579	0.6944	1.3421	16.1045
1286.2	0.933432	1.4001	0.058	0.0579	0.6944	1.3423	16.1064

1286.4	0.933538	1.4003	0.058	0.0579	0.6944	1.3424	16.1083
1286.6	0.933643	1.4005	0.058	0.0579	0.6944	1.3426	16.1102
1286.8	0.933748	1.4006	0.058	0.0579	0.6944	1.3428	16.1121
1287	0.933853	1.4008	0.058	0.0579	0.6944	1.3429	16.1140
1287.2	0.933958	1.4009	0.058	0.0579	0.6944	1.3431	16.1159
1287.4	0.934063	1.4011	0.058	0.0579	0.6944	1.3432	16.1177
1287.6	0.934168	1.4013	0.058	0.0579	0.6944	1.3434	16.1196
1287.8	0.934273	1.4014	0.058	0.0579	0.6944	1.3435	16.1215
1288	0.934378	1.4016	0.058	0.0579	0.6944	1.3437	16.1234
1288.2	0.934483	1.4017	0.058	0.0579	0.6944	1.3439	16.1253
1288.4	0.934587	1.4019	0.058	0.0579	0.6944	1.3440	16.1272
1288.6	0.934692	1.4020	0.058	0.0579	0.6944	1.3442	16.1291
1288.8	0.934796	1.4022	0.058	0.0579	0.6944	1.3443	16.1309
1289	0.934901	1.4024	0.058	0.0579	0.6944	1.3445	16.1328
1289.2	0.935005	1.4025	0.058	0.0579	0.6944	1.3446	16.1347
1289.4	0.935109	1.4027	0.058	0.0579	0.6944	1.3448	16.1366
1289.6	0.935213	1.4028	0.058	0.0579	0.6944	1.3449	16.1385
1289.8	0.935318	1.4030	0.058	0.0579	0.6944	1.3451	16.1403
1290	0.935422	1.4031	0.058	0.0579	0.6944	1.3453	16.1422
1290.2	0.935526	1.4033	0.058	0.0579	0.6944	1.3454	16.1441
1290.4	0.935629	1.4034	0.058	0.0579	0.6944	1.3456	16.1460
1290.6	0.935733	1.4036	0.058	0.0579	0.6944	1.3457	16.1478
1290.8	0.935837	1.4038	0.058	0.0579	0.6944	1.3459	16.1497
1291	0.935941	1.4039	0.058	0.0579	0.6944	1.3460	16.1516
1291.2	0.936044	1.4041	0.058	0.0579	0.6944	1.3462	16.1534
1291.4	0.936148	1.4042	0.058	0.0579	0.6944	1.3464	16.1553
1291.6	0.936251	1.4044	0.058	0.0579	0.6944	1.3465	16.1572
1291.8	0.936355	1.4045	0.058	0.0579	0.6944	1.3467	16.1590
1292	0.936458	1.4047	0.058	0.0579	0.6944	1.3468	16.1609
1292.2	0.936562	1.4048	0.058	0.0579	0.6944	1.3470	16.1627
1292.4	0.936665	1.4050	0.058	0.0579	0.6944	1.3471	16.1646
1292.6	0.936768	1.4052	0.058	0.0579	0.6944	1.3473	16.1664
1292.8	0.936871	1.4053	0.058	0.0579	0.6944	1.3474	16.1683
1293	0.936974	1.4055	0.058	0.0579	0.6944	1.3476	16.1702
1293.2	0.937077	1.4056	0.058	0.0579	0.6944	1.3477	16.1720
1293.4	0.93718	1.4058	0.058	0.0579	0.6944	1.3479	16.1739
1293.6	0.937283	1.4059	0.058	0.0579	0.6944	1.3481	16.1757
1293.8	0.937385	1.4061	0.058	0.0579	0.6944	1.3482	16.1776
1294	0.937488	1.4062	0.058	0.0579	0.6944	1.3484	16.1794
1294.2	0.937591	1.4064	0.058	0.0579	0.6944	1.3485	16.1813
1294.4	0.937693	1.4065	0.058	0.0579	0.6944	1.3487	16.1831
1294.6	0.937796	1.4067	0.058	0.0579	0.6944	1.3488	16.1850
1294.8	0.937898	1.4068	0.058	0.0579	0.6944	1.3490	16.1868
1295	0.938	1.4070	0.058	0.0579	0.6944	1.3491	16.1886
1295.2	0.938103	1.4072	0.058	0.0579	0.6944	1.3493	16.1905
1295.4	0.938205	1.4073	0.058	0.0579	0.6944	1.3494	16.1923
1295.6	0.938307	1.4075	0.058	0.0579	0.6944	1.3496	16.1942

1295.8	0.938409	1.4076	0.058	0.0579	0.6944	1.3497	16.1960
1296	0.938511	1.4078	0.058	0.0579	0.6944	1.3499	16.1978
1296.2	0.938613	1.4079	0.058	0.0579	0.6944	1.3500	16.1997
1296.4	0.938715	1.4081	0.058	0.0579	0.6944	1.3502	16.2015
1296.6	0.938817	1.4082	0.058	0.0579	0.6944	1.3504	16.2033
1296.8	0.938918	1.4084	0.058	0.0579	0.6944	1.3505	16.2052
1297	0.93902	1.4085	0.058	0.0579	0.6944	1.3507	16.2070
1297.2	0.939122	1.4087	0.058	0.0579	0.6944	1.3508	16.2088
1297.4	0.939223	1.4088	0.058	0.0579	0.6944	1.3510	16.2107
1297.6	0.939325	1.4090	0.058	0.0579	0.6944	1.3511	16.2125
1297.8	0.939426	1.4091	0.058	0.0579	0.6944	1.3513	16.2143
1298	0.939527	1.4093	0.058	0.0579	0.6944	1.3514	16.2161
1298.2	0.939629	1.4094	0.058	0.0579	0.6944	1.3516	16.2180
1298.4	0.93973	1.4096	0.058	0.0579	0.6944	1.3517	16.2198
1298.6	0.939831	1.4097	0.058	0.0579	0.6944	1.3519	16.2216
1298.8	0.939932	1.4099	0.058	0.0579	0.6944	1.3520	16.2234
1299	0.940033	1.4100	0.058	0.0579	0.6944	1.3522	16.2252
1299.2	0.940134	1.4102	0.058	0.0579	0.6944	1.3523	16.2271
1299.4	0.940235	1.4104	0.058	0.0579	0.6944	1.3525	16.2289
1299.6	0.940336	1.4105	0.058	0.0579	0.6944	1.3526	16.2307
1299.8	0.940436	1.4107	0.058	0.0579	0.6944	1.3528	16.2325
1300	0.940537	1.4108	0.058	0.0579	0.6944	1.3529	16.2343
1300.2	0.940638	1.4110	0.058	0.0579	0.6944	1.3531	16.2361
1300.4	0.940738	1.4111	0.058	0.0579	0.6944	1.3532	16.2379
1300.6	0.940839	1.4113	0.058	0.0579	0.6944	1.3534	16.2397
1300.8	0.940939	1.4114	0.058	0.0579	0.6944	1.3535	16.2416
1301	0.941039	1.4116	0.058	0.0579	0.6944	1.3537	16.2434
1301.2	0.94114	1.4117	0.058	0.0579	0.6944	1.3538	16.2452
1301.4	0.94124	1.4119	0.058	0.0579	0.6944	1.3540	16.2470
1301.6	0.94134	1.4120	0.058	0.0579	0.6944	1.3541	16.2488
1301.8	0.94144	1.4122	0.058	0.0579	0.6944	1.3543	16.2506
1302	0.94154	1.4123	0.058	0.0579	0.6944	1.3544	16.2524
1302.2	0.94164	1.4125	0.058	0.0579	0.6944	1.3546	16.2542
1302.4	0.94174	1.4126	0.058	0.0579	0.6944	1.3547	16.2560
1302.6	0.94184	1.4128	0.058	0.0579	0.6944	1.3549	16.2578
1302.8	0.94194	1.4129	0.058	0.0579	0.6944	1.3550	16.2596
1303	0.94204	1.4131	0.058	0.0579	0.6944	1.3552	16.2614
1303.2	0.942139	1.4132	0.058	0.0579	0.6944	1.3553	16.2632
1303.4	0.942239	1.4134	0.058	0.0579	0.6944	1.3555	16.2650
1303.6	0.942339	1.4135	0.058	0.0579	0.6944	1.3556	16.2668
1303.8	0.942438	1.4137	0.058	0.0579	0.6944	1.3558	16.2685
1304	0.942537	1.4138	0.058	0.0579	0.6944	1.3559	16.2703
1304.2	0.942637	1.4140	0.058	0.0579	0.6944	1.3561	16.2721
1304.4	0.942736	1.4141	0.058	0.0579	0.6944	1.3562	16.2739
1304.6	0.942835	1.4143	0.058	0.0579	0.6944	1.3564	16.2757
1304.8	0.942935	1.4144	0.058	0.0579	0.6944	1.3565	16.2775
1305	0.943034	1.4146	0.058	0.0579	0.6944	1.3567	16.2793

1305.2	0.943133	1.4147	0.058	0.0579	0.6944	1.3568	16.2811
1305.4	0.943232	1.4148	0.058	0.0579	0.6944	1.3570	16.2828
1305.6	0.943331	1.4150	0.058	0.0579	0.6944	1.3571	16.2846
1305.8	0.94343	1.4151	0.058	0.0579	0.6944	1.3573	16.2864
1306	0.943528	1.4153	0.058	0.0579	0.6944	1.3574	16.2882
1306.2	0.943627	1.4154	0.058	0.0579	0.6944	1.3576	16.2900
1306.4	0.943726	1.4156	0.058	0.0579	0.6944	1.3577	16.2917
1306.6	0.943825	1.4157	0.058	0.0579	0.6944	1.3579	16.2935
1306.8	0.943923	1.4159	0.058	0.0579	0.6944	1.3580	16.2953
1307	0.944022	1.4160	0.058	0.0579	0.6944	1.3582	16.2971
1307.2	0.94412	1.4162	0.058	0.0579	0.6944	1.3583	16.2988
1307.4	0.944219	1.4163	0.058	0.0579	0.6944	1.3585	16.3006
1307.6	0.944317	1.4165	0.058	0.0579	0.6944	1.3586	16.3024
1307.8	0.944415	1.4166	0.058	0.0579	0.6944	1.3588	16.3041
1308	0.944513	1.4168	0.058	0.0579	0.6944	1.3589	16.3059
1308.2	0.944612	1.4169	0.058	0.0579	0.6944	1.3590	16.3077
1308.4	0.94471	1.4171	0.058	0.0579	0.6944	1.3592	16.3094
1308.6	0.944808	1.4172	0.058	0.0579	0.6944	1.3593	16.3112
1308.8	0.944906	1.4174	0.058	0.0579	0.6944	1.3595	16.3130
1309	0.945004	1.4175	0.058	0.0579	0.6944	1.3596	16.3147
1309.2	0.945101	1.4177	0.058	0.0579	0.6944	1.3598	16.3165
1309.4	0.945199	1.4178	0.058	0.0579	0.6944	1.3599	16.3183
1309.6	0.945297	1.4179	0.058	0.0579	0.6944	1.3601	16.3200
1309.8	0.945395	1.4181	0.058	0.0579	0.6944	1.3602	16.3218
1310	0.945492	1.4182	0.058	0.0579	0.6944	1.3604	16.3235
1310.2	0.94559	1.4184	0.058	0.0579	0.6944	1.3605	16.3253
1310.4	0.945687	1.4185	0.058	0.0579	0.6944	1.3607	16.3271
1310.6	0.945785	1.4187	0.058	0.0579	0.6944	1.3608	16.3288
1310.8	0.945882	1.4188	0.058	0.0579	0.6944	1.3610	16.3306
1311	0.94598	1.4190	0.058	0.0579	0.6944	1.3611	16.3323
1311.2	0.946077	1.4191	0.058	0.0579	0.6944	1.3612	16.3341
1311.4	0.946174	1.4193	0.058	0.0579	0.6944	1.3614	16.3358
1311.6	0.946271	1.4194	0.058	0.0579	0.6944	1.3615	16.3376
1311.8	0.946369	1.4196	0.058	0.0579	0.6944	1.3617	16.3393
1312	0.946466	1.4197	0.058	0.0579	0.6944	1.3618	16.3411
1312.2	0.946563	1.4198	0.058	0.0579	0.6944	1.3620	16.3428
1312.4	0.94666	1.4200	0.058	0.0579	0.6944	1.3621	16.3446
1312.6	0.946756	1.4201	0.058	0.0579	0.6944	1.3623	16.3463
1312.8	0.946853	1.4203	0.058	0.0579	0.6944	1.3624	16.3480
1313	0.94695	1.4204	0.058	0.0579	0.6944	1.3626	16.3498
1313.2	0.947047	1.4206	0.058	0.0579	0.6944	1.3627	16.3515
1313.4	0.947143	1.4207	0.058	0.0579	0.6944	1.3628	16.3533
1313.6	0.94724	1.4209	0.058	0.0579	0.6944	1.3630	16.3550
1313.8	0.947337	1.4210	0.058	0.0579	0.6944	1.3631	16.3567
1314	0.947433	1.4211	0.058	0.0579	0.6944	1.3633	16.3585
1314.2	0.94753	1.4213	0.058	0.0579	0.6944	1.3634	16.3602
1314.4	0.947626	1.4214	0.058	0.0579	0.6944	1.3636	16.3620

1314.6	0.947722	1.4216	0.058	0.0579	0.6944	1.3637	16.3637
1314.8	0.947819	1.4217	0.058	0.0579	0.6944	1.3639	16.3654
1315	0.947915	1.4219	0.058	0.0579	0.6944	1.3640	16.3672
1315.2	0.948011	1.4220	0.058	0.0579	0.6944	1.3641	16.3689
1315.4	0.948107	1.4222	0.058	0.0579	0.6944	1.3643	16.3706
1315.6	0.948203	1.4223	0.058	0.0579	0.6944	1.3644	16.3723
1315.8	0.948299	1.4224	0.058	0.0579	0.6944	1.3646	16.3741
1316	0.948395	1.4226	0.058	0.0579	0.6944	1.3647	16.3758
1316.2	0.948491	1.4227	0.058	0.0579	0.6944	1.3649	16.3775
1316.4	0.948587	1.4229	0.058	0.0579	0.6944	1.3650	16.3793
1316.6	0.948682	1.4230	0.058	0.0579	0.6944	1.3652	16.3810
1316.8	0.948778	1.4232	0.058	0.0579	0.6944	1.3653	16.3827
1317	0.948874	1.4233	0.058	0.0579	0.6944	1.3654	16.3844
1317.2	0.948969	1.4235	0.058	0.0579	0.6944	1.3656	16.3861
1317.4	0.949065	1.4236	0.058	0.0579	0.6944	1.3657	16.3879
1317.6	0.949161	1.4237	0.058	0.0579	0.6944	1.3659	16.3896
1317.8	0.949256	1.4239	0.058	0.0579	0.6944	1.3660	16.3913
1318	0.949351	1.4240	0.058	0.0579	0.6944	1.3662	16.3930
1318.2	0.949447	1.4242	0.058	0.0579	0.6944	1.3663	16.3947
1318.4	0.949542	1.4243	0.058	0.0579	0.6944	1.3664	16.3965
1318.6	0.949637	1.4245	0.058	0.0579	0.6944	1.3666	16.3982
1318.8	0.949732	1.4246	0.058	0.0579	0.6944	1.3667	16.3999
1319	0.949828	1.4247	0.058	0.0579	0.6944	1.3669	16.4016
1319.2	0.949923	1.4249	0.058	0.0579	0.6944	1.3670	16.4033
1319.4	0.950018	1.4250	0.058	0.0579	0.6944	1.3672	16.4050
1319.6	0.950113	1.4252	0.058	0.0579	0.6944	1.3673	16.4067
1319.8	0.950208	1.4253	0.058	0.0579	0.6944	1.3674	16.4084
1320	0.950302	1.4255	0.058	0.0579	0.6944	1.3676	16.4101
1320.2	0.950397	1.4256	0.058	0.0579	0.6944	1.3677	16.4119
1320.4	0.950492	1.4257	0.058	0.0579	0.6944	1.3679	16.4136
1320.6	0.950587	1.4259	0.058	0.0579	0.6944	1.3680	16.4153
1320.8	0.950681	1.4260	0.058	0.0579	0.6944	1.3682	16.4170
1321	0.950776	1.4262	0.058	0.0579	0.6944	1.3683	16.4187
1321.2	0.95087	1.4263	0.058	0.0579	0.6944	1.3684	16.4204
1321.4	0.950965	1.4264	0.058	0.0579	0.6944	1.3686	16.4221
1321.6	0.951059	1.4266	0.058	0.0579	0.6944	1.3687	16.4238
1321.8	0.951154	1.4267	0.058	0.0579	0.6944	1.3689	16.4255
1322	0.951248	1.4269	0.058	0.0579	0.6944	1.3690	16.4272
1322.2	0.951342	1.4270	0.058	0.0579	0.6944	1.3691	16.4289
1322.4	0.951437	1.4272	0.058	0.0579	0.6944	1.3693	16.4306
1322.6	0.951531	1.4273	0.058	0.0579	0.6944	1.3694	16.4323
1322.8	0.951625	1.4274	0.058	0.0579	0.6944	1.3696	16.4340
1323	0.951719	1.4276	0.058	0.0579	0.6944	1.3697	16.4357
1323.2	0.951813	1.4277	0.058	0.0579	0.6944	1.3698	16.4373
1323.4	0.951907	1.4279	0.058	0.0579	0.6944	1.3700	16.4390
1323.6	0.952001	1.4280	0.058	0.0579	0.6944	1.3701	16.4407
1323.8	0.952095	1.4281	0.058	0.0579	0.6944	1.3703	16.4424

1324	0.952189	1.4283	0.058	0.0579	0.6944	1.3704	16.4441
1324.2	0.952282	1.4284	0.058	0.0579	0.6944	1.3706	16.4458
1324.4	0.952376	1.4286	0.058	0.0579	0.6944	1.3707	16.4475
1324.6	0.95247	1.4287	0.058	0.0579	0.6944	1.3708	16.4492
1324.8	0.952563	1.4288	0.058	0.0579	0.6944	1.3710	16.4509
1325	0.952657	1.4290	0.058	0.0579	0.6944	1.3711	16.4525
1325.2	0.95275	1.4291	0.058	0.0579	0.6944	1.3713	16.4542
1325.4	0.952844	1.4293	0.058	0.0579	0.6944	1.3714	16.4559
1325.6	0.952937	1.4294	0.058	0.0579	0.6944	1.3715	16.4576
1325.8	0.953031	1.4295	0.058	0.0579	0.6944	1.3717	16.4593
1326	0.953124	1.4297	0.058	0.0579	0.6944	1.3718	16.4609
1326.2	0.953217	1.4298	0.058	0.0579	0.6944	1.3720	16.4626
1326.4	0.95331	1.4300	0.058	0.0579	0.6944	1.3721	16.4643
1326.6	0.953404	1.4301	0.058	0.0579	0.6944	1.3722	16.4660
1326.8	0.953497	1.4302	0.058	0.0579	0.6944	1.3724	16.4677
1327	0.95359	1.4304	0.058	0.0579	0.6944	1.3725	16.4693
1327.2	0.953683	1.4305	0.058	0.0579	0.6944	1.3727	16.4710
1327.4	0.953776	1.4307	0.058	0.0579	0.6944	1.3728	16.4727
1327.6	0.953869	1.4308	0.058	0.0579	0.6944	1.3729	16.4744
1327.8	0.953961	1.4309	0.058	0.0579	0.6944	1.3731	16.4760
1328	0.954054	1.4311	0.058	0.0579	0.6944	1.3732	16.4777
1328.2	0.954147	1.4312	0.058	0.0579	0.6944	1.3734	16.4794
1328.4	0.95424	1.4314	0.058	0.0579	0.6944	1.3735	16.4810
1328.6	0.954332	1.4315	0.058	0.0579	0.6944	1.3736	16.4827
1328.8	0.954425	1.4316	0.058	0.0579	0.6944	1.3738	16.4844
1329	0.954518	1.4318	0.058	0.0579	0.6944	1.3739	16.4860
1329.2	0.95461	1.4319	0.058	0.0579	0.6944	1.3740	16.4877
1329.4	0.954703	1.4321	0.058	0.0579	0.6944	1.3742	16.4894
1329.6	0.954795	1.4322	0.058	0.0579	0.6944	1.3743	16.4910
1329.8	0.954887	1.4323	0.058	0.0579	0.6944	1.3745	16.4927
1330	0.95498	1.4325	0.058	0.0579	0.6944	1.3746	16.4944
1330.2	0.955072	1.4326	0.058	0.0579	0.6944	1.3747	16.4960
1330.4	0.955164	1.4327	0.058	0.0579	0.6944	1.3749	16.4977
1330.6	0.955256	1.4329	0.058	0.0579	0.6944	1.3750	16.4993
1330.8	0.955348	1.4330	0.058	0.0579	0.6944	1.3752	16.5010
1331	0.95544	1.4332	0.058	0.0579	0.6944	1.3753	16.5027
1331.2	0.955532	1.4333	0.058	0.0579	0.6944	1.3754	16.5043
1331.4	0.955624	1.4334	0.058	0.0579	0.6944	1.3756	16.5060
1331.6	0.955716	1.4336	0.058	0.0579	0.6944	1.3757	16.5076
1331.8	0.955808	1.4337	0.058	0.0579	0.6944	1.3758	16.5093
1332	0.9559	1.4339	0.058	0.0579	0.6944	1.3760	16.5109
1332.2	0.955992	1.4340	0.058	0.0579	0.6944	1.3761	16.5126
1332.4	0.956084	1.4341	0.058	0.0579	0.6944	1.3763	16.5142
1332.6	0.956175	1.4343	0.058	0.0579	0.6944	1.3764	16.5159
1332.8	0.956267	1.4344	0.058	0.0579	0.6944	1.3765	16.5175
1333	0.956359	1.4345	0.058	0.0579	0.6944	1.3767	16.5192
1333.2	0.95645	1.4347	0.058	0.0579	0.6944	1.3768	16.5208

1333.4	0.956542	1.4348	0.058	0.0579	0.6944	1.3769	16.5225
1333.6	0.956633	1.4349	0.058	0.0579	0.6944	1.3771	16.5241
1333.8	0.956724	1.4351	0.058	0.0579	0.6944	1.3772	16.5258
1334	0.956816	1.4352	0.058	0.0579	0.6944	1.3774	16.5274
1334.2	0.956907	1.4354	0.058	0.0579	0.6944	1.3775	16.5291
1334.4	0.956998	1.4355	0.058	0.0579	0.6944	1.3776	16.5307
1334.6	0.95709	1.4356	0.058	0.0579	0.6944	1.3778	16.5323
1334.8	0.957181	1.4358	0.058	0.0579	0.6944	1.3779	16.5340
1335	0.957272	1.4359	0.058	0.0579	0.6944	1.3780	16.5356
1335.2	0.957363	1.4360	0.058	0.0579	0.6944	1.3782	16.5373
1335.4	0.957454	1.4362	0.058	0.0579	0.6944	1.3783	16.5389
1335.6	0.957545	1.4363	0.058	0.0579	0.6944	1.3784	16.5405
1335.8	0.957636	1.4365	0.058	0.0579	0.6944	1.3786	16.5422
1336	0.957727	1.4366	0.058	0.0579	0.6944	1.3787	16.5438
1336.2	0.957818	1.4367	0.058	0.0579	0.6944	1.3789	16.5455
1336.4	0.957908	1.4369	0.058	0.0579	0.6944	1.3790	16.5471
1336.6	0.957999	1.4370	0.058	0.0579	0.6944	1.3791	16.5487
1336.8	0.95809	1.4371	0.058	0.0579	0.6944	1.3793	16.5504
1337	0.958181	1.4373	0.058	0.0579	0.6944	1.3794	16.5520
1337.2	0.958271	1.4374	0.058	0.0579	0.6944	1.3795	16.5536
1337.4	0.958362	1.4375	0.058	0.0579	0.6944	1.3797	16.5553
1337.6	0.958452	1.4377	0.058	0.0579	0.6944	1.3798	16.5569
1337.8	0.958543	1.4378	0.058	0.0579	0.6944	1.3799	16.5585
1338	0.958633	1.4379	0.058	0.0579	0.6944	1.3801	16.5601
1338.2	0.958723	1.4381	0.058	0.0579	0.6944	1.3802	16.5618
1338.4	0.958814	1.4382	0.058	0.0579	0.6944	1.3804	16.5634
1338.6	0.958904	1.4384	0.058	0.0579	0.6944	1.3805	16.5650
1338.8	0.958994	1.4385	0.058	0.0579	0.6944	1.3806	16.5666
1339	0.959085	1.4386	0.058	0.0579	0.6944	1.3808	16.5683
1339.2	0.959175	1.4388	0.058	0.0579	0.6944	1.3809	16.5699
1339.4	0.959265	1.4389	0.058	0.0579	0.6944	1.3810	16.5715
1339.6	0.959355	1.4390	0.058	0.0579	0.6944	1.3812	16.5731
1339.8	0.959445	1.4392	0.058	0.0579	0.6944	1.3813	16.5748
1340	0.959535	1.4393	0.058	0.0579	0.6944	1.3814	16.5764
1340.2	0.959625	1.4394	0.058	0.0579	0.6944	1.3816	16.5780
1340.4	0.959715	1.4396	0.058	0.0579	0.6944	1.3817	16.5796
1340.6	0.959805	1.4397	0.058	0.0579	0.6944	1.3818	16.5812
1340.8	0.959894	1.4398	0.058	0.0579	0.6944	1.3820	16.5828
1341	0.959984	1.4400	0.058	0.0579	0.6944	1.3821	16.5845
1341.2	0.960074	1.4401	0.058	0.0579	0.6944	1.3822	16.5861
1341.4	0.960163	1.4402	0.058	0.0579	0.6944	1.3824	16.5877
1341.6	0.960253	1.4404	0.058	0.0579	0.6944	1.3825	16.5893
1341.8	0.960343	1.4405	0.058	0.0579	0.6944	1.3826	16.5909
1342	0.960432	1.4406	0.058	0.0579	0.6944	1.3828	16.5925
1342.2	0.960522	1.4408	0.058	0.0579	0.6944	1.3829	16.5941
1342.4	0.960611	1.4409	0.058	0.0579	0.6944	1.3830	16.5957
1342.6	0.9607	1.4411	0.058	0.0579	0.6944	1.3832	16.5974

1342.8	0.96079	1.4412	0.058	0.0579	0.6944	1.3833	16.5990
1343	0.960879	1.4413	0.058	0.0579	0.6944	1.3834	16.6006
1343.2	0.960968	1.4415	0.058	0.0579	0.6944	1.3836	16.6022
1343.4	0.961058	1.4416	0.058	0.0579	0.6944	1.3837	16.6038
1343.6	0.961147	1.4417	0.058	0.0579	0.6944	1.3838	16.6054
1343.8	0.961236	1.4419	0.058	0.0579	0.6944	1.3840	16.6070
1344	0.961325	1.4420	0.058	0.0579	0.6944	1.3841	16.6086
1344.2	0.961414	1.4421	0.058	0.0579	0.6944	1.3843	16.6102
1344.4	0.961503	1.4423	0.058	0.0579	0.6944	1.3844	16.6118
1344.6	0.961592	1.4424	0.058	0.0579	0.6944	1.3845	16.6134
1344.8	0.961681	1.4425	0.058	0.0579	0.6944	1.3847	16.6150
1345	0.96177	1.4427	0.058	0.0579	0.6944	1.3848	16.6166
1345.2	0.961859	1.4428	0.058	0.0579	0.6944	1.3849	16.6182
1345.4	0.961947	1.4429	0.058	0.0579	0.6944	1.3851	16.6198
1345.6	0.962036	1.4431	0.058	0.0579	0.6944	1.3852	16.6214
1345.8	0.962125	1.4432	0.058	0.0579	0.6944	1.3853	16.6230
1346	0.962213	1.4433	0.058	0.0579	0.6944	1.3854	16.6246
1346.2	0.962302	1.4435	0.058	0.0579	0.6944	1.3856	16.6262
1346.4	0.962391	1.4436	0.058	0.0579	0.6944	1.3857	16.6278
1346.6	0.962479	1.4437	0.058	0.0579	0.6944	1.3858	16.6294
1346.8	0.962568	1.4439	0.058	0.0579	0.6944	1.3860	16.6310
1347	0.962656	1.4440	0.058	0.0579	0.6944	1.3861	16.6326
1347.2	0.962744	1.4441	0.058	0.0579	0.6944	1.3862	16.6342
1347.4	0.962833	1.4442	0.058	0.0579	0.6944	1.3864	16.6358
1347.6	0.962921	1.4444	0.058	0.0579	0.6944	1.3865	16.6373
1347.8	0.963009	1.4445	0.058	0.0579	0.6944	1.3866	16.6389
1348	0.963098	1.4446	0.058	0.0579	0.6944	1.3868	16.6405
1348.2	0.963186	1.4448	0.058	0.0579	0.6944	1.3869	16.6421
1348.4	0.963274	1.4449	0.058	0.0579	0.6944	1.3870	16.6437
1348.6	0.963362	1.4450	0.058	0.0579	0.6944	1.3872	16.6453
1348.8	0.96345	1.4452	0.058	0.0579	0.6944	1.3873	16.6469
1349	0.963538	1.4453	0.058	0.0579	0.6944	1.3874	16.6485
1349.2	0.963626	1.4454	0.058	0.0579	0.6944	1.3876	16.6500
1349.4	0.963714	1.4456	0.058	0.0579	0.6944	1.3877	16.6516
1349.6	0.963802	1.4457	0.058	0.0579	0.6944	1.3878	16.6532
1349.8	0.96389	1.4458	0.058	0.0579	0.6944	1.3880	16.6548
1350	0.963978	1.4460	0.058	0.0579	0.6944	1.3881	16.6564
1350.2	0.964065	1.4461	0.058	0.0579	0.6944	1.3882	16.6579
1350.4	0.964153	1.4462	0.058	0.0579	0.6944	1.3884	16.6595
1350.6	0.964241	1.4464	0.058	0.0579	0.6944	1.3885	16.6611
1350.8	0.964328	1.4465	0.058	0.0579	0.6944	1.3886	16.6627
1351	0.964416	1.4466	0.058	0.0579	0.6944	1.3888	16.6643
1351.2	0.964504	1.4468	0.058	0.0579	0.6944	1.3889	16.6658
1351.4	0.964591	1.4469	0.058	0.0579	0.6944	1.3890	16.6674
1351.6	0.964679	1.4470	0.058	0.0579	0.6944	1.3891	16.6690
1351.8	0.964766	1.4471	0.058	0.0579	0.6944	1.3893	16.6706
1352	0.964853	1.4473	0.058	0.0579	0.6944	1.3894	16.6721

1352.2	0.964941	1.4474	0.058	0.0579	0.6944	1.3895	16.6737
1352.4	0.965028	1.4475	0.058	0.0579	0.6944	1.3897	16.6753
1352.6	0.965115	1.4477	0.058	0.0579	0.6944	1.3898	16.6768
1352.8	0.965203	1.4478	0.058	0.0579	0.6944	1.3899	16.6784
1353	0.96529	1.4479	0.058	0.0579	0.6944	1.3901	16.6800
1353.2	0.965377	1.4481	0.058	0.0579	0.6944	1.3902	16.6816
1353.4	0.965464	1.4482	0.058	0.0579	0.6944	1.3903	16.6831
1353.6	0.965551	1.4483	0.058	0.0579	0.6944	1.3905	16.6847
1353.8	0.965638	1.4485	0.058	0.0579	0.6944	1.3906	16.6863
1354	0.965725	1.4486	0.058	0.0579	0.6944	1.3907	16.6878
1354.2	0.965812	1.4487	0.058	0.0579	0.6944	1.3908	16.6894
1354.4	0.965899	1.4488	0.058	0.0579	0.6944	1.3910	16.6910
1354.6	0.965986	1.4490	0.058	0.0579	0.6944	1.3911	16.6925
1354.8	0.966073	1.4491	0.058	0.0579	0.6944	1.3912	16.6941
1355	0.966159	1.4492	0.058	0.0579	0.6944	1.3914	16.6956
1355.2	0.966246	1.4494	0.058	0.0579	0.6944	1.3915	16.6972
1355.4	0.966333	1.4495	0.058	0.0579	0.6944	1.3916	16.6988
1355.6	0.966419	1.4496	0.058	0.0579	0.6944	1.3918	16.7003
1355.8	0.966506	1.4498	0.058	0.0579	0.6944	1.3919	16.7019
1356	0.966593	1.4499	0.058	0.0579	0.6944	1.3920	16.7034
1356.2	0.966679	1.4500	0.058	0.0579	0.6944	1.3921	16.7050
1356.4	0.966766	1.4501	0.058	0.0579	0.6944	1.3923	16.7066
1356.6	0.966852	1.4503	0.058	0.0579	0.6944	1.3924	16.7081
1356.8	0.966939	1.4504	0.058	0.0579	0.6944	1.3925	16.7097
1357	0.967025	1.4505	0.058	0.0579	0.6944	1.3927	16.7112
1357.2	0.967111	1.4507	0.058	0.0579	0.6944	1.3928	16.7128
1357.4	0.967198	1.4508	0.058	0.0579	0.6944	1.3929	16.7143
1357.6	0.967284	1.4509	0.058	0.0579	0.6944	1.3931	16.7159
1357.8	0.96737	1.4511	0.058	0.0579	0.6944	1.3932	16.7174
1358	0.967456	1.4512	0.058	0.0579	0.6944	1.3933	16.7190
1358.2	0.967542	1.4513	0.058	0.0579	0.6944	1.3934	16.7205
1358.4	0.967629	1.4514	0.058	0.0579	0.6944	1.3936	16.7221
1358.6	0.967715	1.4516	0.058	0.0579	0.6944	1.3937	16.7236
1358.8	0.967801	1.4517	0.058	0.0579	0.6944	1.3938	16.7252
1359	0.967887	1.4518	0.058	0.0579	0.6944	1.3940	16.7267
1359.2	0.967973	1.4520	0.058	0.0579	0.6944	1.3941	16.7283
1359.4	0.968059	1.4521	0.058	0.0579	0.6944	1.3942	16.7298
1359.6	0.968144	1.4522	0.058	0.0579	0.6944	1.3943	16.7314
1359.8	0.96823	1.4523	0.058	0.0579	0.6944	1.3945	16.7329
1360	0.968316	1.4525	0.058	0.0579	0.6944	1.3946	16.7345
1360.2	0.968402	1.4526	0.058	0.0579	0.6944	1.3947	16.7360
1360.4	0.968488	1.4527	0.058	0.0579	0.6944	1.3949	16.7376
1360.6	0.968573	1.4529	0.058	0.0579	0.6944	1.3950	16.7391
1360.8	0.968659	1.4530	0.058	0.0579	0.6944	1.3951	16.7406
1361	0.968744	1.4531	0.058	0.0579	0.6944	1.3952	16.7422
1361.2	0.96883	1.4532	0.058	0.0579	0.6944	1.3954	16.7437
1361.4	0.968916	1.4534	0.058	0.0579	0.6944	1.3955	16.7453

1361.6	0.969001	1.4535	0.058	0.0579	0.6944	1.3956	16.7468
1361.8	0.969086	1.4536	0.058	0.0579	0.6944	1.3958	16.7483
1362	0.969172	1.4538	0.058	0.0579	0.6944	1.3959	16.7499
1362.2	0.969257	1.4539	0.058	0.0579	0.6944	1.3960	16.7514
1362.4	0.969343	1.4540	0.058	0.0579	0.6944	1.3961	16.7530
1362.6	0.969428	1.4541	0.058	0.0579	0.6944	1.3963	16.7545
1362.8	0.969513	1.4543	0.058	0.0579	0.6944	1.3964	16.7560
1363	0.969598	1.4544	0.058	0.0579	0.6944	1.3965	16.7576
1363.2	0.969684	1.4545	0.058	0.0579	0.6944	1.3967	16.7591
1363.4	0.969769	1.4547	0.058	0.0579	0.6944	1.3968	16.7606
1363.6	0.969854	1.4548	0.058	0.0579	0.6944	1.3969	16.7622
1363.8	0.969939	1.4549	0.058	0.0579	0.6944	1.3970	16.7637
1364	0.970024	1.4550	0.058	0.0579	0.6944	1.3972	16.7652
1364.2	0.970109	1.4552	0.058	0.0579	0.6944	1.3973	16.7668
1364.4	0.970194	1.4553	0.058	0.0579	0.6944	1.3974	16.7683
1364.6	0.970279	1.4554	0.058	0.0579	0.6944	1.3975	16.7698
1364.8	0.970364	1.4555	0.058	0.0579	0.6944	1.3977	16.7713
1365	0.970448	1.4557	0.058	0.0579	0.6944	1.3978	16.7729
1365.2	0.970533	1.4558	0.058	0.0579	0.6944	1.3979	16.7744
1365.4	0.970618	1.4559	0.058	0.0579	0.6944	1.3981	16.7759
1365.6	0.970703	1.4561	0.058	0.0579	0.6944	1.3982	16.7774
1365.8	0.970787	1.4562	0.058	0.0579	0.6944	1.3983	16.7790
1366	0.970872	1.4563	0.058	0.0579	0.6944	1.3984	16.7805
1366.2	0.970957	1.4564	0.058	0.0579	0.6944	1.3986	16.7820
1366.4	0.971041	1.4566	0.058	0.0579	0.6944	1.3987	16.7835
1366.6	0.971126	1.4567	0.058	0.0579	0.6944	1.3988	16.7851
1366.8	0.97121	1.4568	0.058	0.0579	0.6944	1.3989	16.7866
1367	0.971295	1.4569	0.058	0.0579	0.6944	1.3991	16.7881
1367.2	0.971379	1.4571	0.058	0.0579	0.6944	1.3992	16.7896
1367.4	0.971464	1.4572	0.058	0.0579	0.6944	1.3993	16.7911
1367.6	0.971548	1.4573	0.058	0.0579	0.6944	1.3995	16.7927
1367.8	0.971632	1.4574	0.058	0.0579	0.6944	1.3996	16.7942
1368	0.971717	1.4576	0.058	0.0579	0.6944	1.3997	16.7957
1368.2	0.971801	1.4577	0.058	0.0579	0.6944	1.3998	16.7972
1368.4	0.971885	1.4578	0.058	0.0579	0.6944	1.4000	16.7987
1368.6	0.971969	1.4580	0.058	0.0579	0.6944	1.4001	16.8002
1368.8	0.972053	1.4581	0.058	0.0579	0.6944	1.4002	16.8018
1369	0.972138	1.4582	0.058	0.0579	0.6944	1.4003	16.8033
1369.2	0.972222	1.4583	0.058	0.0579	0.6944	1.4005	16.8048
1369.4	0.972306	1.4585	0.058	0.0579	0.6944	1.4006	16.8063
1369.6	0.97239	1.4586	0.058	0.0579	0.6944	1.4007	16.8078
1369.8	0.972474	1.4587	0.058	0.0579	0.6944	1.4008	16.8093
1370	0.972558	1.4588	0.058	0.0579	0.6944	1.4010	16.8108
1370.2	0.972641	1.4590	0.058	0.0579	0.6944	1.4011	16.8123
1370.4	0.972725	1.4591	0.058	0.0579	0.6944	1.4012	16.8139
1370.6	0.972809	1.4592	0.058	0.0579	0.6944	1.4013	16.8154
1370.8	0.972893	1.4593	0.058	0.0579	0.6944	1.4015	16.8169

1371	0.972977	1.4595	0.058	0.0579	0.6944	1.4016	16.8184
1371.2	0.97306	1.4596	0.058	0.0579	0.6944	1.4017	16.8199
1371.4	0.973144	1.4597	0.058	0.0579	0.6944	1.4018	16.8214
1371.6	0.973228	1.4598	0.058	0.0579	0.6944	1.4020	16.8229
1371.8	0.973311	1.4600	0.058	0.0579	0.6944	1.4021	16.8244
1372	0.973395	1.4601	0.058	0.0579	0.6944	1.4022	16.8259
1372.2	0.973478	1.4602	0.058	0.0579	0.6944	1.4023	16.8274
1372.4	0.973562	1.4603	0.058	0.0579	0.6944	1.4025	16.8289
1372.6	0.973645	1.4605	0.058	0.0579	0.6944	1.4026	16.8304
1372.8	0.973729	1.4606	0.058	0.0579	0.6944	1.4027	16.8319
1373	0.973812	1.4607	0.058	0.0579	0.6944	1.4028	16.8334
1373.2	0.973895	1.4608	0.058	0.0579	0.6944	1.4030	16.8349
1373.4	0.973979	1.4610	0.058	0.0579	0.6944	1.4031	16.8364
1373.6	0.974062	1.4611	0.058	0.0579	0.6944	1.4032	16.8379
1373.8	0.974145	1.4612	0.058	0.0579	0.6944	1.4033	16.8394
1374	0.974228	1.4613	0.058	0.0579	0.6944	1.4035	16.8409
1374.2	0.974312	1.4615	0.058	0.0579	0.6944	1.4036	16.8424
1374.4	0.974395	1.4616	0.058	0.0579	0.6944	1.4037	16.8439
1374.6	0.974478	1.4617	0.058	0.0579	0.6944	1.4038	16.8454
1374.8	0.974561	1.4618	0.058	0.0579	0.6944	1.4040	16.8469
1375	0.974644	1.4620	0.058	0.0579	0.6944	1.4041	16.8484
1375.2	0.974727	1.4621	0.058	0.0579	0.6944	1.4042	16.8499
1375.4	0.97481	1.4622	0.058	0.0579	0.6944	1.4043	16.8514
1375.6	0.974893	1.4623	0.058	0.0579	0.6944	1.4045	16.8529
1375.8	0.974976	1.4625	0.058	0.0579	0.6944	1.4046	16.8544
1376	0.975059	1.4626	0.058	0.0579	0.6944	1.4047	16.8559
1376.2	0.975141	1.4627	0.058	0.0579	0.6944	1.4048	16.8574
1376.4	0.975224	1.4628	0.058	0.0579	0.6944	1.4050	16.8588
1376.6	0.975307	1.4630	0.058	0.0579	0.6944	1.4051	16.8603
1376.8	0.97539	1.4631	0.058	0.0579	0.6944	1.4052	16.8618
1377	0.975472	1.4632	0.058	0.0579	0.6944	1.4053	16.8633
1377.2	0.975555	1.4633	0.058	0.0579	0.6944	1.4055	16.8648
1377.4	0.975638	1.4635	0.058	0.0579	0.6944	1.4056	16.8663
1377.6	0.97572	1.4636	0.058	0.0579	0.6944	1.4057	16.8678
1377.8	0.975803	1.4637	0.058	0.0579	0.6944	1.4058	16.8693
1378	0.975885	1.4638	0.058	0.0579	0.6944	1.4060	16.8707
1378.2	0.975968	1.4640	0.058	0.0579	0.6944	1.4061	16.8722
1378.4	0.97605	1.4641	0.058	0.0579	0.6944	1.4062	16.8737
1378.6	0.976133	1.4642	0.058	0.0579	0.6944	1.4063	16.8752
1378.8	0.976215	1.4643	0.058	0.0579	0.6944	1.4065	16.8767
1379	0.976297	1.4644	0.058	0.0579	0.6944	1.4066	16.8782
1379.2	0.97638	1.4646	0.058	0.0579	0.6944	1.4067	16.8796
1379.4	0.976462	1.4647	0.058	0.0579	0.6944	1.4068	16.8811
1379.6	0.976544	1.4648	0.058	0.0579	0.6944	1.4069	16.8826
1379.8	0.976626	1.4649	0.058	0.0579	0.6944	1.4071	16.8841
1380	0.976709	1.4651	0.058	0.0579	0.6944	1.4072	16.8856
1380.2	0.976791	1.4652	0.058	0.0579	0.6944	1.4073	16.8870

1380.4	0.976873	1.4653	0.058	0.0579	0.6944	1.4074	16.8885
1380.6	0.976955	1.4654	0.058	0.0579	0.6944	1.4076	16.8900
1380.8	0.977037	1.4656	0.058	0.0579	0.6944	1.4077	16.8915
1381	0.977119	1.4657	0.058	0.0579	0.6944	1.4078	16.8930
1381.2	0.977201	1.4658	0.058	0.0579	0.6944	1.4079	16.8944
1381.4	0.977283	1.4659	0.058	0.0579	0.6944	1.4081	16.8959
1381.6	0.977365	1.4660	0.058	0.0579	0.6944	1.4082	16.8974
1381.8	0.977447	1.4662	0.058	0.0579	0.6944	1.4083	16.8989
1382	0.977528	1.4663	0.058	0.0579	0.6944	1.4084	16.9003
1382.2	0.97761	1.4664	0.058	0.0579	0.6944	1.4085	16.9018
1382.4	0.977692	1.4665	0.058	0.0579	0.6944	1.4087	16.9033
1382.6	0.977774	1.4667	0.058	0.0579	0.6944	1.4088	16.9047
1382.8	0.977855	1.4668	0.058	0.0579	0.6944	1.4089	16.9062
1383	0.977937	1.4669	0.058	0.0579	0.6944	1.4090	16.9077
1383.2	0.978019	1.4670	0.058	0.0579	0.6944	1.4092	16.9092
1383.4	0.9781	1.4672	0.058	0.0579	0.6944	1.4093	16.9106
1383.6	0.978182	1.4673	0.058	0.0579	0.6944	1.4094	16.9121
1383.8	0.978263	1.4674	0.058	0.0579	0.6944	1.4095	16.9136
1384	0.978345	1.4675	0.058	0.0579	0.6944	1.4096	16.9150
1384.2	0.978426	1.4676	0.058	0.0579	0.6944	1.4098	16.9165
1384.4	0.978508	1.4678	0.058	0.0579	0.6944	1.4099	16.9180
1384.6	0.978589	1.4679	0.058	0.0579	0.6944	1.4100	16.9194
1384.8	0.978671	1.4680	0.058	0.0579	0.6944	1.4101	16.9209
1385	0.978752	1.4681	0.058	0.0579	0.6944	1.4103	16.9224
1385.2	0.978833	1.4682	0.058	0.0579	0.6944	1.4104	16.9238
1385.4	0.978914	1.4684	0.058	0.0579	0.6944	1.4105	16.9253
1385.6	0.978996	1.4685	0.058	0.0579	0.6944	1.4106	16.9267
1385.8	0.979077	1.4686	0.058	0.0579	0.6944	1.4107	16.9282
1386	0.979158	1.4687	0.058	0.0579	0.6944	1.4109	16.9297
1386.2	0.979239	1.4689	0.058	0.0579	0.6944	1.4110	16.9311
1386.4	0.97932	1.4690	0.058	0.0579	0.6944	1.4111	16.9326
1386.6	0.979401	1.4691	0.058	0.0579	0.6944	1.4112	16.9341
1386.8	0.979482	1.4692	0.058	0.0579	0.6944	1.4114	16.9355
1387	0.979563	1.4693	0.058	0.0579	0.6944	1.4115	16.9370
1387.2	0.979644	1.4695	0.058	0.0579	0.6944	1.4116	16.9384
1387.4	0.979725	1.4696	0.058	0.0579	0.6944	1.4117	16.9399
1387.6	0.979806	1.4697	0.058	0.0579	0.6944	1.4118	16.9413
1387.8	0.979887	1.4698	0.058	0.0579	0.6944	1.4120	16.9428
1388	0.979968	1.4700	0.058	0.0579	0.6944	1.4121	16.9443
1388.2	0.980049	1.4701	0.058	0.0579	0.6944	1.4122	16.9457
1388.4	0.98013	1.4702	0.058	0.0579	0.6944	1.4123	16.9472
1388.6	0.98021	1.4703	0.058	0.0579	0.6944	1.4124	16.9486
1388.8	0.980291	1.4704	0.058	0.0579	0.6944	1.4126	16.9501
1389	0.980372	1.4706	0.058	0.0579	0.6944	1.4127	16.9515
1389.2	0.980452	1.4707	0.058	0.0579	0.6944	1.4128	16.9530
1389.4	0.980533	1.4708	0.058	0.0579	0.6944	1.4129	16.9544
1389.6	0.980614	1.4709	0.058	0.0579	0.6944	1.4131	16.9559

1389.8	0.980694	1.4710	0.058	0.0579	0.6944	1.4132	16.9573
1390	0.980775	1.4712	0.058	0.0579	0.6944	1.4133	16.9588
1390.2	0.980855	1.4713	0.058	0.0579	0.6944	1.4134	16.9602
1390.4	0.980936	1.4714	0.058	0.0579	0.6944	1.4135	16.9617
1390.6	0.981016	1.4715	0.058	0.0579	0.6944	1.4137	16.9631
1390.8	0.981097	1.4716	0.058	0.0579	0.6944	1.4138	16.9646
1391	0.981177	1.4718	0.058	0.0579	0.6944	1.4139	16.9660
1391.2	0.981257	1.4719	0.058	0.0579	0.6944	1.4140	16.9675
1391.4	0.981338	1.4720	0.058	0.0579	0.6944	1.4141	16.9689
1391.6	0.981418	1.4721	0.058	0.0579	0.6944	1.4143	16.9704
1391.8	0.981498	1.4722	0.058	0.0579	0.6944	1.4144	16.9718
1392	0.981578	1.4724	0.058	0.0579	0.6944	1.4145	16.9732
1392.2	0.981658	1.4725	0.058	0.0579	0.6944	1.4146	16.9747
1392.4	0.981739	1.4726	0.058	0.0579	0.6944	1.4147	16.9761
1392.6	0.981819	1.4727	0.058	0.0579	0.6944	1.4149	16.9776
1392.8	0.981899	1.4728	0.058	0.0579	0.6944	1.4150	16.9790
1393	0.981979	1.4730	0.058	0.0579	0.6944	1.4151	16.9805
1393.2	0.982059	1.4731	0.058	0.0579	0.6944	1.4152	16.9819
1393.4	0.982139	1.4732	0.058	0.0579	0.6944	1.4153	16.9833
1393.6	0.982219	1.4733	0.058	0.0579	0.6944	1.4155	16.9848
1393.8	0.982299	1.4734	0.058	0.0579	0.6944	1.4156	16.9862
1394	0.982379	1.4736	0.058	0.0579	0.6944	1.4157	16.9877
1394.2	0.982459	1.4737	0.058	0.0579	0.6944	1.4158	16.9891
1394.4	0.982538	1.4738	0.058	0.0579	0.6944	1.4159	16.9905
1394.6	0.982618	1.4739	0.058	0.0579	0.6944	1.4161	16.9920
1394.8	0.982698	1.4740	0.058	0.0579	0.6944	1.4162	16.9934
1395	0.982778	1.4742	0.058	0.0579	0.6944	1.4163	16.9948
1395.2	0.982857	1.4743	0.058	0.0579	0.6944	1.4164	16.9963
1395.4	0.982937	1.4744	0.058	0.0579	0.6944	1.4165	16.9977
1395.6	0.983017	1.4745	0.058	0.0579	0.6944	1.4167	16.9991
1395.8	0.983096	1.4746	0.058	0.0579	0.6944	1.4168	17.0006
1396	0.983176	1.4748	0.058	0.0579	0.6944	1.4169	17.0020
1396.2	0.983256	1.4749	0.058	0.0579	0.6944	1.4170	17.0034
1396.4	0.983335	1.4750	0.058	0.0579	0.6944	1.4171	17.0049
1396.6	0.983415	1.4751	0.058	0.0579	0.6944	1.4173	17.0063
1396.8	0.983494	1.4752	0.058	0.0579	0.6944	1.4174	17.0077
1397	0.983574	1.4754	0.058	0.0579	0.6944	1.4175	17.0092
1397.2	0.983653	1.4755	0.058	0.0579	0.6944	1.4176	17.0106
1397.4	0.983732	1.4756	0.058	0.0579	0.6944	1.4177	17.0120
1397.6	0.983812	1.4757	0.058	0.0579	0.6944	1.4178	17.0135
1397.8	0.983891	1.4758	0.058	0.0579	0.6944	1.4180	17.0149
1398	0.98397	1.4760	0.058	0.0579	0.6944	1.4181	17.0163
1398.2	0.98405	1.4761	0.058	0.0579	0.6944	1.4182	17.0177
1398.4	0.984129	1.4762	0.058	0.0579	0.6944	1.4183	17.0192
1398.6	0.984208	1.4763	0.058	0.0579	0.6944	1.4184	17.0206
1398.8	0.984287	1.4764	0.058	0.0579	0.6944	1.4186	17.0220
1399	0.984366	1.4765	0.058	0.0579	0.6944	1.4187	17.0234

1399.2	0.984445	1.4767	0.058	0.0579	0.6944	1.4188	17.0249
1399.4	0.984524	1.4768	0.058	0.0579	0.6944	1.4189	17.0263
1399.6	0.984603	1.4769	0.058	0.0579	0.6944	1.4190	17.0277
1399.8	0.984682	1.4770	0.058	0.0579	0.6944	1.4192	17.0291
1400	0.984761	1.4771	0.058	0.0579	0.6944	1.4193	17.0306
1400.2	0.98484	1.4773	0.058	0.0579	0.6944	1.4194	17.0320
1400.4	0.984919	1.4774	0.058	0.0579	0.6944	1.4195	17.0334
1400.6	0.984998	1.4775	0.058	0.0579	0.6944	1.4196	17.0348
1400.8	0.985077	1.4776	0.058	0.0579	0.6944	1.4197	17.0362
1401	0.985156	1.4777	0.058	0.0579	0.6944	1.4199	17.0377
1401.2	0.985235	1.4779	0.058	0.0579	0.6944	1.4200	17.0391
1401.4	0.985314	1.4780	0.058	0.0579	0.6944	1.4201	17.0405
1401.6	0.985392	1.4781	0.058	0.0579	0.6944	1.4202	17.0419
1401.8	0.985471	1.4782	0.058	0.0579	0.6944	1.4203	17.0433
1402	0.98555	1.4783	0.058	0.0579	0.6944	1.4205	17.0447
1402.2	0.985628	1.4784	0.058	0.0579	0.6944	1.4206	17.0462
1402.4	0.985707	1.4786	0.058	0.0579	0.6944	1.4207	17.0476
1402.6	0.985786	1.4787	0.058	0.0579	0.6944	1.4208	17.0490
1402.8	0.985864	1.4788	0.058	0.0579	0.6944	1.4209	17.0504
1403	0.985943	1.4789	0.058	0.0579	0.6944	1.4210	17.0518
1403.2	0.986021	1.4790	0.058	0.0579	0.6944	1.4212	17.0532
1403.4	0.9861	1.4791	0.058	0.0579	0.6944	1.4213	17.0546
1403.6	0.986178	1.4793	0.058	0.0579	0.6944	1.4214	17.0561
1403.8	0.986257	1.4794	0.058	0.0579	0.6944	1.4215	17.0575
1404	0.986335	1.4795	0.058	0.0579	0.6944	1.4216	17.0589
1404.2	0.986413	1.4796	0.058	0.0579	0.6944	1.4217	17.0603
1404.4	0.986492	1.4797	0.058	0.0579	0.6944	1.4219	17.0617
1404.6	0.98657	1.4799	0.058	0.0579	0.6944	1.4220	17.0631
1404.8	0.986648	1.4800	0.058	0.0579	0.6944	1.4221	17.0645
1405	0.986726	1.4801	0.058	0.0579	0.6944	1.4222	17.0659
1405.2	0.986805	1.4802	0.058	0.0579	0.6944	1.4223	17.0673
1405.4	0.986883	1.4803	0.058	0.0579	0.6944	1.4225	17.0687
1405.6	0.986961	1.4804	0.058	0.0579	0.6944	1.4226	17.0702
1405.8	0.987039	1.4806	0.058	0.0579	0.6944	1.4227	17.0716
1406	0.987117	1.4807	0.058	0.0579	0.6944	1.4228	17.0730
1406.2	0.987195	1.4808	0.058	0.0579	0.6944	1.4229	17.0744
1406.4	0.987273	1.4809	0.058	0.0579	0.6944	1.4230	17.0758
1406.6	0.987351	1.4810	0.058	0.0579	0.6944	1.4232	17.0772
1406.8	0.987429	1.4811	0.058	0.0579	0.6944	1.4233	17.0786
1407	0.987507	1.4813	0.058	0.0579	0.6944	1.4234	17.0800
1407.2	0.987585	1.4814	0.058	0.0579	0.6944	1.4235	17.0814
1407.4	0.987663	1.4815	0.058	0.0579	0.6944	1.4236	17.0828
1407.6	0.987741	1.4816	0.058	0.0579	0.6944	1.4237	17.0842
1407.8	0.987819	1.4817	0.058	0.0579	0.6944	1.4239	17.0856
1408	0.987897	1.4818	0.058	0.0579	0.6944	1.4240	17.0870
1408.2	0.987974	1.4820	0.058	0.0579	0.6944	1.4241	17.0884
1408.4	0.988052	1.4821	0.058	0.0579	0.6944	1.4242	17.0898

1408.6	0.98813	1.4822	0.058	0.0579	0.6944	1.4243	17.0912
1408.8	0.988208	1.4823	0.058	0.0579	0.6944	1.4244	17.0926
1409	0.988285	1.4824	0.058	0.0579	0.6944	1.4246	17.0940
1409.2	0.988363	1.4825	0.058	0.0579	0.6944	1.4247	17.0954
1409.4	0.988441	1.4827	0.058	0.0579	0.6944	1.4248	17.0968
1409.6	0.988518	1.4828	0.058	0.0579	0.6944	1.4249	17.0982
1409.8	0.988596	1.4829	0.058	0.0579	0.6944	1.4250	17.0996
1410	0.988673	1.4830	0.058	0.0579	0.6944	1.4251	17.1010
1410.2	0.988751	1.4831	0.058	0.0579	0.6944	1.4253	17.1024
1410.4	0.988828	1.4832	0.058	0.0579	0.6944	1.4254	17.1038
1410.6	0.988906	1.4834	0.058	0.0579	0.6944	1.4255	17.1052
1410.8	0.988983	1.4835	0.058	0.0579	0.6944	1.4256	17.1066
1411	0.989061	1.4836	0.058	0.0579	0.6944	1.4257	17.1079
1411.2	0.989138	1.4837	0.058	0.0579	0.6944	1.4258	17.1093
1411.4	0.989215	1.4838	0.058	0.0579	0.6944	1.4260	17.1107
1411.6	0.989293	1.4839	0.058	0.0579	0.6944	1.4261	17.1121
1411.8	0.98937	1.4841	0.058	0.0579	0.6944	1.4262	17.1135
1412	0.989447	1.4842	0.058	0.0579	0.6944	1.4263	17.1149
1412.2	0.989524	1.4843	0.058	0.0579	0.6944	1.4264	17.1163
1412.4	0.989601	1.4844	0.058	0.0579	0.6944	1.4265	17.1177
1412.6	0.989679	1.4845	0.058	0.0579	0.6944	1.4266	17.1191
1412.8	0.989756	1.4846	0.058	0.0579	0.6944	1.4268	17.1205
1413	0.989833	1.4847	0.058	0.0579	0.6944	1.4269	17.1219
1413.2	0.98991	1.4849	0.058	0.0579	0.6944	1.4270	17.1232
1413.4	0.989987	1.4850	0.058	0.0579	0.6944	1.4271	17.1246
1413.6	0.990064	1.4851	0.058	0.0579	0.6944	1.4272	17.1260
1413.8	0.990141	1.4852	0.058	0.0579	0.6944	1.4273	17.1274
1414	0.990218	1.4853	0.058	0.0579	0.6944	1.4275	17.1288
1414.2	0.990295	1.4854	0.058	0.0579	0.6944	1.4276	17.1302
1414.4	0.990372	1.4856	0.058	0.0579	0.6944	1.4277	17.1316
1414.6	0.990449	1.4857	0.058	0.0579	0.6944	1.4278	17.1329
1414.8	0.990526	1.4858	0.058	0.0579	0.6944	1.4279	17.1343
1415	0.990602	1.4859	0.058	0.0579	0.6944	1.4280	17.1357
1415.2	0.990679	1.4860	0.058	0.0579	0.6944	1.4281	17.1371
1415.4	0.990756	1.4861	0.058	0.0579	0.6944	1.4283	17.1385
1415.6	0.990833	1.4862	0.058	0.0579	0.6944	1.4284	17.1399
1415.8	0.99091	1.4864	0.058	0.0579	0.6944	1.4285	17.1412
1416	0.990986	1.4865	0.058	0.0579	0.6944	1.4286	17.1426
1416.2	0.991063	1.4866	0.058	0.0579	0.6944	1.4287	17.1440
1416.4	0.99114	1.4867	0.058	0.0579	0.6944	1.4288	17.1454
1416.6	0.991216	1.4868	0.058	0.0579	0.6944	1.4290	17.1468
1416.8	0.991293	1.4869	0.058	0.0579	0.6944	1.4291	17.1481
1417	0.991369	1.4871	0.058	0.0579	0.6944	1.4292	17.1495
1417.2	0.991446	1.4872	0.058	0.0579	0.6944	1.4293	17.1509
1417.4	0.991522	1.4873	0.058	0.0579	0.6944	1.4294	17.1523
1417.6	0.991599	1.4874	0.058	0.0579	0.6944	1.4295	17.1536
1417.8	0.991675	1.4875	0.058	0.0579	0.6944	1.4296	17.1550

1418	0.991752	1.4876	0.058	0.0579	0.6944	1.4298	17.1564
1418.2	0.991828	1.4877	0.058	0.0579	0.6944	1.4299	17.1578
1418.4	0.991904	1.4879	0.058	0.0579	0.6944	1.4300	17.1591
1418.6	0.991981	1.4880	0.058	0.0579	0.6944	1.4301	17.1605
1418.8	0.992057	1.4881	0.058	0.0579	0.6944	1.4302	17.1619
1419	0.992133	1.4882	0.058	0.0579	0.6944	1.4303	17.1633
1419.2	0.99221	1.4883	0.058	0.0579	0.6944	1.4304	17.1646
1419.4	0.992286	1.4884	0.058	0.0579	0.6944	1.4306	17.1660
1419.6	0.992362	1.4885	0.058	0.0579	0.6944	1.4307	17.1674
1419.8	0.992438	1.4887	0.058	0.0579	0.6944	1.4308	17.1688
1420	0.992514	1.4888	0.058	0.0579	0.6944	1.4309	17.1701
1420.2	0.992591	1.4889	0.058	0.0579	0.6944	1.4310	17.1715
1420.4	0.992667	1.4890	0.058	0.0579	0.6944	1.4311	17.1729
1420.6	0.992743	1.4891	0.058	0.0579	0.6944	1.4312	17.1742
1420.8	0.992819	1.4892	0.058	0.0579	0.6944	1.4314	17.1756
1421	0.992895	1.4893	0.058	0.0579	0.6944	1.4315	17.1770
1421.2	0.992971	1.4895	0.058	0.0579	0.6944	1.4316	17.1783
1421.4	0.993047	1.4896	0.058	0.0579	0.6944	1.4317	17.1797
1421.6	0.993123	1.4897	0.058	0.0579	0.6944	1.4318	17.1811
1421.8	0.993199	1.4898	0.058	0.0579	0.6944	1.4319	17.1824
1422	0.993275	1.4899	0.058	0.0579	0.6944	1.4320	17.1838
1422.2	0.99335	1.4900	0.058	0.0579	0.6944	1.4322	17.1852
1422.4	0.993426	1.4901	0.058	0.0579	0.6944	1.4323	17.1865
1422.6	0.993502	1.4903	0.058	0.0579	0.6944	1.4324	17.1879
1422.8	0.993578	1.4904	0.058	0.0579	0.6944	1.4325	17.1893
1423	0.993654	1.4905	0.058	0.0579	0.6944	1.4326	17.1906
1423.2	0.993729	1.4906	0.058	0.0579	0.6944	1.4327	17.1920
1423.4	0.993805	1.4907	0.058	0.0579	0.6944	1.4328	17.1934
1423.6	0.993881	1.4908	0.058	0.0579	0.6944	1.4330	17.1947
1423.8	0.993956	1.4909	0.058	0.0579	0.6944	1.4331	17.1961
1424	0.994032	1.4910	0.058	0.0579	0.6944	1.4332	17.1975
1424.2	0.994108	1.4912	0.058	0.0579	0.6944	1.4333	17.1988
1424.4	0.994183	1.4913	0.058	0.0579	0.6944	1.4334	17.2002
1424.6	0.994259	1.4914	0.058	0.0579	0.6944	1.4335	17.2015
1424.8	0.994334	1.4915	0.058	0.0579	0.6944	1.4336	17.2029
1425	0.99441	1.4916	0.058	0.0579	0.6944	1.4337	17.2043
1425.2	0.994485	1.4917	0.058	0.0579	0.6944	1.4339	17.2056
1425.4	0.994561	1.4918	0.058	0.0579	0.6944	1.4340	17.2070
1425.6	0.994636	1.4920	0.058	0.0579	0.6944	1.4341	17.2083
1425.8	0.994712	1.4921	0.058	0.0579	0.6944	1.4342	17.2097
1426	0.994787	1.4922	0.058	0.0579	0.6944	1.4343	17.2110
1426.2	0.994862	1.4923	0.058	0.0579	0.6944	1.4344	17.2124
1426.4	0.994938	1.4924	0.058	0.0579	0.6944	1.4345	17.2138
1426.6	0.995013	1.4925	0.058	0.0579	0.6944	1.4346	17.2151
1426.8	0.995088	1.4926	0.058	0.0579	0.6944	1.4348	17.2165
1427	0.995163	1.4927	0.058	0.0579	0.6944	1.4349	17.2178
1427.2	0.995239	1.4929	0.058	0.0579	0.6944	1.4350	17.2192

1427.4	0.995314	1.4930	0.058	0.0579	0.6944	1.4351	17.2205
1427.6	0.995389	1.4931	0.058	0.0579	0.6944	1.4352	17.2219
1427.8	0.995464	1.4932	0.058	0.0579	0.6944	1.4353	17.2232
1428	0.995539	1.4933	0.058	0.0579	0.6944	1.4354	17.2246
1428.2	0.995614	1.4934	0.058	0.0579	0.6944	1.4356	17.2259
1428.4	0.995689	1.4935	0.058	0.0579	0.6944	1.4357	17.2273
1428.6	0.995764	1.4936	0.058	0.0579	0.6944	1.4358	17.2286
1428.8	0.995839	1.4938	0.058	0.0579	0.6944	1.4359	17.2300
1429	0.995914	1.4939	0.058	0.0579	0.6944	1.4360	17.2313
1429.2	0.995989	1.4940	0.058	0.0579	0.6944	1.4361	17.2327
1429.4	0.996064	1.4941	0.058	0.0579	0.6944	1.4362	17.2340
1429.6	0.996139	1.4942	0.058	0.0579	0.6944	1.4363	17.2354
1429.8	0.996214	1.4943	0.058	0.0579	0.6944	1.4365	17.2367
1430	0.996289	1.4944	0.058	0.0579	0.6944	1.4366	17.2381
1430.2	0.996364	1.4945	0.058	0.0579	0.6944	1.4367	17.2394
1430.4	0.996439	1.4947	0.058	0.0579	0.6944	1.4368	17.2408
1430.6	0.996513	1.4948	0.058	0.0579	0.6944	1.4369	17.2421
1430.8	0.996588	1.4949	0.058	0.0579	0.6944	1.4370	17.2435
1431	0.996663	1.4950	0.058	0.0579	0.6944	1.4371	17.2448
1431.2	0.996737	1.4951	0.058	0.0579	0.6944	1.4372	17.2462
1431.4	0.996812	1.4952	0.058	0.0579	0.6944	1.4373	17.2475
1431.6	0.996887	1.4953	0.058	0.0579	0.6944	1.4375	17.2488
1431.8	0.996961	1.4954	0.058	0.0579	0.6944	1.4376	17.2502
1432	0.997036	1.4956	0.058	0.0579	0.6944	1.4377	17.2515
1432.2	0.997111	1.4957	0.058	0.0579	0.6944	1.4378	17.2529
1432.4	0.997185	1.4958	0.058	0.0579	0.6944	1.4379	17.2542
1432.6	0.99726	1.4959	0.058	0.0579	0.6944	1.4380	17.2556
1432.8	0.997334	1.4960	0.058	0.0579	0.6944	1.4381	17.2569
1433	0.997409	1.4961	0.058	0.0579	0.6944	1.4382	17.2582
1433.2	0.997483	1.4962	0.058	0.0579	0.6944	1.4384	17.2596
1433.4	0.997558	1.4963	0.058	0.0579	0.6944	1.4385	17.2609
1433.6	0.997632	1.4964	0.058	0.0579	0.6944	1.4386	17.2623
1433.8	0.997706	1.4966	0.058	0.0579	0.6944	1.4387	17.2636
1434	0.997781	1.4967	0.058	0.0579	0.6944	1.4388	17.2649
1434.2	0.997855	1.4968	0.058	0.0579	0.6944	1.4389	17.2663
1434.4	0.997929	1.4969	0.058	0.0579	0.6944	1.4390	17.2676
1434.6	0.998004	1.4970	0.058	0.0579	0.6944	1.4391	17.2690
1434.8	0.998078	1.4971	0.058	0.0579	0.6944	1.4392	17.2703
1435	0.998152	1.4972	0.058	0.0579	0.6944	1.4394	17.2716
1435.2	0.998226	1.4973	0.058	0.0579	0.6944	1.4395	17.2730
1435.4	0.998301	1.4975	0.058	0.0579	0.6944	1.4396	17.2743
1435.6	0.998375	1.4976	0.058	0.0579	0.6944	1.4397	17.2756
1435.8	0.998449	1.4977	0.058	0.0579	0.6944	1.4398	17.2770
1436	0.998523	1.4978	0.058	0.0579	0.6944	1.4399	17.2783
1436.2	0.998597	1.4979	0.058	0.0579	0.6944	1.4400	17.2796
1436.4	0.998671	1.4980	0.058	0.0579	0.6944	1.4401	17.2810
1436.6	0.998745	1.4981	0.058	0.0579	0.6944	1.4402	17.2823

1436.8	0.998819	1.4982	0.058	0.0579	0.6944	1.4404	17.2836
1437	0.998893	1.4983	0.058	0.0579	0.6944	1.4405	17.2850
1437.2	0.998967	1.4985	0.058	0.0579	0.6944	1.4406	17.2863
1437.4	0.999041	1.4986	0.058	0.0579	0.6944	1.4407	17.2876
1437.6	0.999115	1.4987	0.058	0.0579	0.6944	1.4408	17.2890
1437.8	0.999189	1.4988	0.058	0.0579	0.6944	1.4409	17.2903
1438	0.999263	1.4989	0.058	0.0579	0.6944	1.4410	17.2916
1438.2	0.999337	1.4990	0.058	0.0579	0.6944	1.4411	17.2929
1438.4	0.99941	1.4991	0.058	0.0579	0.6944	1.4412	17.2943
1438.6	0.999484	1.4992	0.058	0.0579	0.6944	1.4414	17.2956
1438.8	0.999558	1.4993	0.058	0.0579	0.6944	1.4415	17.2969
1439	0.999632	1.4994	0.058	0.0579	0.6944	1.4416	17.2983
1439.2	0.999705	1.4996	0.058	0.0579	0.6944	1.4417	17.2996
1439.4	0.999779	1.4997	0.058	0.0579	0.6944	1.4418	17.3009
1439.6	0.999853	1.4998	0.058	0.0579	0.6944	1.4419	17.3022
1439.8	0.999926	1.4999	0.058	0.0579	0.6944	1.4420	17.3036
1440	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3049
1440.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1440.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1440.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1440.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1441	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1441.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1441.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1441.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1441.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1442	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1442.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1442.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1442.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1442.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1443	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1443.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1443.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1443.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1443.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1444	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1444.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1444.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1444.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1444.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1445	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1445.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1445.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1445.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1445.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1446	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056

1446.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1446.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1446.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1446.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1450.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1450.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1450.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1451.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1455.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1461.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1462.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1462.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1462.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1463	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1463.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1463.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1463.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1463.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1464	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1464.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1464.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1464.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056

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1465.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1465.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1465.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1465.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1466	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1466.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1466.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1466.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1466.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1467	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1467.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1467.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1467.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1467.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1468	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1468.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1468.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1468.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1469	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1469.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1469.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1469.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1469.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1470	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1470.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1470.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1471	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1471.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1471.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1471.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1471.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1472	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1473	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1474.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1475	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1475.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1475.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1475.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1475.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1476	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1476.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1476.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
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1477	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1477.2	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1477.4	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1477.6	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1477.8	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
1478	1	1.5000	0.058	0.0579	0.6944	1.4421	17.3056
					4953		51324

Appendix E

RECORDING REQUESTED BY:
Integral Partners Funding, LLC
898 San Clemente Drive Suite 100
Newport Beach, CA 92660

WHEN RECORDED MAIL TO:
Mary Cusick, City Clerk
City of Santa Clarita
23920 Valencia Boulevard, Suite 120
Santa Clarita, CA 91355

Space above this line for Recorder's use

TITLE(S)

MAINTENANCE COVENANT FOR PARCELS SUBJECT TO STANDARD URBAN STORMWATER MITIGATION PROGRAM (SUSMP) REQUIREMENTS

RECORDING REQUESTED BY:
Integral Partners Funding, LLC
898 San Clemente Drive Suite 100
Newport Beach, CA 92660

WHEN RECORDED MAIL TO:
Mary Cusick, City Clerk
City of Santa Clarita
23920 Valencia Boulevard, Suite 120
Santa Clarita, CA 91355

Recording Fee: _____ Space above this line for Recorder's use

Documentary Transfer Tax:

The property is located in the City of Santa Clarita.

MAINTENANCE COVENANT FOR PARCELS SUBJECT TO STANDARD URBAN STORMWATER MITIGATION PROGRAM (SUSMP) REQUIREMENTS

Pursuant to Section 17.95.110 of the Santa Clarita Municipal Code and Title 10, Chapter 10.04 of the Santa Clarita Municipal Code relating to the control of pollutants carried by storm water runoff, structural and/or treatment control Best Management Practices (BMPs) have been installed on the following property:

LEGAL DESCRIPTION

Assessor Parcel No(s): 2812-008-003,-013,-022 &-031

Tract/Parcel Map No.: 82126, Lot No.: _____

Address: Bouquet Canyon Road at Russ Jay Street
Santa Clarita, CA 91350

I xxxxxx, hereby certify that I/we am/are the legal owner(s) of property described above, and as such owners for the mutual benefit of future purchasers and transferees, their heirs, successors, and assigns (collectively "owner"), do hereby affix the following protective conditions to which their property, or portions thereof, shall be held, sold and/or conveyed:

1. That the owner(s) shall maintain the drainage devices such as paved swales, bench drains, inlets, catch basins, down-drains, pipes, and water quality devices on the property described above and as shown on plans submitted to the City of Santa Clarita, in a good and functional condition to safeguard the property and adjoining properties from damage and pollution.
2. That owner(s) shall conduct maintenance inspection of all Structural or Treatment Control BMPs on the property at least once a year and retain proof of the inspection. The annual maintenance inspections shall verify the legibility of all required stencils and signs and the owner shall repaint and label as necessary.
3. That owner(s) shall provide to new owner(s) with any conveyance of the property printed educational materials giving information on which storm water management facilities are present, the type(s) and location(s) of required maintenance signs, and required maintenance instructions.

Integral Partners Funding, LLC

_____ Date:_____
xxxxx, xxxxxxxxx

_____ Date:_____
(owner signs and dates above, type name and title here)

_____ Date:_____
(owner signs and dates above, type name and title here)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of _____ }

On _____ before me, _____, Notary Public,
Date Name of Notary

personally appeared _____
Name(s) of Signer(s)

_____,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to person relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Individual
☐ Corporate Officer --Title(s): _____
☐ Partner -- ☐ Limited ☐ General
☐ Attorney-in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

_____

Signer Is Representing: _____

_____

_____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____

☐ Individual
☐ Corporate Officer -- Title(s): _____
☐ Partner – ☐ Limited ☐ General
☐ Attorney-in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

_____

Signer Is Representing: _____

_____

_____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Appendix F

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S-1: Storm Drain Message and Signage

Purpose

Waste material dumped into storm drain inlets can adversely impact surface and ground waters. In fact, any material discharged into the storm drain system has the potential to significantly impact downstream receiving waters. Storm drain messages have become a popular method of alerting and reminding the public about the effects of and the prohibitions against waste disposal into the storm drain system. The signs are typically stenciled or affixed near the storm drain inlet or catch basin. The message simply informs the public that dumping of wastes into storm drain inlets is prohibited and/or that the drain ultimately discharges into receiving waters.

General Guidance

- The signs must be placed so they are easily visible to the public.
- Be aware that signs placed on sidewalk will be worn by foot traffic.

Design Specifications

- Signs with language and/or graphical icons that prohibit illegal dumping, must be posted at designated public access points along channels and streams within the project area. Consult with Los Angeles County Department of Public Works (LACDPW) staff to determine specific signage requirements for channels and streams.
- Storm drain message markers, placards, concrete stamps, or stenciled language/icons (e.g., "No Dumping – Drains to the Ocean") are required at all storm drain inlets and catch basins within the project area to discourage illegal or inadvertent dumping. Signs should be placed in clear sight facing anyone approaching the storm drain inlet or catch basin from either side (see Figure D-1 and Figure D-2). LACDPW staff should be contacted to determine specific requirements for types of signs and methods of application. A stencil can be purchased for a nominal fee from LACDPW Building and Safety Office by calling (626) 458-3171. All storm drain inlet and catch basin locations must be identified on the project site map.

Maintenance Requirements

Legibility and visibility of markers and signs should be maintained (e.g., signs should be repainted or replaced as necessary). If required by LACDPW, the owner/operator or homeowner's association shall enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards and signs.

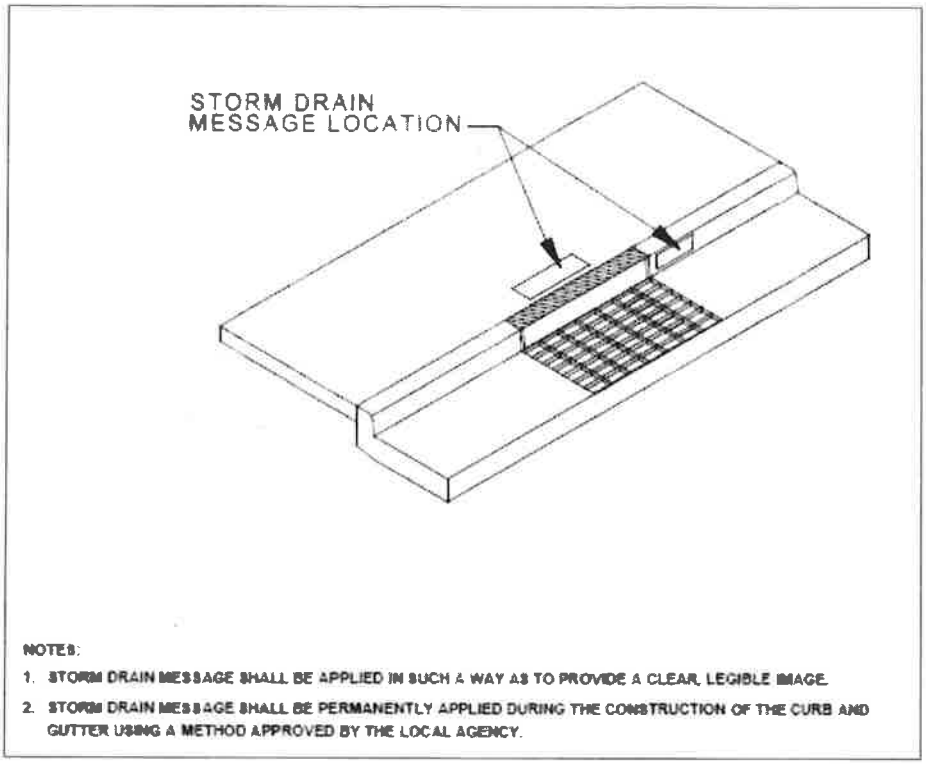

Figure D-1. Storm Drain Message Location – Curb Type Inlet

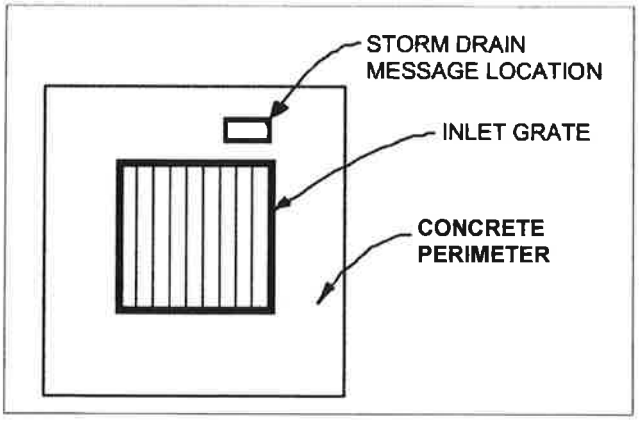

Figure D-2. Storm Drain Message Location – Catch Basin/Area Type Inlet

S-8: Landscape Irrigation Practices

Purpose

Irrigation runoff provides a pathway for pollutants (i.e., nutrients, bacteria, organics, sediment) to enter the storm drain system. By effectively irrigating, less runoff is produced resulting in less potential for pollutants to enter the storm drain system.

General Guidance

- Do not allow irrigation runoff from the landscaped area to drain directly to storm drain system.
- Minimize use of fertilizer, pesticides, and herbicides on landscaped areas.
- Plan sites with sufficient landscaped area and dispersal capacity (e.g., ability to receive irrigation water without generating runoff).
- Consult a landscape professional regarding appropriate plants, fertilizer, mulching applications, and irrigation requirements (if any) to ensure healthy vegetation growth.

Design Specifications

- Choose plants that minimize the need for fertilizer and pesticides.
- Group plants with similar water requirements and water accordingly.
- Use mulch to minimize evaporation and erosion.
- Include a vegetative boundary around project site to act as a filter.
- Design the irrigation system to only water areas that need it.
- Install an approved subsurface drip, pop-up, or other irrigation system.[1] The irrigation system should employ effective energy dissipation and uniform flow spreading methods to prevent erosion and facilitate efficient dispersion.
- Install rain sensors to shut off the irrigation system during and after storm events.
- Include pressure sensors to shut off flow-through system in case of sudden pressure drop. A sudden pressure drop may indicate a broken irrigation head or water line.
- If the hydraulic conductivity in the soil is not sufficient for the necessary water application rate, implement soil amendments to avoid potential geotechnical hazards (i.e., liquefaction, landslide, collapsible soils, and expansive soils).

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[1] If alternative distribution systems (e.g., spray irrigation) are approved, the County will establish guidelines to implement these new systems.

- For sites located on or within 50 feet of a steep slope (15% or greater), do not irrigate landscape within three days of a storm event to avoid potential geotechnical instability.[2]
- Implement Integrated Pest Management practices.

For additional guidelines and requirements, refer to the Los Angeles County Department of Health Services.

Maintenance Requirements

Maintain irrigation areas to remove trash and debris and loose vegetation. Rehabilitate areas of bare soil. If a rain or pressure sensor is installed, it should be checked periodically to ensure proper function. Inspect and maintain irrigation equipment and components to ensure proper functionality. Clean equipment as necessary to prevent algae growth and vector breeding. Maintenance agreements between LACDPW and the owner/operator may be required. Failure to properly maintain building and property may subject the property owner to citation.

[2] As determined by the City of Los Angeles, Building and Safety Division

S-9: Building Materials Selection

Purpose

Building materials can potentially contribute pollutants of concern to stormwater runoff through leaching. For example, metal buildings, roofing, and fencing materials may be significant sources of metals in stormwater runoff, especially due to acidic precipitation. The use of alternative building materials can reduce pollutant sources in stormwater runoff by eliminating compounds that can leach into stormwater runoff. Alternative building materials may also reduce the need to perform maintenance activities (i.e., painting) that involve pollutants of concern, and may reduce the volume of stormwater runoff. Alternative materials are available to replace lumber and paving.

Design Specifications

Lumber

Decks and other house components constructed using pressure-treated wood that is typically treated using arsenate, copper, and chromium compounds are hazardous to the environment. Pressure-treated wood may be replaced with cement-fiber or vinyl.

Roofs, Fencing, and Metals

Minimizing the use of copper and galvanized (zinc-coated) metals on buildings and fencing can reduce leaching of these pollutants into stormwater runoff. The following building materials are conventionally made of galvanized metals:

- Metal roofs;
- Chain-link fencing and siding; and
- Metal downspouts, vents, flashing, and trim on roofs.

Architectural use of copper for roofs and gutters should be avoided. As an alternative to copper and galvanized materials, coated metal products are available for both roofing and gutter application. Vinyl-coated fencing is an alternative to traditional galvanized chain-link fences. These products eliminate contact of bare metal with precipitation or stormwater runoff, and reduce the potential for stormwater runoff contamination. Roofing materials are also made of recycled rubber and plastic.

Green roofs may be an option. Green roofs use vegetation such as grasses and other plants as an exterior surface. The plants reduce the velocity of stormwater runoff and absorb water to reduce the volume of stormwater runoff. One potential problem with using green roofs in the Los Angeles County area is the long, hot and dry summers, which may kill the plants if they are not watered. See the Green Roof Fact Sheet (RET-7) in Appendix E.

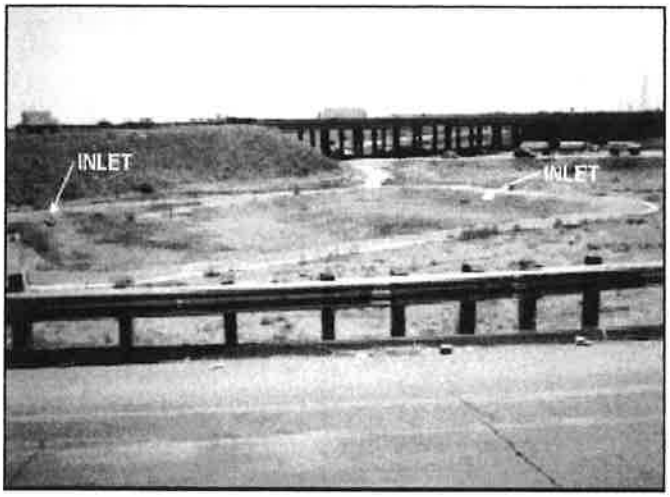
Pesticides

The use of pesticides around foundations can be reduced through the use of alternative barriers. Sand barriers can be applied around foundations to deter termites, as they cannot tunnel through sand. Metal shields also block termites from tunneling. Additionally, diatomaceous earth can be used to repel or kill a wide variety of other pests.

Maintenance Requirements

The integrity of structural elements that are subject to damage (e.g., signs) must be maintained by the owner/operator as required by local codes and ordinances. Maintenance agreements between LACDPW and the owner/operator may be required. Failure to properly maintain building and property may subject the property owner to citation.

RET-2: Infiltration Basin



Description

An infiltration basin is a shallow earthen basin constructed in naturally permeable soil designed for retaining and infiltrating stormwater runoff into the underlying native soils and the groundwater table. The bottoms of the basins are typically vegetated with dry-land grasses or irrigated turf grass. Infiltration basins can provide stormwater runoff treatment through a variety of natural mechanisms (i.e., filtration, adsorption, biological degradation) as water flows through the soil profile.

A schematic of a typical infiltration basin is presented in Figure E-2.

LID Ordinance Requirements

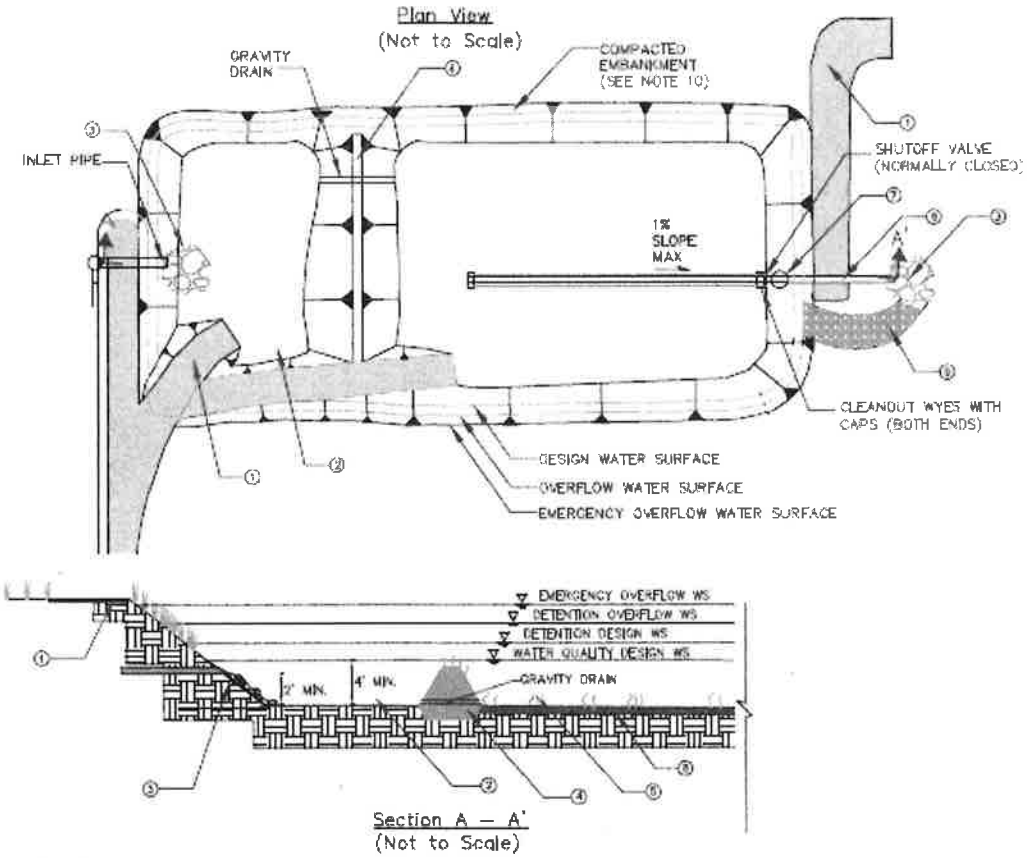
Infiltration basins can be used to meet the on-site retention requirements of the LID Ordinance. Infiltration basins will prevent pollutants in the SWQDv from being discharged off-site.

Advantages

- Retains stormwater runoff and eliminates pollutant discharge
- Reduces peak stormwater runoff flows, which provides erosion control
- Provides groundwater recharge

Disadvantages

- May not be appropriate for areas with too low or too high permeability soils
- May not be appropriate for industrial sites or locations with contaminated soils or where spills may occur because of the potential threat to groundwater contamination
- Must be protected from high sediment loads
- May result in standing water, which may allow vector breeding
- Has a large footprint
- Is not appropriate on fill or sites with steep slopes



NOTES:

(1) MAINTENANCE RAMP SHOULD BE PAVED. SLOPE SHOULD NOT EXCEED 12%. MAINTENANCE RAMP SHOULD PROVIDE ACCESS TO BOTH THE FIRST CELL AND MAIN BASIN.

(2) UPSTREAM PRETREATMENT SHALL BE PROVIDED. SEDIMENT FOREBAY WITH VOLUME EQUAL TO 25% OF TOTAL INFILTRATION BASIN VOLUME MAY BE USED IN LIEU OF UPSTREAM PRETREATMENT. DEPTH SHALL BE 4' MIN TO 8' MAX PLUS AN ADDITIONAL 1 FOOT MIN SEDIMENT STORAGE DEPTH.

(3) RIP RAP APRON OR OTHER ENERGY DISSIPATION.

(4) EXTEND EARTHEN BERM ACROSS ENTIRE WIDTH OF THE INFILTRATION BASIN.

(5) INFILTRATION BASIN BOTTOM AND SIDE SLOPES SHALL BE PLANTED WITH DROUGHT TOLERANT VEGETATION. DEEP ROOTED VEGETATION PREFERRED FOR BASIN BOTTOM. NO TOPSOIL SHALL BE ADDED TO INFILTRATION BASIN BED.

(6) SIZE OUTLET PIPE TO PASS CAPITAL DESIGN PEAK FLOW FOR ON-LINE INFILTRATION BASINS AND WATER QUALITY PEAK FLOW FOR OFF-LINE INFILTRATION BASINS.

(7) WATER QUALITY OUTLET STRUCTURE. SEE FIGURE 7-2 AND FIGURE 7-3 FOR DETAILS.

(8) OVER EXCAVATE BASIN BOTTOM 1 FOOT. RE-PLACE EXCAVATED MATERIAL UNIFORMLY WITHOUT COMPACTION. AMENDING EXCAVATED MATERIAL WITH 2" – 4" OF COARSE SAND IS RECOMMENDED FOR SOILS WITH BORDER LINE INFILTRATION CAPACITY.

(9) INSTALL EMERGENCY OVERFLOW SPILLWAY AS NEEDED. SEE FIGURE 2-4 FOR DETAILS.

(10) EMBANKMENT SIDE SLOPES SHALL BE NO STEEPER THAN 3H:1V (BOTH OUTSIDE AND INSIDE.

Figure E-2. Infiltration Basin Schematic

General Constraints and Implementation Considerations

- Infiltration basins can be applied to a variety of situations, including, but not limited to:
  - Mixed use and commercial development;
  - Roads and parking lots;
  - Parks and open space; and
  - Single- and multi-family residential
- Infiltration basins can be integrated into open space buffers and other landscape areas.
- The potential for groundwater contamination must be carefully considered,. Infiltration basins are not suitable for sites that:
  - Use or store chemicals or hazardous materials, unless they are prevented from entering the basin; or
  - Un-remediated "brownfield sites" where there is known groundwater or soil contamination.
- If the corrected in-situ infiltration rate exceeds 2.4 in/hr, then stormwater runoff may need to be fully-treated with an upstream stormwater quality control measure prior to infiltration to protect groundwater quality.
- Infiltration basins cannot be located on sites with a slope greater than 20 percent (5:1).
- Pretreatment to remove sediment is required to protect infiltration basin from high sediment loads. If upstream pretreatment devices are not provided, a sediment forebay, which takes up at least 25 percent of the basin area, is required.
- If possible, the entire tributary area of the infiltration basin should be stabilized before construction begins. If this is not possible, all flows should be diverted around the infiltration basin to protect it from sediment loads during construction or the top two inches of soil from the infiltration basin floor should be removed after the site has been stabilized. Excavated material should be stored such that it cannot be washed back into the infiltration basin if a storm occurs during construction.
- The equipment used to construct the infiltration basin should have extra wide, low-pressure tires. Construction traffic should not enter the infiltration basin because it can compact soil, which reduces infiltration capacity. If heavy equipment is used on the base of the infiltration basin, the infiltrative capacity may be restored by tilling or aerating prior to placing the infiltrative bed.
- Final grading must produce a level basin bottom without low spots or depressions. After final grading, the infiltration basin bottom should be deep-tilled to improve infiltration.

- After construction is completed, the entire tributary area to the infiltration basin should be stabilized before allowing stormwater runoff to enter it.

Design Specifications

The following sections provide design specifications for infiltration basins.

Geotechnical

Due to the potential to contaminate groundwater, cause slope instability, impact surrounding structures, and potential for insufficient infiltration capacity, an extensive geotechnical site investigation must be conducted during the site planning process to verify site suitability for an infiltration basin. All geotechnical investigations must be performed according to the most recent GMED Policy GS 200.1. Soil infiltration rates and the groundwater table depth must be evaluated to ensure that conditions are satisfactory for proper operation of an infiltration basin. The project applicant must demonstrate through infiltration testing, soil logs, and the written opinion of a licensed civil engineer that sufficiently permeable soils exist on-site to allow the construction of a properly functioning infiltration basin.

Infiltration basins are appropriate for soils with a minimum corrected in-situ infiltration rate of 0.3 in/hr. The geotechnical report must determine if the proposed project site is suitable for an infiltration basin and must recommend a design infiltration rate (see "Design Infiltration Rate" under the "Sizing" section). The geotechnical investigation should be such that a good understanding is gained as to how the stormwater runoff will move through the soil (horizontally or vertically) and if there are any geological conditions that could inhibit the movement of water.

Pretreatment

Pretreatment is important for all structural stormwater quality control measures, but it is particularly important for retention facilities. Pretreatment refers to design features that provide settling of large particles before stormwater runoff enters a stormwater quality control measure in order to reduce the long-term maintenance burden. Pretreatment should be provided to reduce the sediment load entering an infiltration basin in order to maintain the infiltration rate of the infiltration basin. To ensure that infiltration basins are effective, the project applicant must incorporate pretreatment devices that provide sediment reduction (e.g., vegetated swales, vegetated filter strips, sedimentation basins or forebays, sedimentation manholes, and proprietary devices). The use of at least two pretreatment devices is highly recommended for infiltration basins.

Setbacks

Infiltration basins must be sited following the setbacks from the most recent GMED Policy GS 200.1.

Geometry

- Infiltration basins must be designed and constructed with the flattest bottom slope possible to promote uniform ponding and infiltration.
- The side slopes must be no steeper than 3:1 (H:V).
- If upstream pretreatment is not provided to reduce sediment loads or if the tributary catchment area is mostly impervious, a sediment forebay is required. The sediment forebay should be separated from the infiltration basin by a berm or similar feature, and must be equal to 25 percent of the total infiltration basin volume. The sediment forebay must be designed with a minimum length-to-width ratio of 2:1 and must completely drain to the main infiltration basin through an 8-inch (minimum) low-flow outlet. All inlets must enter the sediment forebay. If there are multiple inlets into the sediment forebay, the length-to-width ratio is based on the average flow path length for all inlets.

Embankments

Embankments are earthen slopes or berms used to detain or redirect the flow of water. For infiltration basins, the embankments must be design with the following specifications:

- All earthworks must be conducted in accordance with the Standard Specifications for Public Works Construction.
- The minimum top width of all berm embankments must be 20 feet, unless otherwise approved by GMED.
- Berm embankments must be constructed on native consolidated soil or adequately compacted and stable fill soils approved by a licensed geotechnical engineer. Soils must be free of loose surface soil materials, roots, and other organic debris.
- Berm embankments must be constructed of compacted soil (95 percent minimum dry density, Modified Proctor method per ASTM D1557) and placed in 6-inch lifts.
- Berm embankments greater than 4 feet in height must be constructed by excavating a key equal to 50 percent of the berm embankment cross-sectional height and width. This requirement may be waived if specifically recommended by a licensed geotechnical engineer.
- Low growing native or non-invasive perennial grasses must be planted on downstream embankment slopes. See Attachment B of the Vegetation Management on Embankment Dams of Public Works' Debris Control Facilities for a recommended plant list.

Sizing

Infiltration basins are sized using a simple sizing method where the SWQDv must be completely infiltrated within 96 hours. Infiltration basins provide stormwater runoff storage above ground.

Step 1: Determine the SWQDv

Infiltration basins must be designed to capture and retain the SWQDv (see Section 6 for SWQDv calculation procedures).

Step 2: Determine the design infiltration rate

Determine the corrected in-situ infiltration rate (f_{design}) of the native soil using the procedures described in the most recent GMED Policy GS 200.1.

Step 3: Calculate the surface area

Determine the required size of the infiltration surface by assuming the SWQDv will fill the available ponding depth. The maximum depth of stormwater runoff that can be infiltrated within the maximum retention time (96 hrs) is calculated using the following equation:

$$d_{max} = \frac{f_{design}}{12} \times t$$

Where:

d_{max} = Maximum depth of water that can be infiltrated within the required drawdown time [ft];
f_{design} = Design infiltration rate [in/hr]; and
t = Maximum detention time (max 96 hrs) [hr].

Select the ponding depth (d_p) such that:

$$d_{max} \geq d_p$$

Where:

d_{max} = Maximum depth of water that can be infiltrated within the maximum retention time [ft]; and
d_p = Ponding depth (max 1.5 ft) [ft].

Calculate the infiltrating surface area (bottom of the infiltration basin) required:

$$A = \frac{SWQDv}{d_p}$$

Where:

A = Surface area of the bottom of the infiltration basin [ft^2];
SWQDv = Stormwater quality design volume [ft^3]; and
d_p = Ponding depth [ft].

Flow Entrance and Energy Dissipation

Energy dissipation controls, constructed of sound materials such as stones, concrete, or proprietary devices that are rated to withstand the energy of the influent flow, must be installed at the inlet to the infiltration basin or its forebay. Flow velocity at the inlet must be 4 ft/s or less. Consult with LACDPW for the type and design of energy dissipation structure.

Drainage

The specifications for designing drainage systems for infiltration basins are presented below:

- The bottom of infiltration basin must be native soil that is over-excavated at least one foot in depth with the soil replaced uniformly without compaction. Amending excavated soil with two to four inches (~15 to 30 percent) of coarse sand is recommended.
- The use of vertical piping, either for distribution or infiltration enhancement, is prohibited. This application may be classified as a Class V Injection Well per 40 CFR Part 146.5(e)(4).
- The infiltration capacity of the subsurface layers should be sufficient to ensure a maximum retention time of 96 hours.

Hydraulic Restriction Layer

Lateral infiltration pathways may need to be restricted due to the close proximity of roads, foundations, or other infrastructure. A geomembrane liner, or other equivalent waterproofing, may be placed along the vertical walls to reduce lateral flows. The geomembrane liner must have a minimum thickness of 30 mils and meet the requirements of Table E-13. Generally, waterproof barriers must not be placed at the bottom of the bioretention area as it would prevent incidental infiltration which is important to meeting the required on-site retention requirement.

Table E-3. Geomembrane Liner Specifications for Bioretention Areas

Parameter	Test Method	Specifications
Material		Non-woven geomembrane liner
Unit weight		8 oz/yd^3 (minimum)
Filtration rate		0.08 in/sec (minimum)
Puncture strength	ASTM D-751 (Modified)	125 lbs (minimum)
Mullen burst strength	ASTM D-751	400 lb/in^2 (minimum)
Tensile strength	AST D-1682	300 lbs (minimum)
Equiv. opening size	US Standard Sieve	No. 80 (minimum)

Vegetation

- A thick mat of drought-tolerant grass should be established on the infiltration basin floor and side-slopes following construction. Grasses can help prevent erosion and increase evapotranspiration, and their rhizomes discourage compaction within the root zone to help maintain infiltration rates. Additionally, active growing vegetation can help break up surface crusts that accumulate from sedimentation of fine particulates.
- Grass may need to be irrigated during establishment.
- The infiltration basin will not be accepted by LACDPW until vegetation is well-established and functioning.

Exterior Landscaping

Landscaping outside of the infiltration basin, but within the easement/right-of-way, is required and must adhere to the following specifications such that it will not hinder maintenance operations:

- Trees or shrubs may not be planted within ten feet of inlet or outlet pipes or manmade drainage structures such as spillways, flow spreaders, or earthen embankments. Species with roots that seek water, such as willow or poplar, may not be planted within 50 feet of pipes or manmade structures. Weeping willow (*Salix babylonica*) may not be planted in or near infiltration basins.
- Non-native plant species are not permitted.
- Other resources for identifying suitable plant types can be found by consulting a nursery, arborist, landscape architect, or referring to online resources such as:
    - Calflora (http://calflora.org), which is a database of wild California plants that include plant characteristics and photos.
    - Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes (http://ladpw.org/wmd/watershed/LA/LAR_planting_guidelines_webversion

.pdf), which is a guidance document providing a listing of native plant communities in the Los Angeles area.

- The Jepson Online Interchange California Floristics (http://ucjeps.berkeley.edu/interchange.html), which is a database that provides information on identification, taxonomy, distribution, ecology, relationships, and diversity of California vascular plants.
- VegSpec (http://catalog.data.gov/dataset/vegspec), which is a web-based decision support system that assists land managers in the planning and design with vegetative establishment practices.
- United States Department of Agriculture (http://plants.usda.gov/java), which is an extensive database of native and non-native plants of the United States with over 100 plant characteristics.

Restricted Construction Materials

Use of pressure-treated wood or galvanized metal at or around an infiltration basin is prohibited.

Overflow Device

An overflow device must be provided in the event that stormwater runoff overtops the infiltration basin or if the infiltration basin becomes clogged. The overflow device must be able to convey stormwater runoff to a downstream conveyance system or other acceptable discharge point.

Maintenance Access

Maintenance access must be provided to the drainage structures associated with the infiltration basin (e.g., inlet, overflow or bypass devices) if it is publicly-maintained. Manhole and catch basin lids must be in or at the edge of the access road. An access ramp to the infiltration basin bottom is required to facilitate the entry of sediment removal and vegetation maintenance equipment without compacting the bottom and side slopes of the infiltration basin.

Access roads must meet the following design specification:

- All access ramps and roads must be paved with a minimum of six inches of concrete over three inches of crushed aggregate base material. This requirement may be modified depending on the soil conditions and intended use of the road at the discretion of LACDPW.
- The maximum grade is 12 percent unless otherwise approved by LACDPW.
- Centerline turning radius must be a minimum of 40 feet.
- Access roads less than 500 feet long must have a 12-foot wide pavement within a minimum 15-foot wide bench. Access roads greater than 500 feet long must have a 16-foot wide pavement within a minimum 20-foot wide bench.

- All access roads must terminate with turnaround areas of 40-feet by 40-feet. A hammer type turnaround area or a circle drive around the top of the infiltration basin is also acceptable.
- Adequate double-drive gates and commercial driveways are required at street crossings. Gates must be located a minimum of 25 feet from the street curb except in residential areas where the gates may be located along the property line provided there is adequate sight distance to see oncoming vehicles at the posted speed limit.

Maintenance Requirements

Maintenance and regular inspections are important for proper function of infiltration basins. The following are general maintenance requirements:

- Conduct regular inspection and routine maintenance for pretreatment devices.
- Inspect infiltration basin frequently to ensure that water infiltrates into the subsurface completely within maximum detention time of 96 hours. If water is present in the infiltration basin more than 96 hours after a major storm, the infiltration basin may be clogged. Maintenance activities triggered by a potentially clogged facility include:
    - Check for debris/sediment accumulation, rake surface and remove sediment (if any), and evaluate potential sources of sediment and vegetative or other debris (i.e., embankment erosion, channel scour, overhanging trees). If suspected upstream sources are outside of the County's jurisdiction, additional pretreatment (i.e., trash racks, vegetated swales) may be necessary.
    - Determine if it is necessary to remove the top layer of native soil to restore infiltrative capacity.
- Remove and dispose of trash and debris, as needed, but at least prior to the beginning of the wet season.
- Eliminate standing water to prevent vector breeding.
- Maintain vegetation as needed to sustain the aesthetic appearance of the site, and as follows:
    - Prune and/or remove vegetation, large shrubs, or trees that limit access or interfere with operation of the infiltration basin.
    - Mow grass to four to nine inches high and remove grass clippings.
    - Rake and remove fallen leaves and debris from deciduous plant foliage.
    - Remove and replace invasive vegetation with native vegetation. Invasive species should never contribute more than 25 percent of the vegetated area. For more information on invasive weeds, including biology and control of listed weeds, look at the "encycloweedia" located at the California Department of Food and Agriculture website

(http://www.cdfa.ca.gov/plant/ipc/encycloweedia/encycloweedia_hp.htm) or the California Invasive Plant Council website (www.cal-ipc.org).

  - Remove dead vegetation if it exceeds 10 percent of area coverage. Replace vegetation immediately to maintain cover density and control erosion where soils are exposed.
  - Do not use herbicides or other chemicals to control vegetation

- If a sediment forebay is used, remove sediment buildup exceeding 50 percent of the sediment storage capacity, as indicated by the steel markers. Remove sediment from the rest of the infiltration basin when it accumulates six inches. Test removed sediments for toxic substance accumulation in compliance with current disposal requirements if visual or olfactory indications of pollution are noticed. If toxic substances are detected at concentrations exceeding thresholds of Title 22, Section 66261 of the California Code of Regulations, dispose of the sediment in a hazardous waste landfill and investigate and mitigate the source of the contaminated sediments to the maximum extent possible.
- Re-establish vegetation, which may require replanting and/or reseeding, following sediment removal activities.
- Inspect overflow devices for obstructions or debris, which should be removed immediately. Repair or replace damaged pipes upon discovery.

A summary of potential problems that need to be addressed by maintenance activities is presented in Table E-4.

The County requires execution of a maintenance agreement to be recorded by the property owner for the on-going maintenance of any privately-maintained stormwater quality control measures. The property owner is responsible for compliance with the maintenance agreement. A sample maintenance agreement is presented in Appendix H.

Table E-4. Infiltration Basin Troubleshooting Summary

Problem	Conditions When Maintenance Is Needed	Maintenance Required
Vegetation	Overgrown vegetation	Mow and trim vegetation to prevent establishment of woody vegetation, and for aesthetics and vector control reasons.
	Presence of invasive, poisonous, nuisance, or noxious vegetation or weeds	Remove this vegetation.
	Excessive loss of turf or ground cover	Replant and/or reseed as needed.
Trash and Debris	Trash and debris > 5 ft^3/1,000 ft^2	Remove and dispose of trash and debris.
Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants	Remove any evidence of visual contamination.
Erosion	Undercut or eroded areas at inlet structures	Repair eroded areas and re-grade if necessary.
Sediment Accumulation	Accumulation of sediment, debris, and oil/grease in forebay, pretreatment devices, surface, inlet, or overflow structures	Remove sediment, debris, and/or oil/grease.
Water Drainage Rate	Standing water	Remove the top layer of the infiltration basin bottom if necessary.

BIO-1: Biofiltration

Definition

A biofiltration area is a vegetated shallow depression that is designed to receive and treat stormwater runoff from downspouts, piped inlets, or sheet flow from adjoining paved areas. A shallow ponding zone is provided above the vegetated surface for temporary storage of stormwater runoff. During storm events, stormwater runoff accumulates in the ponding zone and gradually infiltrates the surface and filters through the biofiltration soil media before being collected by an underdrain system.

Stormwater runoff treatment occurs through a variety of natural mechanisms as stormwater runoff filters through the vegetation root zone. In biofiltration areas, microbes and organic material in the biofiltration soil media help promote the adsorption of pollutants (e.g., dissolved metals and petroleum hydrocarbons) into the soil matrix. Plants utilize soil moisture and promote the drying of the soil through transpiration. Biofiltration areas are typically planted with native, drought-tolerant plant species that do not require fertilization and can withstand wet soils for at least 96 hours.

A schematic of a typical biofiltration area is presented in Figure E-7.

LID Ordinance Requirements

Biofiltration can be used as an alternative compliance measure.

Pollutant of Concern	Treated by Biofiltration?
Suspended solids	No
Total phosphorus	No
Total nitrogen	Yes
Total Kjeldahl nitrogen	Yes
Cadmium, total	No
Chromium, total	Yes
Copper, total	No
Lead, total	Yes
Zinc, total	No

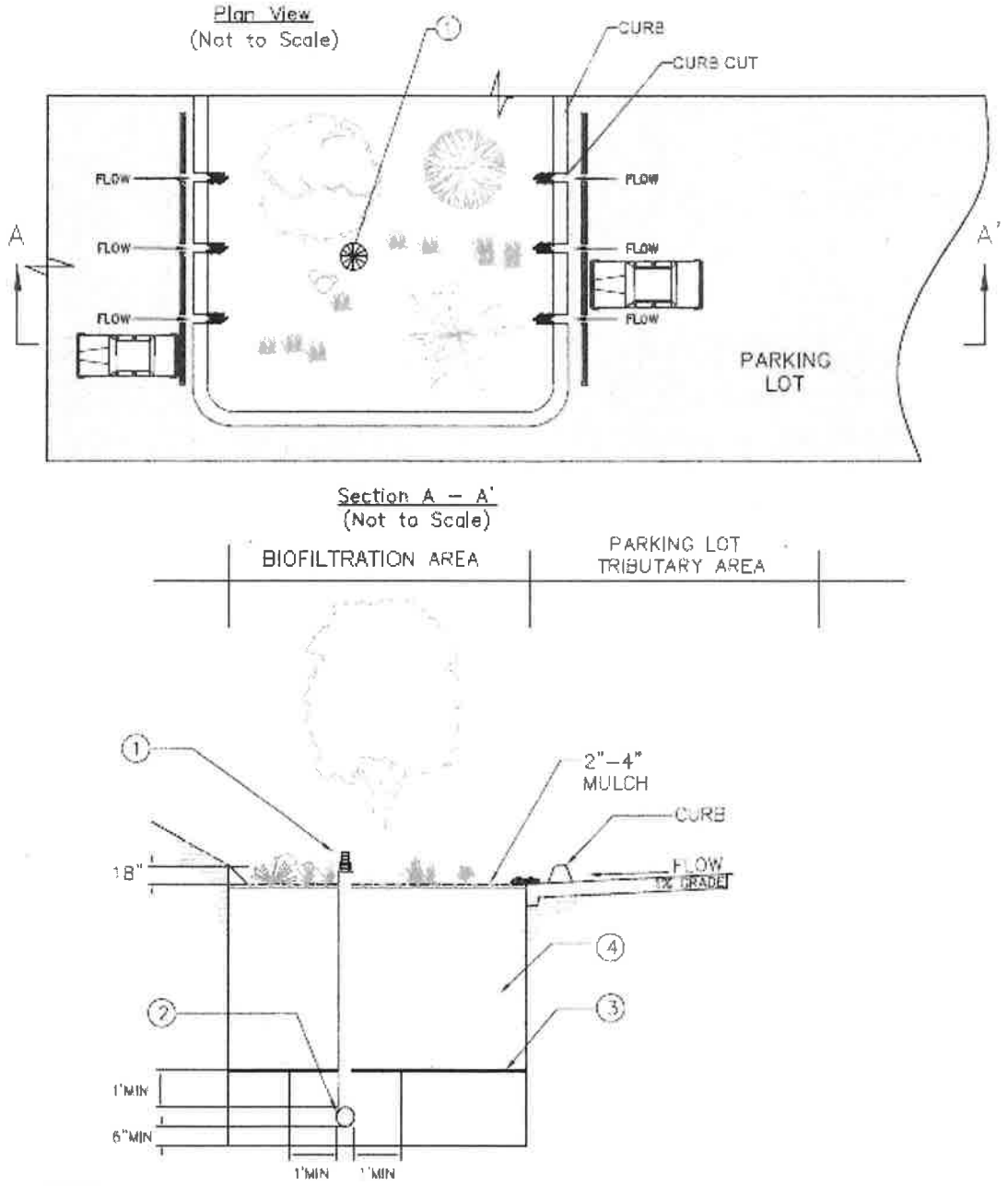
Source: Treatment Best Management Practices Performance, Los Angeles Regional Water Quality Control Board, December 9, 2013.

Advantages

- Has a low cost for installation
- Enhances site aesthetics
- Requires little maintenance

Disadvantages

- May require individual owner/tenants to perform maintenance



NOTES

① OVERFLOW DEVICE: VERTICAL RISER OR EQUIVALENT.

② PERFORATED 6" MIN PVC PIPE UNDERDRAIN SYSTEM. WHERE SOIL CONDITIONS ALLOW, OMIT THE UNDERDRAIN AND INSTALL AN APPROPRIATELY SIZED GRAVEL DRAINAGE LAYER (TYPICALLY A WASHED 57 STONE) BENEATH THE PLANTING MEDIA FOR ENHANCED INFILTRATION.

③ OPTIONAL CHOKING GRAVEL LAYER.

④ 2' MIN PLANTING MIX; 3' PREFERRED.

Figure E-7. Biofiltration Area Schematic

General Constraints and Implementation Considerations

- Biofiltration areas can be applied in various settings including, but not limited to:
  - Individual lots for rooftop, driveway, and other on-site impervious surface
  - Shared facilities located in common areas for individual lots
  - Areas within loop roads or cul-de-sacs
  - Landscaped parking lot islands
  - Within right-of-ways along roads
  - Common landscaped areas in apartment complexes or other multi-family housing designs
  - Parks and along open space perimeter
- If tire curbs are provided and parking stalls are shortened, cars are allowed to overhang the biofiltration area.
- Biofiltration areas must be located sufficiently far from structure foundations to avoid damage to structures (as determined by a certified structural or geotechnical engineer).
- Any parking areas bordering the biofiltration area must be monolithically poured concrete or deepended curb concrete to provide structural stability to the adjacent parking section.
- Geomembrane liners must be used in areas subject to spills or pollutant hot spots.
- During construction activities should avoid compaction of native soils below planting media layer or gravel zone.
- Stormwater runoff must be diverted around the biofiltration area during the period of vegetation establishment. If diversion is not feasible, the graded and seeded areas must be protected with suitable sediment controls (i.e., silt fences).All damaged areas should be repaired, seeded, or re-planted immediately.
- The general landscape irrigation system should incorporate the biofiltration area, as applicable.

Design Specifications

The following sections describe the design specifications for biofiltration areas.

Geotechnical

Due to the potential to contaminate groundwater, cause slope instability, impact surrounding structures, and potential for insufficient infiltration capacity, an extensive geotechnical site investigation must be conducted during the site planning process to verify site suitability for biofiltration. All geotechnical investigations must be performed according to the most recent GMED Policy GS 200.1. Soil infiltration rates and the

groundwater table depth must be evaluated to ensure that conditions are satisfactory for proper operation of a biofiltration area. The project applicant must demonstrate through infiltration testing, soil logs, and the written opinion of a licensed civil engineer that sufficiently permeable soils exist on-site to allow the construction of a properly functioning biofiltration system.

Biofiltration areas are appropriate for soils with a minimum corrected in-situ infiltration rate of 0.3 in/hr. The geotechnical report must determine if the proposed project site is suitable for a biofiltration area and must recommend a design infiltration rate (see "Design Infiltration Rate" under the "Sizing" section). The geotechnical investigation should be such that a good understanding is gained as to how the stormwater runoff will move through the soil (horizontally or vertically) and if there are any geological conditions that could inhibit the movement of water.

Pretreatment

Pretreatment refers to design features that provide settling of large particles before stormwater runoff enters a stormwater quality control measure in order to reduce the long-term maintenance burden. Pretreatment should be provided to reduce the sediment load entering a biofiltration area in order to maintain the infiltration rate of the biofiltration area. To ensure that biofiltration areas are effective, the project applicant must incorporate pretreatment devices that provide sediment removal (e.g., vegetated swales, vegetated filter strips, sedimentation manholes, and proprietary devices). The use of at least two pretreatment devices is highly recommended for biofiltration areas.

Geometry

- Biofiltration areas must be sized to capture and treat 1.5 times the SWQDv that is not reliably retained on the project site with an 18-inch maximum ponding depth.
- The planting soil depth must be a minimum of two feet, although three feet is preferred. The planting soil depth should provide a beneficial root zone for the chosen vegetation and adequate water storage for the stormwater runoff. A deeper planting soil depth will also provide a smaller surface area footprint.
- A gravel storage layer below the biofiltration area soil media is required to provide adequate temporary storage to retain 1.5 times the SWQDv that is not reliably retained on the project site and to promote infiltration.

Sizing

Biofiltration areas are sized using a simple sizing method where 1.5 times the SWQDv that is not reliably retained on the project site must be completely filtered within 96 hours. If the incoming stormwater runoff flow rate is lower than the long term filtration rate, above ground storage does not need to be provided. If the incoming stormwater runoff flow rate is higher than the long term filtration rate, above ground storage shall be provided (see steps below).

Step 1: Calculate the design volume

Biofiltration areas should be sized to capture and treat 1.5 times the portion of the SWQDv (see Section 6 for SWQDv calculation procedures) that is not reliability retained on the project site, as calculated by the equation below:

$$V_B = 1.5 \times (SWQDv - V_R)$$

Where:

V_B = Biofiltration volume [ft^3];
SWQDv = Stormwater quality design volume [ft^3]; and
V_R = Volume of stormwater runoff reliably retained on-site [ft^3].

Step 2: Calculate the design infiltration rate

Determine the corrected in-situ infiltration rate (f_{design}) of the native soil using the procedures described in the most recent GMED Policy GS 200.1.

Step 3: Calculate the surface area

Select a surface ponding depth (d) that satisfies the geometric criteria and meets the site constraints. Selecting a deeper ponding depth (up to 1.5 ft) generally yields a smaller footprint, however, it will require greater consideration for public safety, energy dissipation, and plant selection.

Calculate the time for the selected ponding depth to filter through the planting media using the following equation:

$$\mathrm{d} = t_p \times \frac{\mathrm{f_{design}}}{12}$$

Where:

d = Ponding depth (max 1.5 ft) [ft];
t_p = Required detention time for surface ponding (max 96 hr) [hr]; and
f_{design} = Design infiltration rate [in/hr].

If t_p exceeds 96 hours, reduce surface ponding depth (d). In nearly all cases, t_p should not approach 96 hours unless f_{design} is low.

Calculate the required infiltrating surface (filter bottom area) using the following equation:

$$A = \frac{V_B}{d}$$

Where:

A = Bottom surface area of biofiltration area [ft^2];
V_B = Biofiltration design volume [ft^3]; and
d = Ponding depth (max 1.5 ft) [ft].

Flow Entrance and Energy Dissipation

Maintain a minimum slope of 1 percent for pervious surfaces and 0.5 percent for impervious surfaces to the biofiltration area inlet. The following types of flow entrance can be used for biofiltration cells:

- Level spreaders (i.e., slotted curbs) can be used to facilitate sheet flow.
- Dispersed, low velocity flow across a landscape area. Dispersed flow may not be possible given space limitations or if the biofiltration area is controlling roadway or parking lot flows where curbs are mandatory.
- Dispersed flow across pavement or gravel and past wheel stops for parking areas.
- Flow spreading trench around perimeter of biofiltration area. May be filled with pea gravel or vegetated with 3:1 side slopes similar to a swale. A vertical-walled open trench may also be used at the discretion of LACDPW.
- Curb cuts for roadside or parking lot areas, if approved by LACDPW: curb cuts should include rock or other erosion controls in the channel entrance to dissipate energy. Flow entrance should drop two to three inches from curb line and provide an area for settling and periodic removal of sediment and coarse material before flow dissipates to the remainder of the biofiltration area.
- Piped entrances, such as roof downspouts, should include rock, splash blocks, or other erosion controls at the entrance to dissipate energy and disperse flows.
- Woody plants (trees, shrubs, etc.) can restrict or concentrate flows and can be damaged by erosion around the root ball and must not be placed directly in the entrance flow path.

Drainage

Biofiltration areas must be designed to drain below the planting soil in less than 96 hours. Soils must be allowed to dry out periodically in order to restore hydraulic capacity to receive stormwater runoff from subsequent storm events, maintain infiltration rates, maintain adequate soil oxygen levels for healthy soil biota and vegetation, and provide proper soil conditions for biodegradation and retention of pollutants.

Underdrain

Biofiltration areas require an underdrain to collect and discharge stormwater runoff that has been filtered through the soil media, but not infiltrated, to another stormwater quality control measure, storm drain system, or receiving water. The underdrain must have a mainline diameter of eight inches using slotted PVC SDR 26 or PVC C9000. Slotted PVC allows for pressure water cleaning and root cutting, if necessary. The slotted pipe

should have two to four rows of slots cut perpendicular to the axis of the pipe or at right angles to the pitch of corrugations. Slots should be 0.04 to 0.1 inches wide with a length of 1 to 1.25 inches. Slots should be longitudinally-spaced such that the pipe has a minimum of one square inch opening per lineal foot and should face down.

The underdrain should be placed in a gravel envelope (Class 2 Permeable Material per Caltrans Spec. 68-1.025) that measures three feet wide and six inches deep. The underdrain is elevated from the bottom of the biofiltration area by six inches within the gravel envelope to create a fluctuating anaerobic/aerobic zone below the underdrain to facilitate denitrification within the anaerobic/anoxic zone and reduce nutrient concentrations. The top and sides of the underdrain pipe should be covered with gravel to a minimum depth of 12 inches. The underdrain and gravel envelope should be covered with a geomembrane liner to prevent clogging. The following aggregate should be used for the gravel envelope:

Particle Size (ASTM D422)	% Passing by Weight
¾ inch	100%
¼ inch	30-60%
#8	20-50%
#50	3-12%
#200	0-1%

Underdrains should be sloped at a minimum of 0.5 percent and must drain freely to an approved discharge point.

Rigid non-perforated observation pipes with a diameter equal to the underdrain diameter should be connected to the underdrain to provide a clean-out port as well as an observation well to monitor drainage rates. The wells/clean-outs should be connected to the perforated underdrain with the appropriate manufactured connections. The wells/clean-outs should extend six inches above the top elevation of the biofiltration area mulch, and should be capped with a lockable screw cap. The ends of underdrain pipes not terminating in an observation well/clean-out should also be capped.

Hydraulic Restriction Layer

Lateral infiltration pathways may need to be restricted due to the close proximity of roads, foundations, or other infrastructure. A geomembrane liner, or other equivalent waterproofing, may be placed along the vertical walls to reduce lateral flows. This geomembrane liner must have a minimum thickness of 30 mils and meet the requirements of Table E-12. Generally, waterproof barriers should not be placed on the bottom of the biofiltration unit, as this would prevent incidental infiltration which is important to meeting the required pollutant load reduction.

Table E-12. Geomembrane Liner Specifications for Biofiltration Areas

Parameter	Test Method	Specifications
Material		Nonwoven geomembrane liner
Unit weight		8 oz/yd^3 (minimum)
Filtration rate		0.08 in/sec (minimum)
Puncture strength	ASTM D-751 (Modified)	125 lbs (minimum)
Mullen burst strength	ASTM D-751	400 lb/in^2 (minimum)
Tensile strength	AST D-1682	300 lbs (minimum)
Equiv. opening size	US Standard Sieve	No. 80 (minimum)

Planting/Storage Media

- The planting media placed in the biofiltration area should achieve a long-term, in-place infiltration rate of at least 5 in/hr. Higher infiltration rates of up to 12 in/hr are permissible. The biofiltration soil media must retain sufficient moisture to support vigorous plant growth.
- The planting media mix must consist of 60 to 80 percent sand and 20 to 40 percent compost.
- Sand should be free of wood, waste, coatings such as clay, stone dust, carbonate, or any other deleterious material. All aggregate passing the No. 200 sieve size should be non-plastic. Sand for biofiltration should be analyzed by an accredited laboratory using #200, #100, #40, #30, #16, #8, #4, and 3/8 sieves (ASTM D422 or as approved by the local permitting authority) and meet the following gradations (Note: all sand complying with ASTM C33 for fine aggregate comply with the gradation requirements listed below):

Particle Size (ASTM D422)	% Passing by Weight
3/8 inch	100%
#4	90-100%
#8	70-100%
#16	40-95%
#30	15-70%
#40	5-55%
#110	0-15%
#200	0-5%

Note: The gradation of the sand component of the biofiltration soil media is believed to be a major factor in the infiltration rate of the media mix. If the desired hydraulic conductivity of the biofiltration soil media cannot be achieved within the specified proportions of sand and compost (#2), then it may be necessary to utilize sand at the coarser end of the range specified minimum percent passing.

- Compost should be a well-decomposed, stable, weed-free organic matter source derived from waste materials including yard debris, wood wastes, or other organic material not including manure or biosolids meeting standards developed by the USCC. The product shall be certified through the USCC STA Program (a compost testing and information disclosure program). Compost quality shall be verified via a laboratory analysis to be:
    - Feedstock materials must be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.
    - pH between 6.5 and 8.0 (may vary with plant palette)
    - Organic Matter: 35 to 75 percent dry weight basis
    - Carbon and Nitrogen Ratio: 15:1 < C:N < 25:1
    - Maturity/Stability: Compost must have a dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120°F) upon delivery or rewetting is not acceptable.
    - Toxicity: any one of the following measures is sufficient to indicate non-toxicity:
        - NH_4:NH_3 < 3
        - Ammonium < 500 ppm, dry weight basis
        - Seed germination > 80 percent of control
        - Plant trials > 80 percent of control
        - Solvita® > 5 index value
    - Nutrient content:
        - Total Nitrogen content ≥ 0.9 percent preferred
        - Total Boron should be < 80 ppm; soluble boron < 2.5 ppm
    - Salinity: < 6.0 mmhos/cm
    - Compost for biofiltration area should be analyzed by an accredited laboratory using #200, ¼-inch, ½-inch, and 1-inch sieves (ASTM D422) and meet the gradation requirements in the table below:

Particle Size (ASTM D422)	% Passing by Weight
1 inch	99-100
½ inch	90-100
¼ inch	40-90
#200	2-10

Tests should be sufficiently recent to represent the actual material that is anticipated to be delivered to the site. If processes or sources used by the supplier have changed significantly since the most recent testing, new tests should be requested.

The gradation of compost used in biofiltration soil media is believed to play an important role in the saturated infiltration rate of the media. To achieve a higher saturated infiltration rate, it may be necessary to utilize compost at the coarser end of the range (minimum percent passing). The percent passing the #200 sieve (fines) is believed to be the most important factor in hydraulic conductivity.

In addition, coarser compost mix provides more heterogeneity of the biofiltration soil media, which is believed to be advantageous for more rapid development of soil structure needed to support healthy biological processes. This may be an advantage for plant establishment with lower nutrient and water input.

- Biofiltration soil media not meeting the above criteria should be evaluated on a case-by-case basis. Alternative biofiltration soil media must meet the following specifications:

  "Soils for biofiltration facilities must be sufficiently permeable to infiltrate stormwater runoff at a minimum of rate of 5 in/hr during the life of the facility, and provide sufficient retention of moisture and nutrients to support healthy vegetation." The following steps shall be followed by LACDPW to verify that alternative biofiltration soil media mixes meet the specification:

  - Submittals – The applicant must submit to LACDPW for approval:
    - A sample of mixed biofiltration soil media.
    - Certification from the soil supplier or an accredited laboratory that the biofiltration soil media meets the requirements of this specification.
    - Certification from an accredited geotechnical testing laboratory that the biofiltration soil media has an infiltration rate between 5 and 12 in/hr.
    - Organic content test results of the biofiltration soil media. Organic content test shall be performed in accordance with the Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, "Loss-On-Ignition Organic Matter Method".
    - Organic grain size analysis results of mixed biofiltration soil media performed in accordance with ASTM D422, Standard Test Method for Particle Size Analysis of Soils.
    - A description of the equipment and methods used to mix the sand and compost to produce the biofiltration soil media.
  - The name of the testing laboratory(ies) and the following information:

- Contact person(s)
- Address(es)
- Phone contact(s)
- E-mail address(es)
- Qualifications of laboratory(ies) and personnel including date of current certification by STA, ASTM, or approved equal.

- Biofiltration soils shall be analyzed by an accredited laboratory using #200 and ½-inch sieves (ASTM D422 or as approved by LACDPW), and meet the gradation described in the table below:

Particle Size (ASTM D422)	% Passing by Weight
½ inch	97-100
#200	2-5

- Biofiltration soil media shall be analyzed by an accredited geotechnical laboratory for the following tests:
  - Moisture – density relationships (compaction tests) must be conducted on biofiltration soil media. Biofiltration soil media for the permeability test shall be compacted to 85 to 90 percent of the maximum dry density (ASTM D1557).
  - Constant head permeability testing in accordance with ASTM D2434 shall be conducted on a minimum of two samples with a 6-inch mold and vacuum saturation.
- Mulch is recommended for the purpose of retaining moisture, preventing erosion, and minimizing weed growth. Projects subject to the California Model Water Efficiency Landscaping Ordinance (or comparable local ordinance) will be required to provide at least 2 inches of mulch. Aged mulch, also called compost mulch, reduces the ability of weeds to establish, keeps soil moist, and replenishes soil nutrients. Biofiltration areas must be covered with two to four inches (average three inches) of mulch at the start and an annual placement (preferably in June after weeding) of one to two inches of mulch beneath plants.
- The planting media design height must be marked appropriately, such as a collar on the overflow device or with a stake inserted two feet into the planting media and notched, to show biofiltration surface level and ponding level.

Vegetation

Prior to installation, a licensed landscape architect must certify that all plants, unless otherwise specifically permitted, conform to the standards of the current edition of American Standard for Nursery Stock as approved by the American Standards Institute, Inc. All plant grades shall be those established in the current edition of American Standards for Nursery Stock.

- Shade trees must have a single main trunk. Trunks must be free of branches below the following heights:

CALIPER (in)	Height (ft)
1½-2½	5
3	6

- Plants must be tolerant of summer drought, ponding fluctuations, and saturated soil conditions for 96 hours.
- It is recommended that a minimum of three types of tree, shrubs, and/or herbaceous groundcover species be incorporated to protect against facility failure due to disease and insect infestations of a single species.
- Native plant species and/or hardy cultivars that are not invasive and do not require chemical inputs must be used to the maximum extent practicable.

The biofiltration area should be vegetated to resemble a terrestrial forest community ecosystem, which is dominated by understory trees, a shrub layer, and herbaceous ground cover. Select vegetation that:

- Is suited to well-drained soil;
- Will be dense and strong enough to stay upright, even in flowing water;
- Has minimum need for fertilizers;
- Is not prone to pests and is consistent with Integrated Pest Management practices; and
- Is consistent with local water conservation ordinance requirements.

Irrigation System

Provide an irrigation system to maintain viability of vegetation, if applicable. The irrigation system must be designed to local code or ordinance specifications.

Restricted Construction Materials

The use of pressure-treated wood or galvanized metal at or around a biofiltration area is prohibited.

Overflow Device

An overflow device is required at the 18-inch ponding depth. The following, or equivalent, should be provided:

- A vertical PVC pipe (SDR 26) to act as an overflow riser.
- The overflow riser(s) should be eight inches or greater in diameter, so it can be cleaned without damage to the pipe.

- The inlet to the riser should be at the ponding depth (18 inches for fenced biofiltration areas and 6 inches for areas that are not fenced), and be capped with a spider cap to exclude floating mulch and debris. Spider caps should be screwed in or glued (e.g., not removable). The overflow device should convey stormwater runoff in excess of 1.5 times the SWQDv that is not reliably retained on the project site to an approved discharge location (another stormwater quality control measure, storm drain system, or receiving water).

Maintenance Requirements

Maintenance and regular inspections are important for proper function of biofiltration areas. Biofiltration areas require annual plant, soil, and mulch layer maintenance to ensure optimal infiltration, storage, and pollutant removal capabilities. In general, biofiltration maintenance requirements are typical landscape care procedures and include:

- Irrigate plants as needed during prolonged dry periods. In general, plants should be selected to be drought-tolerant and not require irrigation after establishment (two to three years).
- Inspect flow entrances, ponding area, and surface overflow areas periodically, and replace soil, plant material, and/or mulch layer in areas if erosion has occurred. Properly-designed facilities with appropriate flow velocities should not cause erosion except potentially during in extreme events. If erosion occurs, the flow velocities and gradients within the biofiltration area and flow dissipation and erosion protection strategies in the pretreatment area and flow entrance should be reassessed. If sediment is deposited in the biofiltration area, identify the source of the sediment within the tributary area, stabilize the source, and remove excess surface deposits.
- Prune and remove dead plant material as needed. Replace all dead plants, and if specific plants have a high mortality rate, assess the cause and, if necessary, replace with more appropriate species.
- Remove weeds as needed until plants are established. Weed removal should become less frequent if the appropriate plant species are used and planting density is attained.
- Select the proper soil mix and plants for optimal fertility, plant establishment, and growth to preclude the use of nutrient and pesticide supplements. By design, biofiltration facilities are located in areas where phosphorous and nitrogen levels are often elevated such that these should not be limiting nutrients. Addition of nutrients and pesticides may contribute pollutant loads to receiving waters.
- In areas where heavy metals deposition is likely (i.e., tributary areas to industrial, vehicle dealerships/repair, parking lots, roads), replace mulch annually. In areas where metals deposition is less likely (i.e., residential lots), replace or add mulch as needed to maintain a two to three inch depth at least once every two years.

- Analyze soil for fertility and pollutant levels if necessary. Biofiltration soil media are designed to maintain long-term fertility and pollutant processing capability.
- Eliminate standing water to prevent vector breeding.
- Inspect overflow devices for obstructions or debris, which should be removed immediately. Repair or replace damaged pipes upon discovery.
- Inspect, and clean if necessary, the underdrain.

A summary of potential problems that need to be addressed by maintenance activities is presented in Table E-13.

The County requires execution of a maintenance agreement to be recorded by the property owner for the on-going maintenance of any privately-maintained stormwater quality control measures. The property owner is responsible for compliance with the maintenance agreement. A sample maintenance agreement is presented in Appendix H.

Table E-13. Biofiltration Troubleshooting Summary

Problem	Conditions When Maintenance Is Needed	Maintenance Required
Vegetation	Overgrown vegetation	Mow and prune vegetation as appropriate.
	Presence of invasive, poisonous, nuisance, or noxious vegetation or weeds	Remove this vegetation and plant native species as needed.
Trash and Debris	Trash, plant litter, and dead leaves present	Remove and properly dispose of trash and debris.
Irrigation (if applicable)	Not functioning correctly	Check irrigation system for clogs or broken lines and repair as needed.
Inlet/Overflow	Inlet/overflow areas clogged with sediment and/or debris	Remove material.
	Overflow pipe blocked or broken	Repair as needed.
Erosion/Sediment Accumulation	Splash pads or spreader incorrectly placed Presence of erosion or sediment accumulation	Check inlet structure to ensure proper function. Repair, or replace if necessary, the inlet device. Repair eroded areas with gravel as needed. Re-grade the biofiltration area as needed.
Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants	Remove any evidence of visual contamination from floatables such as oil and grease.
Standing water	Standing water observed more than 96 hours after storm event	Inspect, and clean as needed, the underdrain to ensure proper function. Clear clogs as needed. Remove and replace planter media (sand, gravel, topsoil, mulch) and vegetation.

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CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.

CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	**4**	**1.2**	**3.0**	**0.9**	**0.9**	**0.7**
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	**5**	**1.3**	**3.5**	**1.1**	**1.3**	**1.0**
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	**6**	**1.8**	**4.0**	**1.2**	**2.1**	**1.6**
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	**6**	**1.8**	**4.6**	**1.4**	**2.1**	**1.6**
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	**8**	**2.4**	**4.6**	**1.4**	**5.6**	**4.3**
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	**8**	**2.4**	**6.2**	**1.9**	**5.6**	**4.3**
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	**10**	**3.0**	**7.7**	**2.3**	**8.7**	**6.7**
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	**10.3**	**3.1**	**8.7**	**6.7**

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

T-6: Proprietary Treatment Control Measures

Definition

The LID Standards Manual provided information for selecting and designing the more common treatment-based stormwater quality control measures for projects. The treatment-based stormwater quality control measures included in this appendix (T-1 to T-5) are non-proprietary (public domain) designs that have been reviewed and evaluated by LACDPW and determined generally acceptable.

Proprietary devices are commercial products that typically aim at providing stormwater treatment in space-limited applications, often using patented innovative technologies. The most commonly encountered classes of proprietary stormwater quality control measures include hydrodynamic separation, catch basin insert technologies, cartridge filter-type controls, and proprietary biotreatment devices.

Hydrodynamic separation devices (alternatively, swirl concentrators) are devices that remove trash, debris, and coarse sediment from incoming flows using screening, gravity settling, and centrifugal forces generated by forcing the influent into a circular motion. By having the water move in a circular fashion, rather than a straight line, it is possible to obtain significant removal of suspended sediments and attached pollutants with less space as compared to wet vaults and other settling devices. Hydrodynamic devices were originally developed for combined sewer overflows, where they were used primarily to remove coarse inorganic solids. Hydrodynamic separation has been adapted for stormwater treatment by several manufacturers and is currently used to remove trash, debris, and other coarse solids down to sand-sized particles. Several types of hydrodynamic separation devices are also designed to remove floating oils and grease using sorbent media.

Catch basin inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris and may include sorbent media to remove floating oils and grease. There are a multitude of inserts of various shapes and configurations, typically falling into one of three groups: socks, boxes, and trays. The sock-type filters are typically constructed of a fabric, usually polypropylene. The fabric may be attached to a frame or the grate of the inlet may hold the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box and the bag takes the form of the box. Most box products are one box; that is, settling and filtration through media occur in the same box. Other products consist of one or more trays or mesh grates. The trays may hold different types of media. Filtration media vary by manufacturer. Types include polypropylene, porous polymer, treated cellulose, and activated carbon. Inserts are an easy and inexpensive retrofitting option because drain inlets are already a component of most standard drainage systems. Inserts are usually only suitable for mitigating relatively small tributary areas (less than one acre) because they are limited by treatment capacity and influent flow rate.

Cartridge filter-type controls typically consist of a series of vertical filters contained in a vault or catch basin that provide treatment through filtration and sedimentation. The vault may be divided into multiple chambers where the first chamber acts as a pre-settling basin for removal of coarse sediment while another chamber acts as the filter bay and houses the filter cartridges. The performance and capacity of a cartridge filter installation depends on the properties of the media contained in the cartridges. Cartridge filter manufacturers often provide an array of media types each with varying properties, targeting various pollutants and a range of particle sizes. Commonly used media include media that target solids, such as perlite, and media that target both dissolved and non-dissolved constituents, such as compost leaf media, zeolite, and iron-infused polymers. Manufacturers try to distinguish their products through innovative designs that aim at providing self cleaning and draining, uniformly loaded, and clog resistant cartridges that functional properly over a wide range of hydraulic loadings and pollutant concentrations.

Proprietary biotreatment devices are devices that are manufactured to mimic natural systems such as wetlands by incorporating plants, soil, and microbes engineered to provide treatment at higher flow rates or higher volumes and with smaller footprints than their natural counterparts. Incoming flows are typically filtered through natural media (mulch, compost, soil, plants, microbes, etc) and either infiltrated or collected by an underdrain and delivered to the storm system. Tributary areas for biotreatment devices tend to be limited to 0.5 to 1.0 acres.

The vendors of the various proprietary stormwater quality control measures provide detailed documentation for device selection, sizing, and maintenance requirements. Tributary area sizes are limited to the capacities of the largest available model. The latest manufacturer supplied documentation must be used for sizing and selection of all proprietary devices. Links to the websites of a number of vendors of proprietary devices are provided at www.BMPLA.org. All proprietary devices proposed for use by a project applicant must be approved by LACDPW.

General Design Specifications

Proprietary stormwater quality control measure vendors are constantly updating and expanding their product lines, so refer to the latest design guidance from the vendors. General guidelines on the performance, sizing, and operation and maintenance of proprietary devices are provided through LACDPW Watershed Division.

Expected Performance

For hydrodynamic devices, it has been stated with respect to combined sewer overflows that the practical lower limit of hydrodynamic separation is a particle with a settling velocity of 12 to 16.5 ft/hr (0.10 to 0.14 cm/s). As such, the focus for hydrodynamic separation in combined sewer overflows has been with settleable solids generally 200 µm and larger, given the presence of the lighter organic solids. For inorganic sediment, the above settling velocity range represents a particle diameter of 50 to 100 µm. Thus, hydrodynamic separation devices are effective for removal of course sediment, trash,

and debris and useful for pretreatment in combination with other types of stormwater quality control measures that target smaller particle sizes.

Because there is a wide range of catch basin insert configurations, it is not possible to generalize the expected performance. Inserts should mainly be used for catching coarse sediments and floatable trash, and are effective for pretreatment in combination with other types of stormwater quality control measures. Trash and large objects can greatly reduce the effectiveness of catch basin inserts with respect to sediment and hydrocarbon capture. Frequent maintenance and the use of screens and grates to keep trash out may decrease the likelihood of clogging and prevent obstruction and bypass of incoming flows.

Cartridge filters have been proven to provide efficient removals for both dissolved and non-dissolved pollutants. However, cartridge filters are less adept at handling high flow rates when compared to catch basin inserts and hydrodynamic devices due to the enhanced treatment provided through the filtration mechanism.

Because proprietary biotreatment devices are relatively new compared to the other types of proprietary treatment devices included in the LID Standards Manual, there are fewer third party studies on proprietary biotreatment devices. The available performance information is mostly vendor-supplied. According to the vendors, like their natural counterparts, proprietary biotreatment devices are highly efficient at mitigating dissolved metals, nutrients, and suspended solids.

Sizing

Hydrodynamic devices, catch basin inserts, and cartridge filters are flow-based stormwater quality control measures, but can be sized to capture and treat the mitigation volume of the SWQDv with additional facilities to manage stormwater runoff flow. Proprietary biotreatment devices on the other hand include both volume-based and flow-based stormwater quality control measures. Volume-based proprietary devices should be sized to capture and treat the mitigation volume of the SWQDv if used as a standalone stormwater quality control measure.

Auxiliary components of proprietary devices such as sorbent media, screens, baffles, and sumps are selected based on site-specific conditions such as the expected loading and the desired frequency of maintenance. Sizing of proprietary devices is reduced to a simple process whereby a model can simply be selected from a table or a chart based on a few known quantities (tributary area, location, design flow rate, design volume, etc). Some manufacturers either size the devices for potential clients or offer calculators on their websites that simplify the design process even further and lessens the possibility of using obsolete design information. For the latest sizing guidelines, refer to the manufacturer's website.

Operation and Maintenance

Hydrodynamic Separation Devices

Hydrodynamic separators do not have moving parts and are not maintenance intensive. However, maintenance is important to ensure that the device operates as efficiently as possible. Proper maintenance involves frequent inspections throughout the first year of installation, especially after major storm events. The systems are considered full when the sediment level is within one foot from the top of the unit, at which point it must be cleaned out. Removal of sediment can be performed with a sump vacuum or vactor truck. Some hydrodynamic separator devices may contribute to mosquito breeding if they do not fully drain stormwater runoff between storm events. Refer to manufacturer's guidelines for inspection and maintenance activities.

Catch Basin Inserts

Catch basin inserts can be maintenance-intensive because of their susceptibility for accumulating trash and debris. Regular maintenance activities include the clean-up and removal of accumulated trash and sediment while major maintenance activities include replacing filter media (if used) and or repairing/replacing geomembrane fabrics. Refer to manufacturer's guidelines for inspection and maintenance activities.

Cartridge Filters

For cartridge filters, maintenance activities include periodically removing trash, debris, and sediment from the vault floor, typically twice per year depending on the accumulation rate, using a sump vacuum or vactor truck. The cartridges may need to be replaced when they become saturated, which will occur approximately every other year depending on the pollutant accumulation rate. The manufacturers of these devices typically provide contract operation and maintenance services.

All stormwater vaults that contain standing water can become a breeding area for vectors. Manufacturers have developed systems, such as a perforated pipe installed in the bottom of the vault that is encased in a filter sock to prevent clogging, to completely drain the vault.

Biotreatment Devices

Maintenance of biotreatment devices can be provided by the manufacturer and typically consists of routine inspection and hand removal of accumulated trash and debris. Vactor trucks or mechanical maintenance activities are not needed for biotreatment devices.

Filterra Owner's Manual

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filterra®
Bioretention Systems

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Enclosed

Local Area Filterra Plant List

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Introduction

Thank you for your purchase of the Filterra® Bioretention System. Filterra is a specially engineered stormwater treatment system incorporating high performance biofiltration media to remove pollutants from stormwater runoff. The system's biota (vegetation and soil microorganisms) then further breakdown and absorb captured pollutants. All components of the system work together to provide a sustainable long-term solution for treating stormwater runoff.

The Filterra system has been delivered to you with protection in place to resist intrusion of construction related sediment which can contaminate the biofiltration media and result in inadequate system performance. These protection devices are intended as a best practice and cannot fully prevent contamination. It is the purchaser's responsibility to provide adequate measures to prevent construction related runoff from entering the Filterra system.

Included with your purchase is Activation of the Filterra system by the manufacturer as well as a 1-year warranty from delivery of the system and 1-year of routine maintenance (mulch replacement, debris removal, and pruning of vegetation) up to twice during the first year after activation.

Design and Installation

Each project presents different scopes for the use of Filterra systems. Information and help may be provided to the design engineer during the planning process. Correct Filterra box sizing (by rainfall region) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Filterra units as shown in approved plans. A comprehensive installation manual is available at www.ContechES.com.

Activation Overview

Activation of the Filterra system is a procedure completed by the manufacturer to place the system into working condition. This involves the following items:

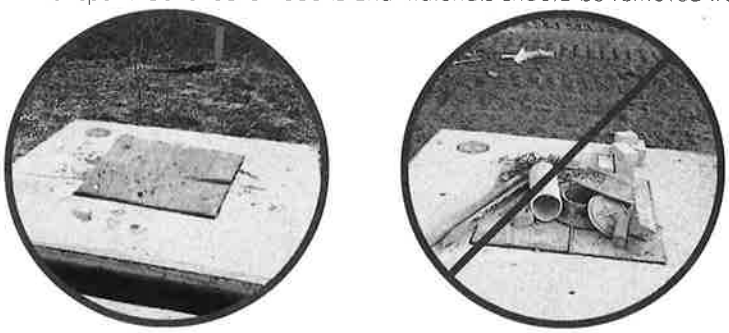
- Removal of construction runoff protection devices
- Planting of the system's vegetation
- Placement of pretreatment mulch layer using mulch certified for use in Filterra systems.

Activation MUST be provided by the manufacturer to ensure proper site conditions are met for Activation, proper installation of the vegetation, and use of pretreatment mulch certified for use in Filterra systems.

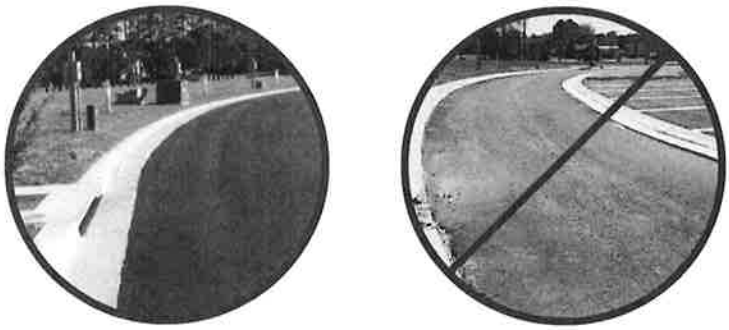
Minimum Requirements

The minimum requirements for Filterra Activation are as follows:

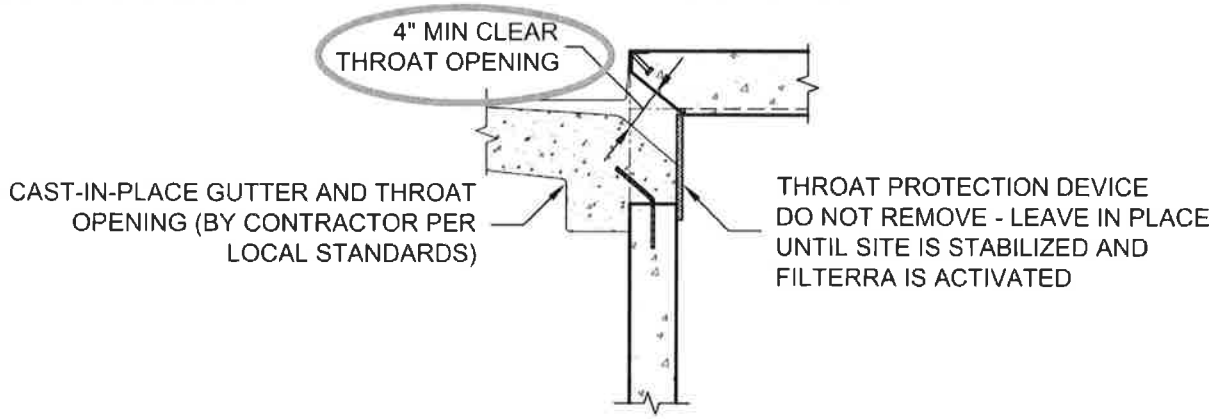
1. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.



2. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Filterra system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Filterra system.



3. Filterra throat opening should be at least 4" in order to ensure adequate capacity for inflow and debris.



An Activation Checklist is included on page 12 to ensure proper conditions are met for Contech to perform the Activation services. A charge of $500.00 will be invoiced for each Activation visit requested by Customer where Contech determines that the site does not meet the conditions required for Activation.

Filterra Plant Selection Overview

A Plant List has been enclosed with this packet highlighting recommended plants for Filterra systems in your area. Keep in mind that plants are subject to availability due to seasonality and required minimum size for the Filterra system. Plants installed in the Filterra system are container plants (max 15 gallon) from nursery stock and will be immature in height and spread at Activation.

It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Filterra system.

The "Planting Requirements for Filterra Systems" document is included as an appendix and discusses proper selection and care of the plants within Filterra systems.

Warranty Overview

Refer to the Contech Engineered Solutions LLC Stormwater Treatment System LIMITED WARRANTY for further information. The following conditions may void the Filterra system's warranty and waive the manufacturer provided Activation and Maintenance services:

- Unauthorized activation or performance of any of the items listed in the activation overview
- Any tampering, modifications or damage to the Filterra system or runoff protection devices
- Removal of any Filterra system components
- Failure to prevent construction related runoff from entering the Filterra system
- Failure to properly store and protect any Filterra components (including media and underdrain stone) that may be shipped separately from the vault

Routine Maintenance Guidelines

With proper routine maintenance, the biofiltration media within the Filterra system should last as long as traditional bioretention media. Routine maintenance is included by the manufacturer on all Filterra systems for the first year after activation. This includes a maximum of 2 visits to remove debris, replace pretreatment mulch, and prune the vegetation. More information is provided in the Operations and Maintenance Guidelines. Some Filterra systems also contain pretreatment or outlet bays. Depending on site pollutant loading, these bays may require periodic removal of debris, however this is not included in the first year of maintenance, and would likely not be required within the first year of operation.

These services, as well as routine maintenance outside of the included first year, can be provided by certified maintenance providers listed on the Contech website. Training can also be provided to other stormwater maintenance or landscape providers.

Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement. Other reasons to maintain are:

- Avoiding legal challenges from your jurisdiction's maintenance enforcement program.
- Prolonging the expected lifespan of your Filterra media.
- Avoiding more costly media replacement.
- Helping reduce pollutant loads leaving your property.

Simple maintenance of the Filterra is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The unit will recycle and accumulate pollutants within the biomass, but is also subjected to other materials entering the inlet. This may include trash, silt and leaves etc. which will be contained above the mulch layer. Too much silt may inhibit the Filterra's flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

When to Maintain?

Contech includes a 1-year maintenance plan with each system purchase. Annual included maintenance consists of a maximum of two (2) scheduled visits. Additional maintenance may be necessary depending on sediment and trash loading (by Owner or at additional cost). The start of the maintenance plan begins when the system is activated.

Maintenance visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required; regions with less rainfall often only require (1) one visit per annum. Varying land uses can affect maintenance frequency; e.g. some fast food restaurants require more frequent trash removal. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Supplier and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the (maintenance) Supplier of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology. Owners should also advise other landscape or maintenance contractors to leave all maintenance to the Supplier (i.e. no pruning or fertilizing) during the first year.

Exclusion of Services

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not covered under the Supplier maintenance contract. Should a major contamination event occur the Owner must block off the outlet pipe of the Filterra (where the cleaned runoff drains to, such as drop inlet) and block off the throat of the Filterra. The Supplier should be informed immediately.

Maintenance Visit Summary

Each maintenance visit consists of the following simple tasks (detailed instructions below).

1. Inspection of Filterra and surrounding area
2. Removal of tree grate and erosion control stones
3. Removal of debris, trash and mulch
4. Mulch replacement
5. Plant health evaluation and pruning or replacement as necessary
6. Clean area around Filterra
7. Complete paperwork

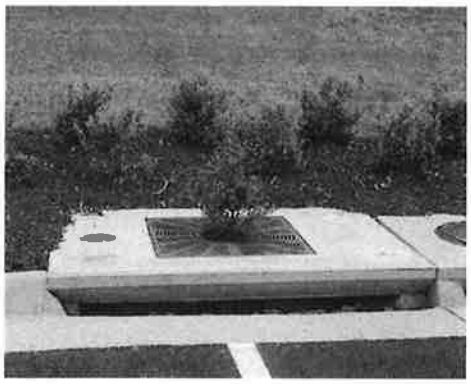
Maintenance Tools, Safety Equipment and Supplies

Ideal tools include: camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing and barricades when working in close proximity to traffic and also safety hats and shoes. A T-Bar or crowbar should be used for moving the tree grates (up to 170 lbs ea.). Most visits require minor trash removal and a full replacement of mulch. See below for actual number of bagged mulch that is required in each media bay size. Mulch should be a double shredded, hardwood variety. Some visits may require additional Filterra engineered soil media available from the Supplier.

Box Length	Box Width	Filter Surface Area (ft^2)	Volume at 3" (ft^3)	# of 2 ft^3 Mulch Bags
4	4	4	4	2
6	4	6	6	3
8	4	8	8	4
6	6	9	9	5
8	6	12	12	6
10	6	15	15	8
12	6	18	18	9
13	7	23	23	12

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.



1. Inspection of Filterra and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:

Standing Water	yes | no
Damage to Box Structure	yes | no
Damage to Grate	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).

2. Removal of tree grate and erosion control stones

- Remove cast iron grates for access into Filterra box.
- Dig out silt (if any) and mulch and remove trash & foreign items.

3. Removal of debris, trash and mulch

Record on Maintenance Report the following:

Silt/Clay	yes | no
Cups/ Bags	yes | no
Leaves	yes | no
Buckets Removed	_____

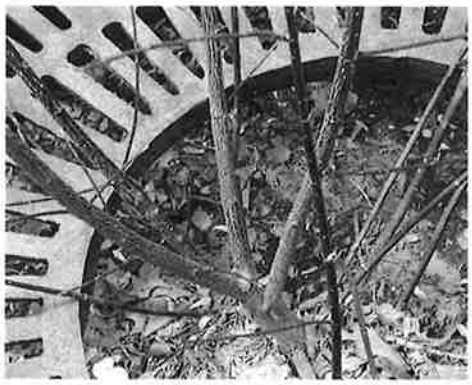
- After removal of mulch and debris, measure distance from the top of the Filterra engineered media soil to the top of the top slab. Compare the measured distance to the distance shown on the approved Contract Drawings for the system. Add Filterra media (not top soil or other) to bring media up as needed to distance indicated on drawings.

Record on Maintenance Report the following:

Distance to Top of Top Slab (inches)	_____
Inches of Media Added	_____

4. Mulch replacement

- Add double shredded mulch evenly across the entire unit to a depth of 3".
- Refer to Filterra Mulch Specifications for information on acceptable sources.
- Ensure correct repositioning of erosion control stones by the Filterra inlet to allow for entry of trash during a storm event.
- Replace Filterra grates correctly using appropriate lifting or moving tools, taking care not to damage the plant.



5. Plant health evaluation and pruning or replacement as necessary

- Examine the plant's health and replace if necessary.
- Prune as necessary to encourage growth in the correct directions

Record on Maintenance Report the following:

Height above Grate	_____ (ft)
Width at Widest Point	_____ (ft)
Health	healthy | unhealthy
Damage to Plant	yes | no
Plant Replaced	yes | no

6. Clean area around Filterra

- Clean area around unit and remove all refuse to be disposed of appropriately.

7. Complete paperwork

- Deliver Maintenance Report and photographs to appropriate location (normally Contech during maintenance contract period).
- Some jurisdictions may require submission of maintenance reports in accordance with approvals. It is the responsibility of the Owner to comply with local regulations.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Filterra.	Inlet should be free of obstructions allowing free distributed flow of water into Filterra.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation	Plant growth excessive.	Plants should be appropriate to the species and location of Filterra.		Trim/prune plants in accordance with typical landscaping and safety needs.
Structure	Structure has visible cracks.	Cracks wider than 1/2 inch or evidence of soil particles entering the structure through the cracks.		Vault should be repaired.
Maintenance is ideally to be performed twice annually.				

Filterra Inspection & Maintenance Log

Filterra System Size/Model:_____ **Location:** _____

Date	Mulch & Debris Removed	Depth of Mulch Added	Mulch Brand	Height of Vegetation Above Grate	Vegetation Species	Issues with System	Comments
1/1/17	*5 – 5 gal Buckets*	*3"*	*Lowe's Premium Brown Mulch*	*4'*	*Galaxy Magnolia*	*- Standing water in downstream structure*	*- Removed blockage in downstream structure*

Appendix 1 – Filterra® Activation Checklist

CONTECH® ENGINEERED SOLUTIONS

Project Name: _____ Company: _____

Site Contact Name: _____ Site Contact Phone/Email: _____

Site Owner/End User Name: _____ Site Owner/End User Phone/Email: _____

Preferred Activation Date: _____ (provide 2 weeks minimum from date this form is submitted)

Site Designation	System Size	Final Pavement / Top Coat Complete	Landscaping Complete / Grass Emerging	Construction materials / Piles / Debris Removed	Throat Opening Measures 4" Min. Height	Plant Species Requested
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	

Attach additional sheets as necessary.

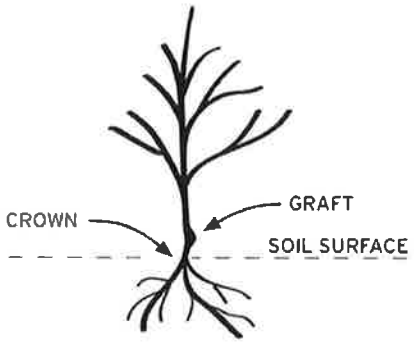
NOTE: A charge of $500.00 will be invoiced for each Activation visit requested by Customer where Contech determines that the site does not meet the conditions required for Activation. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized Activations will void the system warranty and waive manufacturer supplied Activation and 1st Year Maintenance.

_____ _____

Signature Date

Appendix 2 – Planting Requirements for Filterra® Systems

Plant Material Selection



- Select plant(s) as specified in the engineering plans and specifications.
- Select plant(s) with full root development but not to the point where root bound.
- Use local nursery container plants only. Ball and burlapped plants are not permitted.
- For precast Filterra systems with a tree grate, plant(s) must not have scaffold limbs at least 14 inches from the crown due to spacing between the top of the mulch and the tree grate. Lower branches can be pruned away provided there are sufficient scaffold branches for tree or shrub development.
- For precast Filterra systems with a tree grate, at the time of installation, it is required that plant(s) must be at least 6" above the tree grate opening at installation for all Filterra configurations. This DOES NOT apply to Full Grate Cover designs.
- Plant(s) shall not have a mature height greater than 25 feet.
- For standard 21" media depth, a 7 – 15 gallon container size shall be used. Media less than 21" (Filterra boxes only) will require smaller container plants.
- For precast Filterra systems, plant(s) should have a single trunk at installation, and pruning may be necessary at activation and maintenance for some of the faster growing species, or species known to produce basal sprouts.

Plant Installation

- During transport protect the plant leaves from wind and excessive jostling.
- Prior to removing the plant(s) from the container, ensure the soil moisture is sufficient to maintain the integrity of the root ball. If needed, pre-wet the container plant.
- Cut away any roots which are growing out of the container drain holes. Plants with excessive root growth from the drain holes should be rejected.
- Plant(s) should be carefully removed from the pot by gently pounding on the sides of the container with the fist to loosen root ball. Then carefully slide out. Do not lift plant(s) by trunk as this can break roots and cause soil to fall off. Extract the root ball in a horizontal position and support it to prevent it from breaking apart. Alternatively the pot can be cut away to minimize root ball disturbance.
- Remove any excess soil from above the root flare after removing plant(s) from container.
- Excavate a hole with a diameter 4" greater than the root ball, gently place the plant(s).
- If plant(s) have any circling roots from being pot bound, gently tease them loose without breaking them.
- If root ball has a root mat on the bottom, it should be shaved off with a knife just above the mat line.
- Plant the tree/shrub/grass with the top of the root ball 1" above surrounding media to allow for settling.
- All plants should have the main stem centered in the tree grate (where applicable) upon completion of installation.
- With all trees/shrubs, remove dead, diseased, crossed/rubbing, sharply crotched branches or branches growing excessively long or in wrong direction compared to majority of branches.
- To prevent transplant shock (especially if planting takes place in the hot season), it may be necessary to prune some of the foliage to compensate for reduced root uptake capacity. This is accomplished by pruning away some of the smaller secondary branches or a main scaffold branch if there are too many. Too much foliage relative to the root ball can dehydrate and damage the plant.
- Plant staking may be required.

Mulch Installation

- Only mulch that has been meeting Contech Engineered Solutions' mulch specifications can be used in the Filterra system.
- Mulch must be applied to a depth of 3" evenly over the surface of the media.

Irrigation Requirements

- Each Filterra system must receive adequate irrigation to ensure survival of the living system during periods of drier weather.
- Irrigation sources include rainfall runoff from downspouts and/or gutter flow, applied water through the tree grate or in some cases from an irrigation system with emitters installed during construction.
- At Activation: Apply about one (cool climates) to two (warm climates) gallons of water per inch of trunk diameter over the root ball.
- During Establishment: In common with all plants, each Filterra plant will require more frequent watering during the establishment period. One inch of applied water per week for the first three months is recommended for cooler climates (2 to 3 inches for warmer climates). If the system is receiving rainfall runoff from the drainage area, then irrigation may not be needed. Inspection of the soil moisture content can be evaluated by gently brushing aside the mulch layer and feeling the soil. Be sure to replace the mulch when the assessment is complete. Irrigate as needed**.
- Established Plants: Established plants have fully developed root systems and can access the entire water column in the media. Therefore irrigation is less frequent but requires more applied water when performed. For a mature system assume 3.5 inches of available water within the media matrix. Irrigation demand can be estimated as 1" of irrigation demand per week. Therefore if dry periods exceed 3 weeks, irrigation may be required. It is also important to recognize that plants which are exposed to windy areas and reflected heat from paved surfaces may need more frequent irrigation. Long term care should develop a history which is more site specific.

** Five gallons per square yard approximates 1 inch of water Therefore for a 6' by 6' Filterra approximately 20-60 gallons of water is needed. To ensure even distribution of water it needs to be evenly sprinkled over the entire surface of the filter bed, with special attention to make sure the root ball is completely wetted. NOTE: if needed, measure the time it takes to fill a five gallon bucket to estimate the applied water flow rate then calculate the time needed to irrigate the Filterra. For example, if the flow rate of the sprinkler is 5 gallons/minute then it would take 12 minutes to irrigate a 6' by 6' filter.

Notes

9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
info@conteches.com | 800-338-1122
www.ContechES.com

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Appendix G

CATCH BASIN STENCILING

Appendix H

Table 2-1 Anticipated and Potential Pollutants Generated by Land Use Type

Priority Project Categories	General Pollutant Categories								
	Pathogens	Heavy Metals	Nutrients	Pesticides	Organic Compounds	Sediments	Trash & Debris	Oxygen Demanding Substances	Oil & Grease
Detached Residential Development	X		X	X		X	X	X	X
Attached Residential Development	P		X	X		X	X	P(1)	P(2)
Commercial/ Industrial Development >100,000 ft2	P(3)		P(1)	P(5)	P(2)	P(1)	X	P(5)	X
Automotive Repair Shops		X			X(4)(5)		X		X
Restaurants	X						X	X	X
Hillside Development >5,000 ft2 In SDRWQCB			X	X		X	X	X	X
Hillside Development >100,000 ft2 In SARWQCB			X	X		X	X	X	X
Parking Lots		X	P(1)	P(2)		P(1)	X	Ps	X
Streets, Highways & Freeways		X	P(1)		X(4)	X	X	P(5)	X

X = anticipated

P = potential

(1) A potential pollutant if landscaping exists on-site

(2) A potential pollutant if the project includes uncovered parking areas

(3) A potential pollutant if land use involves food or animal waste products.

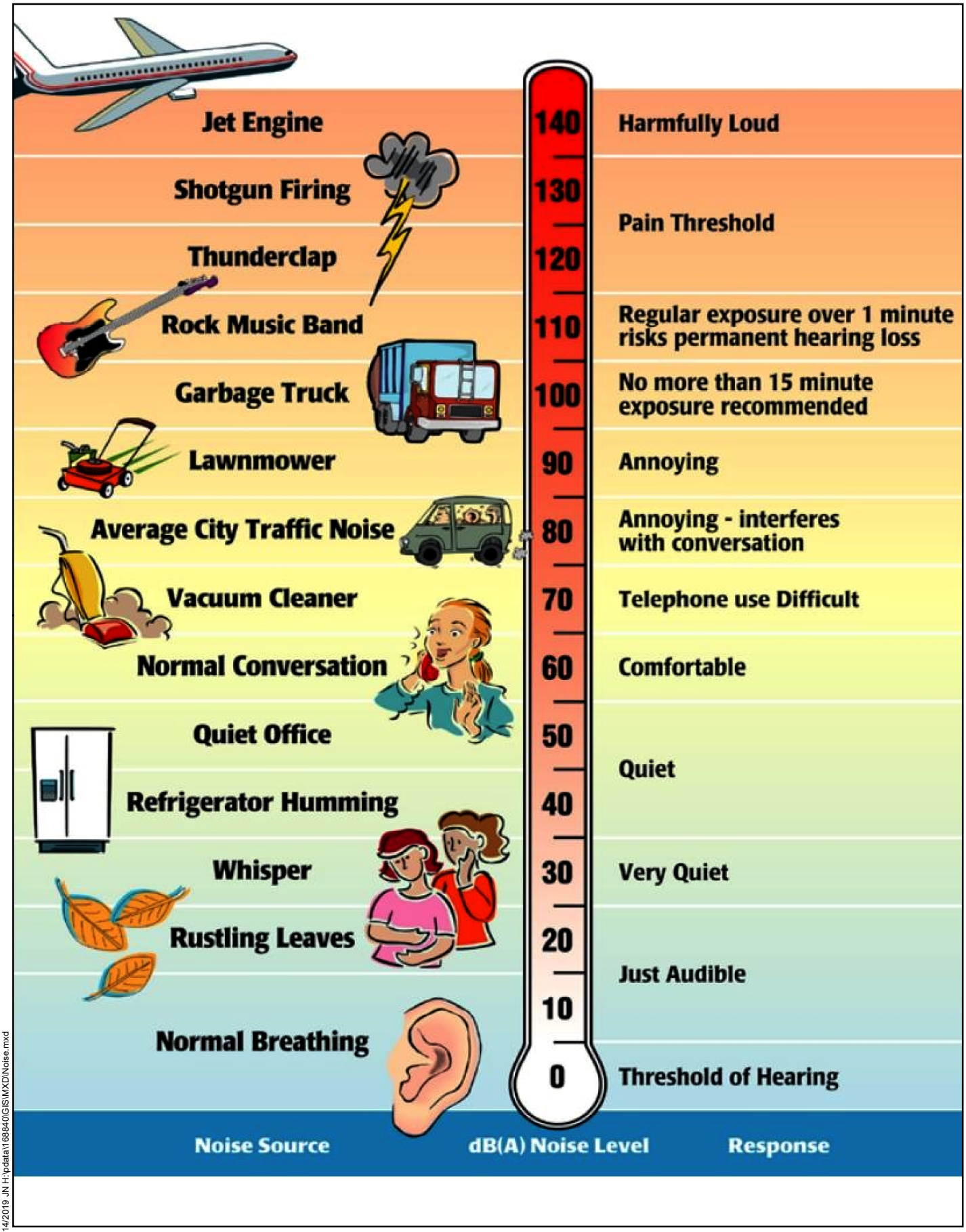
(4) Including petroleum hydrocarbons.

(5) Including solvents.

Appendix G

Appendix H:
Noise Monitoring Data and Modeling Worksheets

Part 1: Common Environmental Noise Levels



6/14/2019 JN H:\pdata\168840\GIS\MXD\Noise.mxd

BOUQUET CANYON PROJECT
ENVIRONMENTAL IMPACT REPORT

Michael Baker INTERNATIONAL

NOT TO SCALE

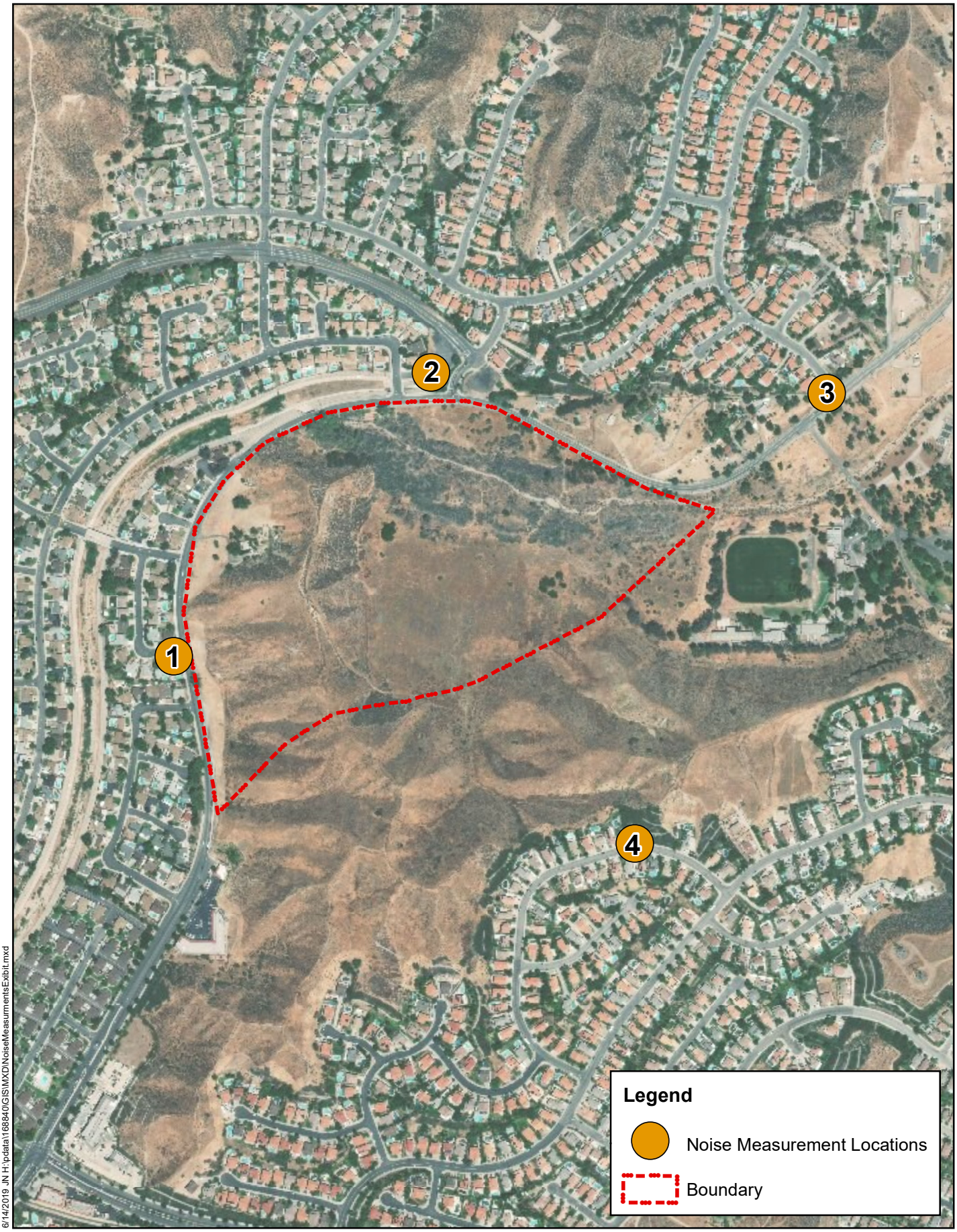
Common Environmental Noise Levels

SOURCE: ENVIRONMENTAL PROTECTION AGENCY, INFORMATION ON LEVELS OF ENVIRONMENTAL NOISE REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY (EPA/ONAC 550/9-74-004), MARCH 1974

Exhibit 3.13-1

Appendix H:
Noise Monitoring Data and Modeling Worksheets

Part 2: Noise Measurement Locations



6/14/2019 JN H:\pdata\168840\GIS\MXD\NoiseMeasurmentsExhibit.mxd

Michael Baker INTERNATIONAL

0 300 600 Feet

Source: esri basemap

BOUQUET CANYON PROJECT
ENVIRONMENTAL IMPACT REPORT

Noise Measurement Locations

Exhibit 3.13-2

Appendix H:
Noise Monitoring Data and Modeling Worksheets

Part 3: Noise Worksheets

Site Number: Bouquet Canyon Site #1			
Recorded By: Pierre Glaize			
Job Number: 168840			
Date: 05/22/2019			
Time: 10:10 a.m.			
Location: Corner of Bouquet Canyon Road and Sue Drive.			
Source of Peak Noise: Traffic along Bouquet Canyon Road.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
72.4	38.3	90.1	113.0

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**04/08/2019**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**04/08/2019**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**04/08/2019**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**04/08/2019**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	2 mph	61°	29.73

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.7.4
Start Time:		05/22/2019 10:10:44
End Time:		05/22/2019 10:20:44
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.09

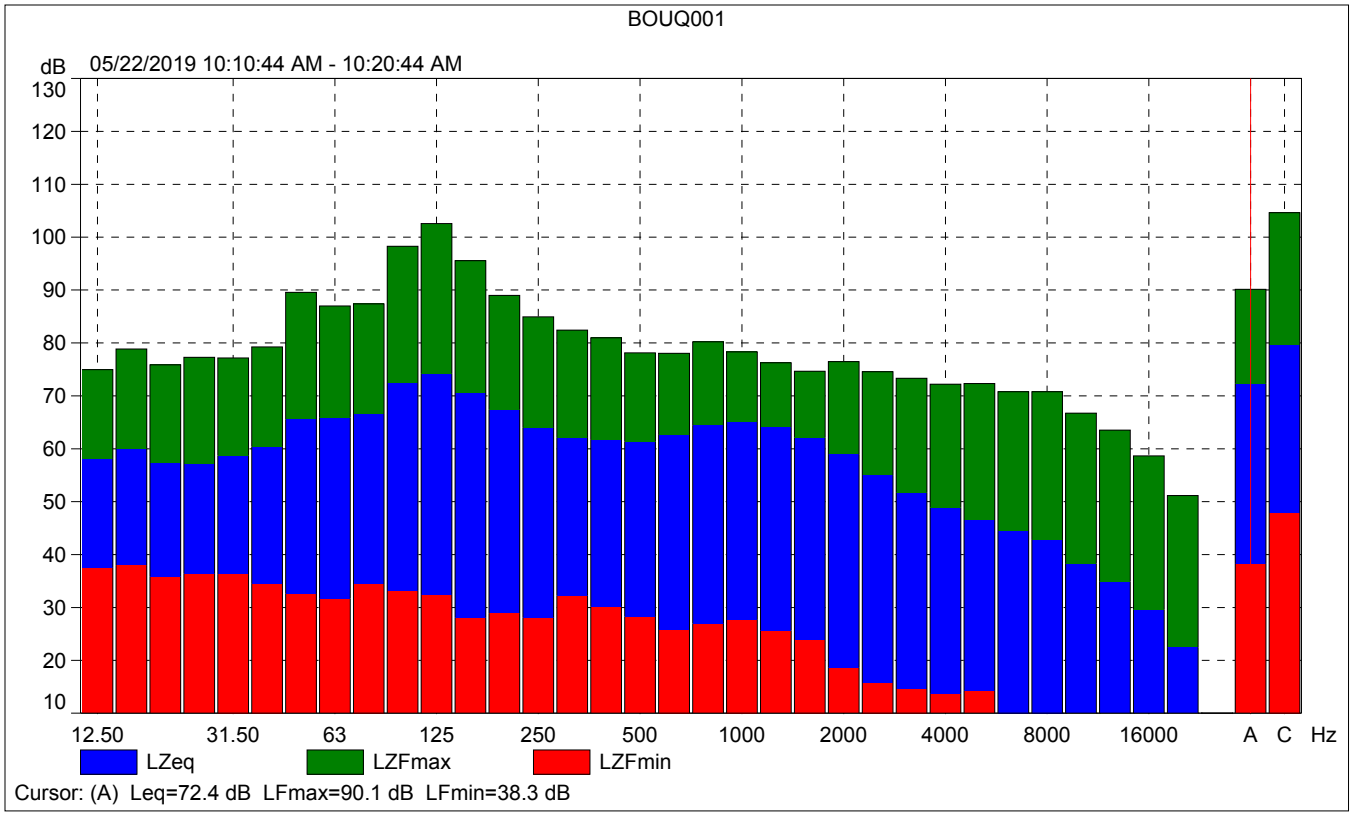
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

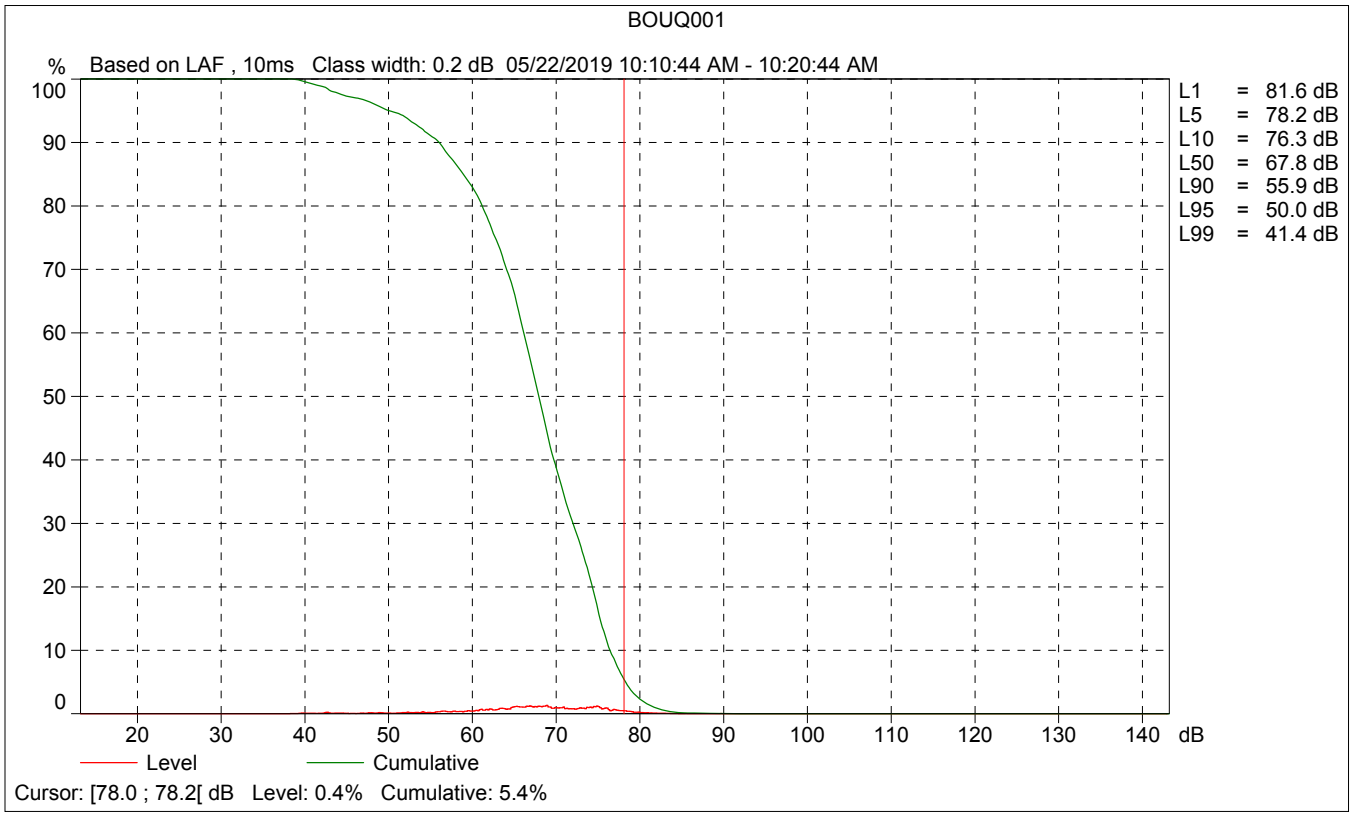
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

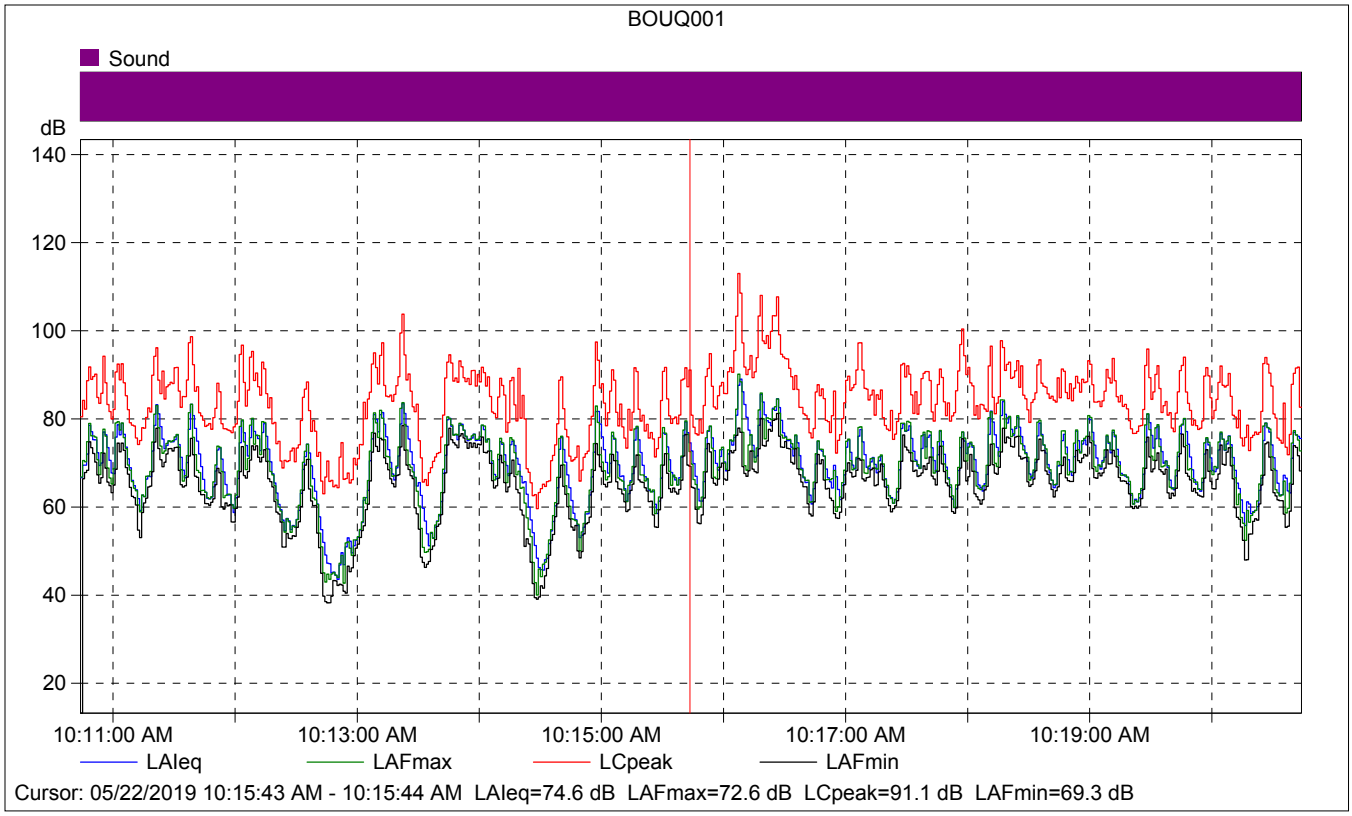
Calibration Time:		05/22/2019 07:24:19
Calibration Type:		External reference
Sensitivity:		43.775387108326 mV/Pa

BOUQ001

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	72.4	90.1	38.3
Time	10:10:44 AM	10:20:44 AM	0:10:00				
Date	05/22/2019	05/22/2019					

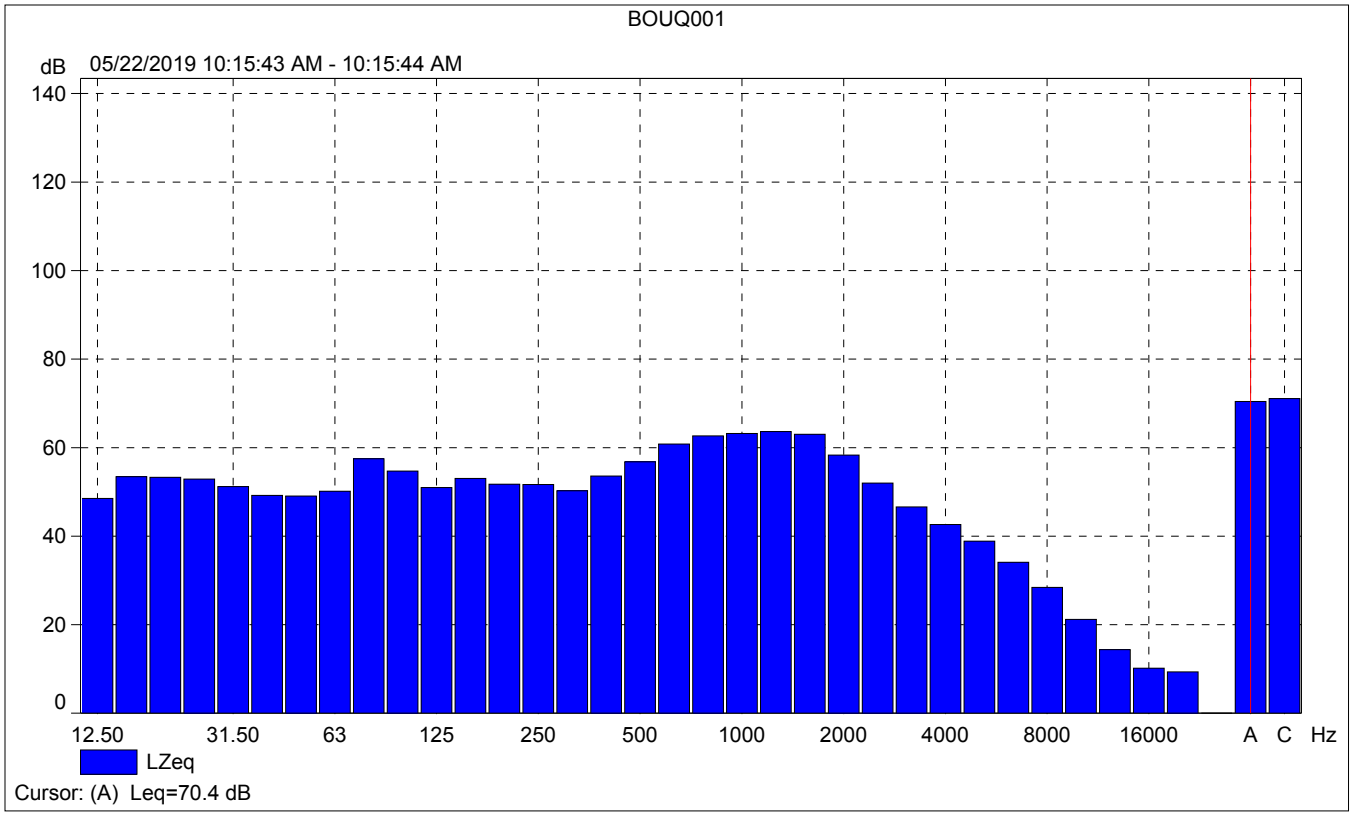

BOUQ001
dB
05/22/2019 10:10:44 AM - 10:20:44 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=72.4 dB LFmax=90.1 dB LFmin=38.3 dB

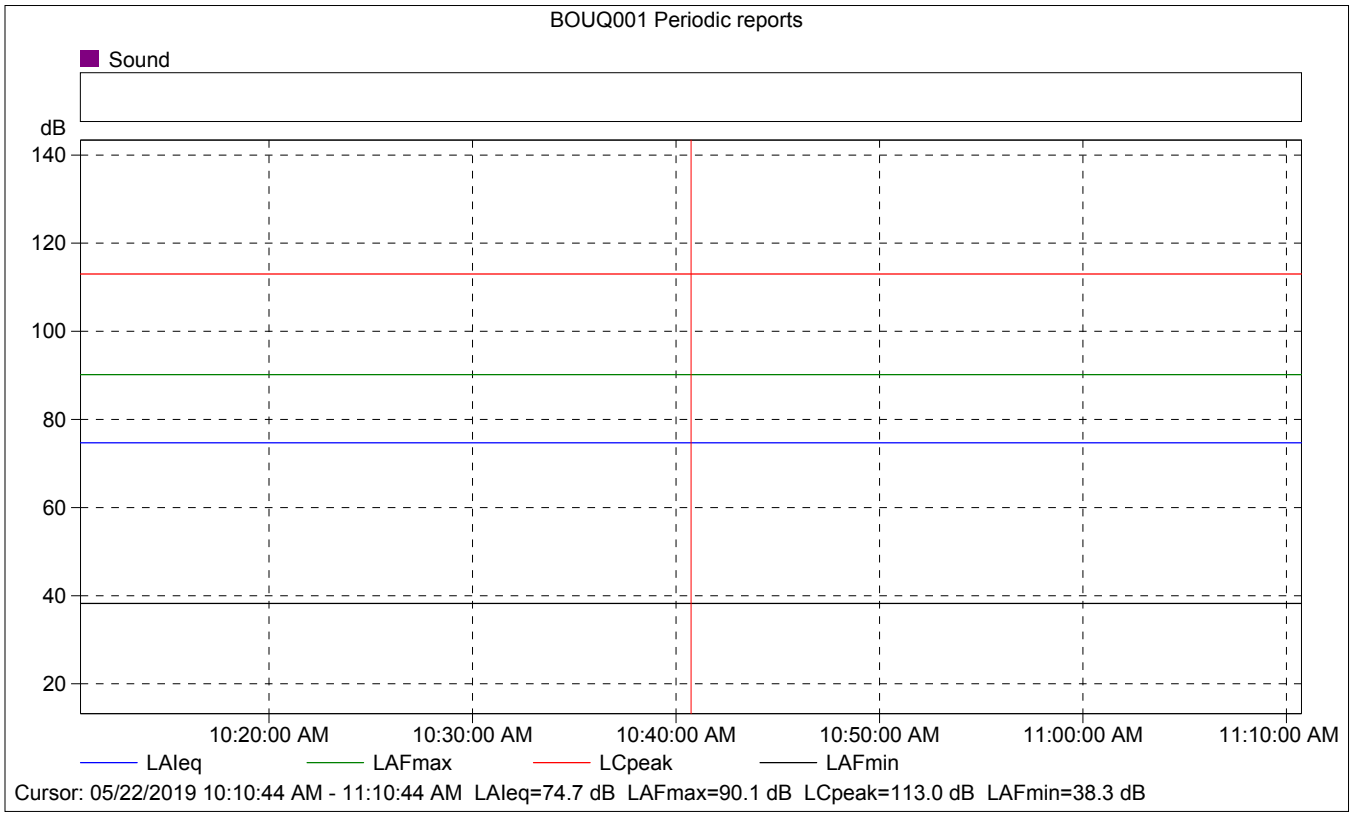

BOUQ001
%
Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 10:10:44 AM - 10:20:44 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 81.6 dB
L5 = 78.2 dB
L10 = 76.3 dB
L50 = 67.8 dB
L90 = 55.9 dB
L95 = 50.0 dB
L99 = 41.4 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.4% Cumulative: 5.4%



BOUQ001

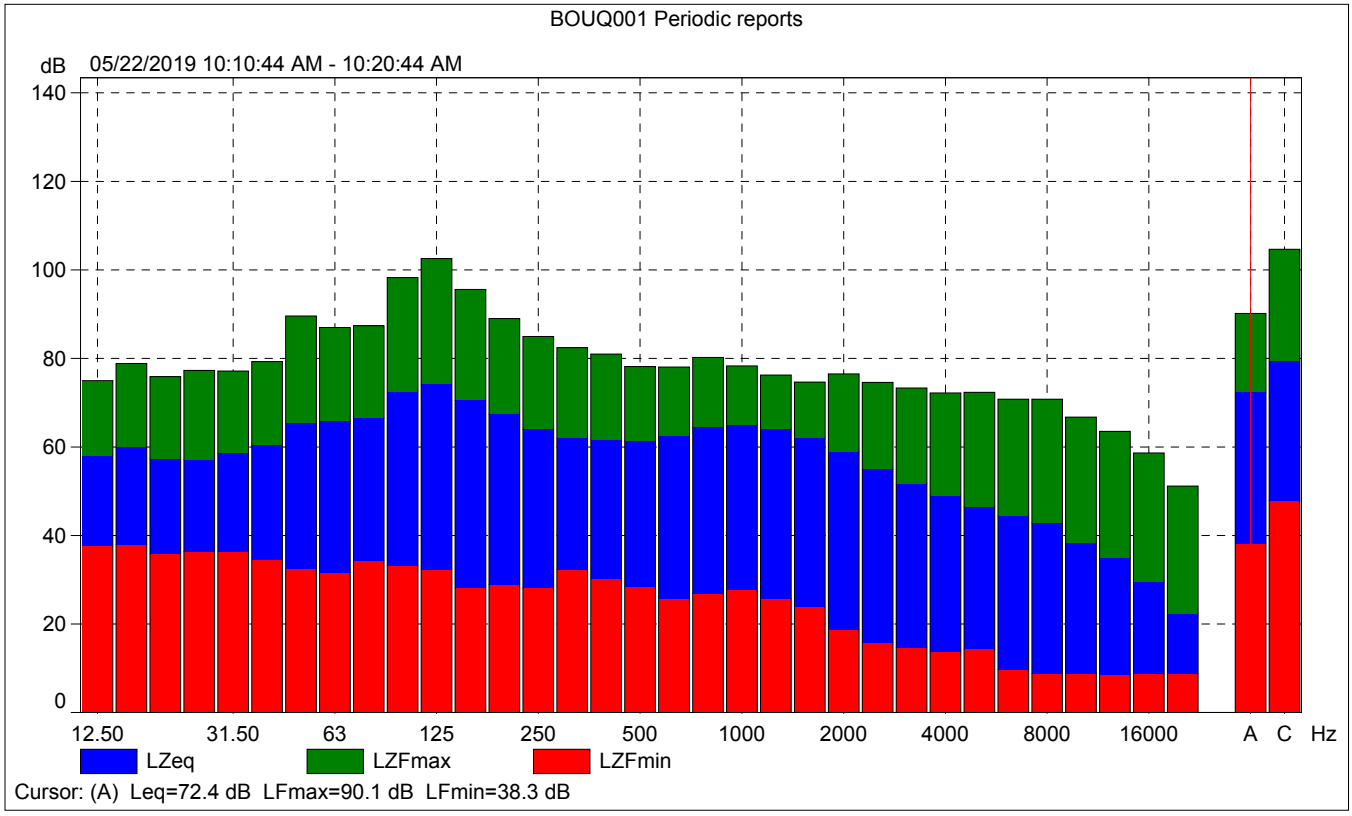
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			74.6	72.6	69.3
Time	10:15:43 AM	0:00:01			
Date	05/22/2019				

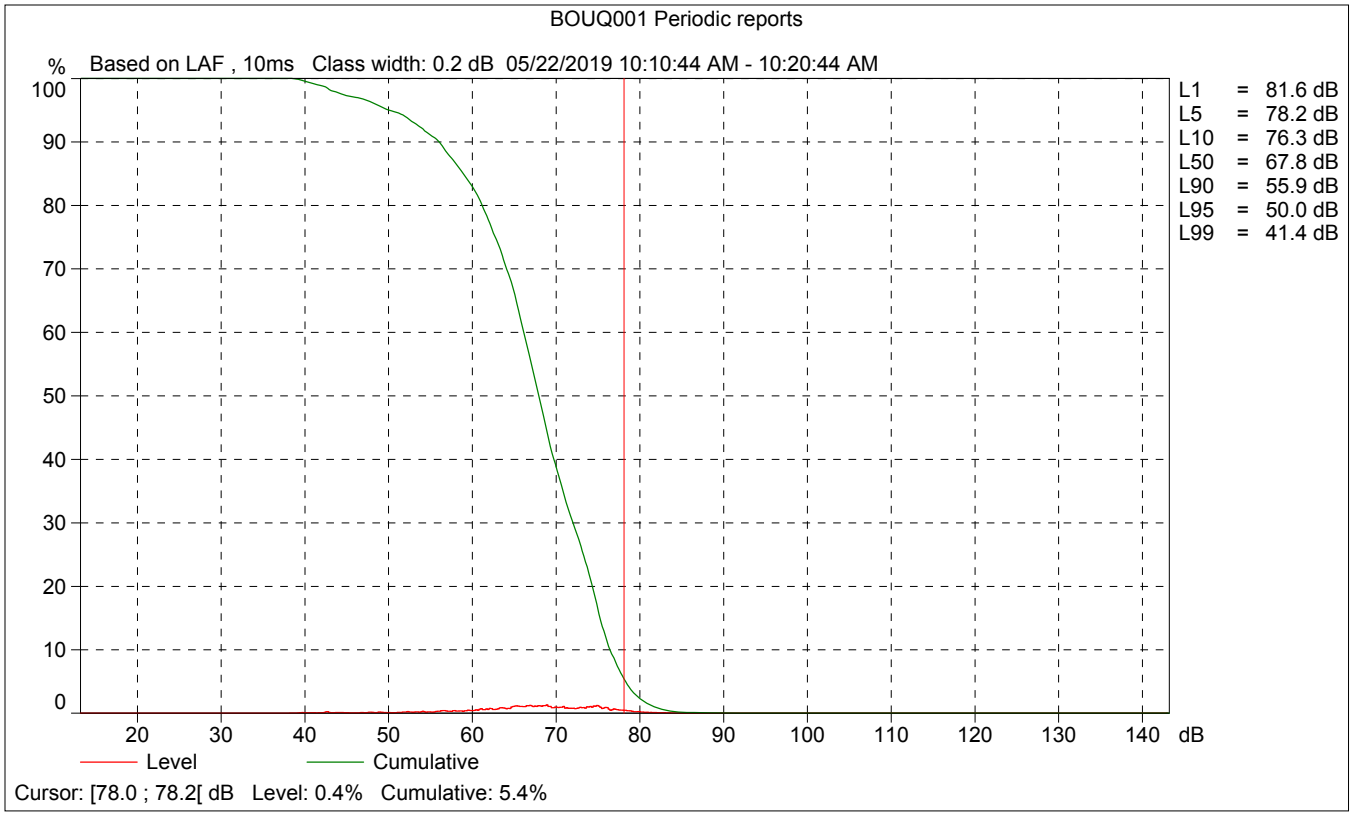

BOUQ001
dB
05/22/2019 10:15:43 AM - 10:15:44 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=70.4 dB


BOUQ001 Periodic reports
Sound
dB
140
120
100
80
60
40
20
10:20:00 AM
10:30:00 AM
10:40:00 AM
10:50:00 AM
11:00:00 AM
11:10:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/22/2019 10:10:44 AM - 11:10:44 AM LAIeq=74.7 dB LAFmax=90.1 dB LCpeak=113.0 dB LAFmin=38.3 dB

BOUQ001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	74.7	90.1	38.3
Time	10:10:44 AM	0:10:00				
Date	05/22/2019					




BOUQ001 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 10:10:44 AM - 10:20:44 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 81.6 dB
L5 = 78.2 dB
L10 = 76.3 dB
L50 = 67.8 dB
L90 = 55.9 dB
L95 = 50.0 dB
L99 = 41.4 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.4% Cumulative: 5.4%

Site Number: Bouquet Canyon Site #2			
Recorded By: Pierre Glaize			
Job Number: 168840			
Date: 05/22/20199			
Time: 10:25 a.m.			
Location: At the end of Pin Court, in a dirt staging lot.			
Source of Peak Noise: Traffic along Bouquet Canyon Road and Copper Hill Drive.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
56.1	40.8	68.6	87.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**04/08/2019**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**04/08/2019**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**04/08/2019**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**04/08/2019**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	5 mph	61°	29.73

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.7.4
Start Time:		05/22/2019 10:26:10
End Time:		05/22/2019 10:36:10
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.09

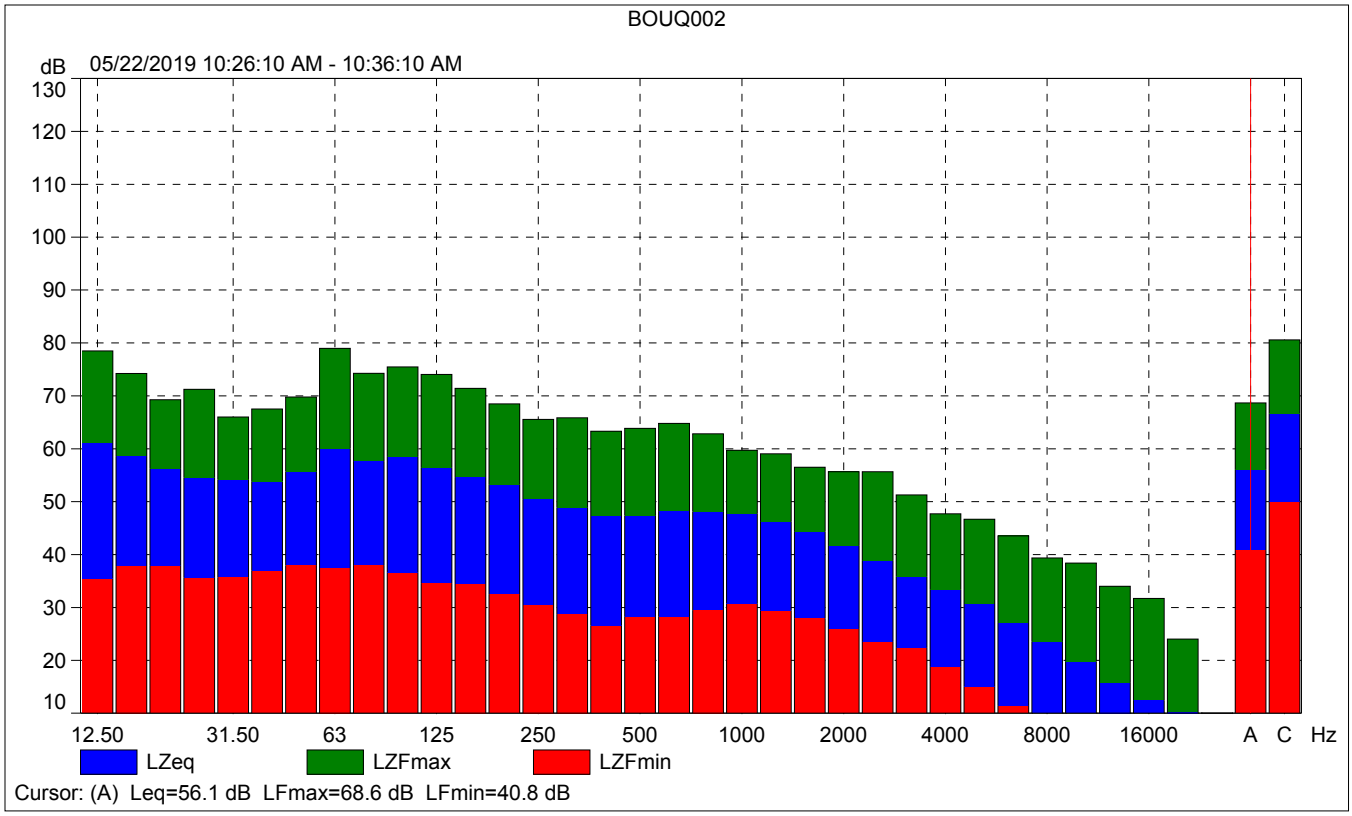
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

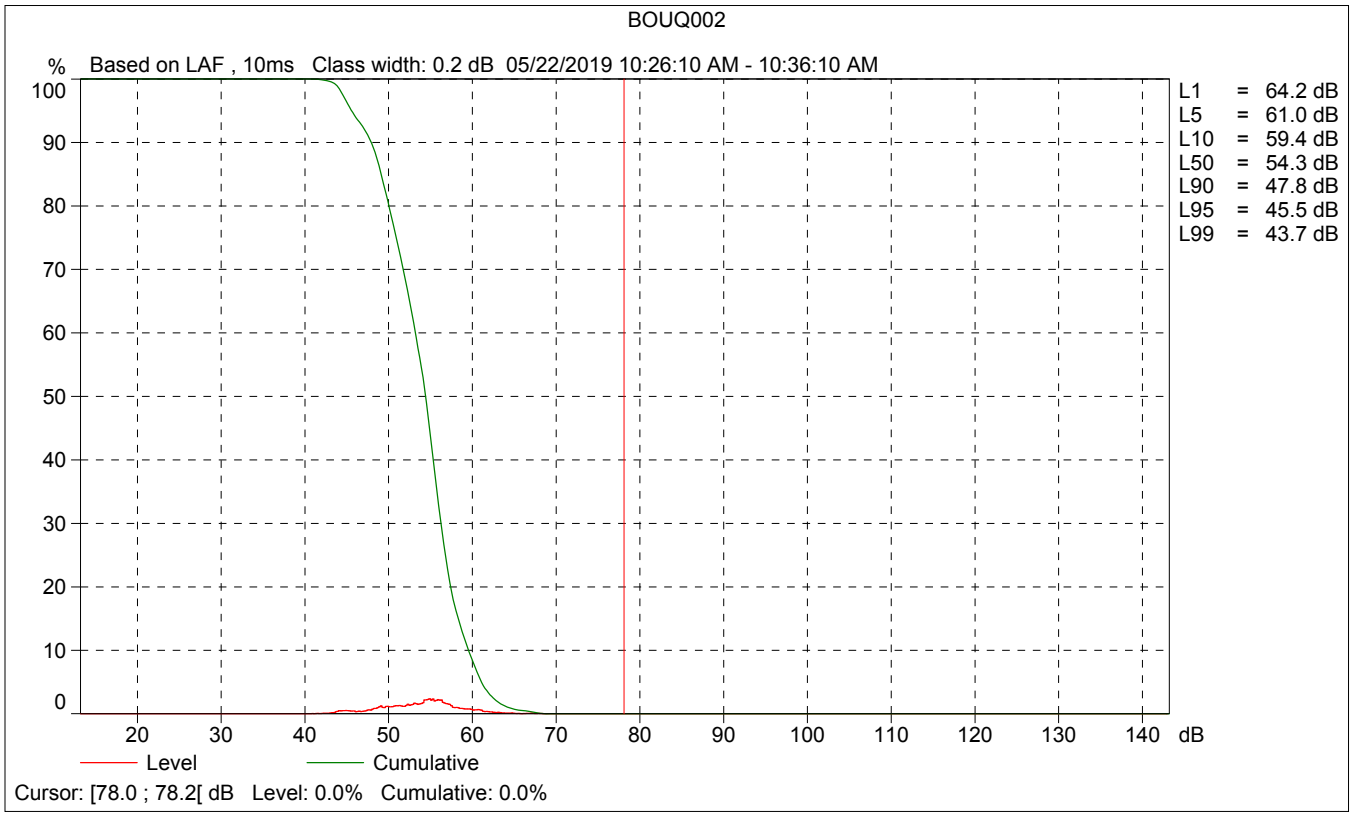
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

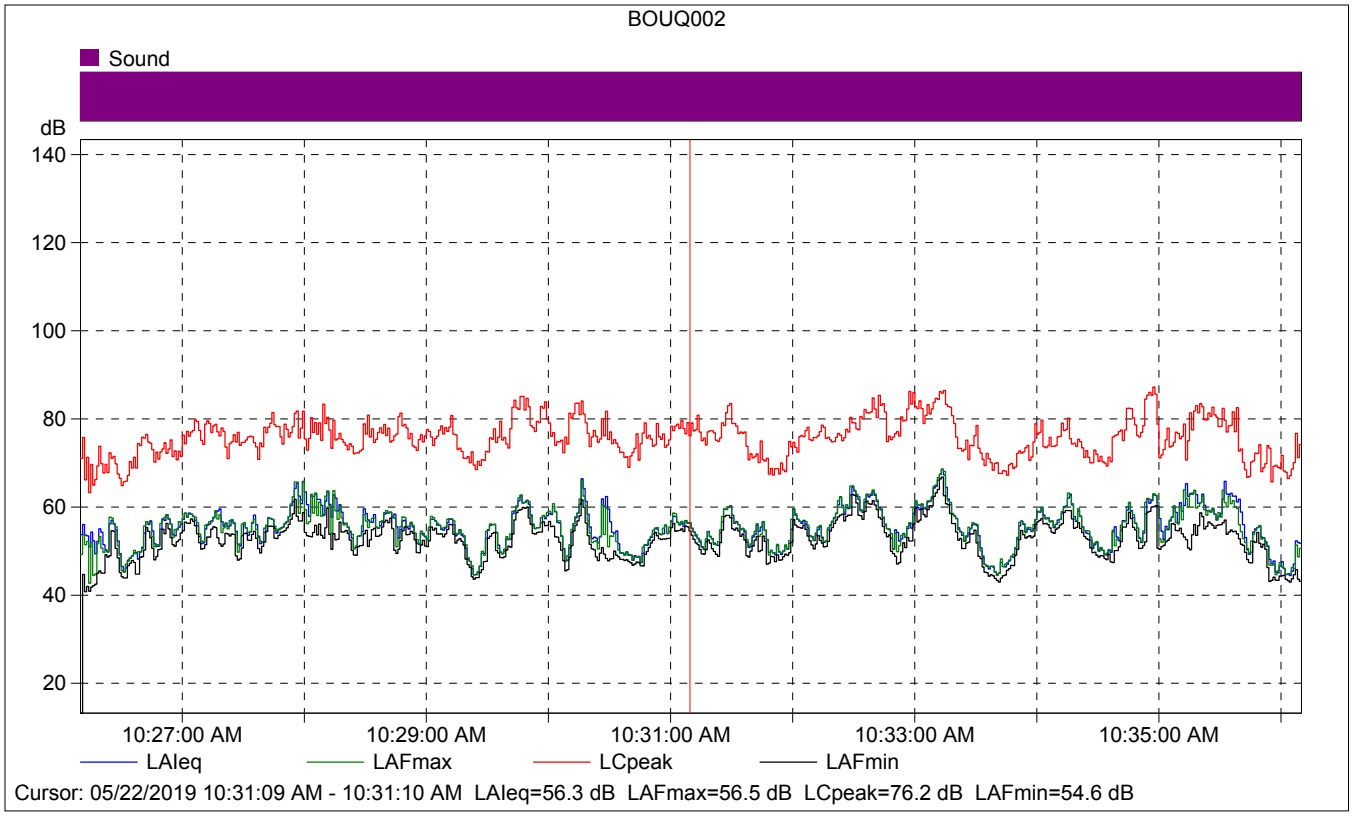
Calibration Time:		05/22/2019 07:24:19
Calibration Type:		External reference
Sensitivity:		43.775387108326 mV/Pa

BOUQ002

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	56.1	68.6	40.8
Time	10:26:10 AM	10:36:10 AM	0:10:00				
Date	05/22/2019	05/22/2019					

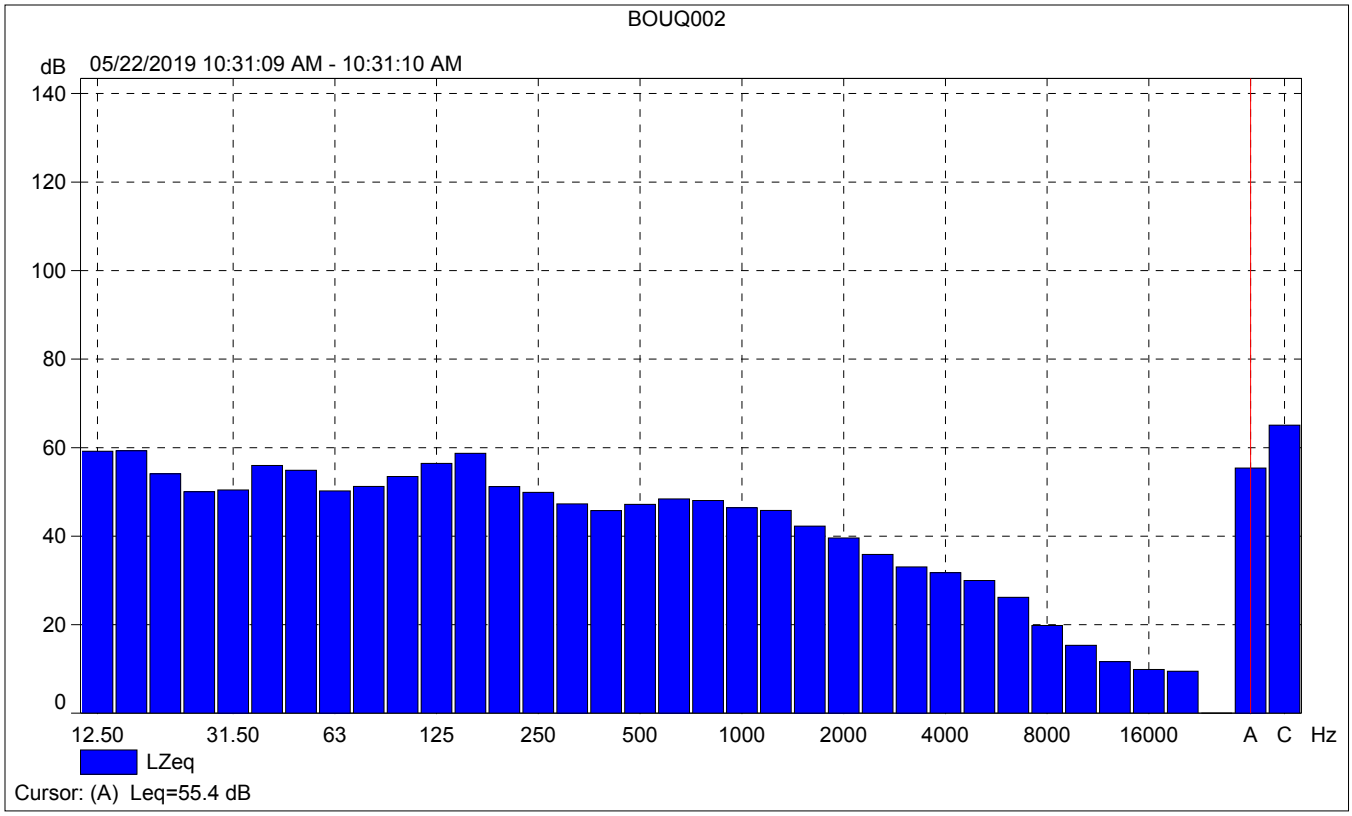

BOUQ002
dB
05/22/2019 10:26:10 AM - 10:36:10 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=56.1 dB LFmax=68.6 dB LFmin=40.8 dB

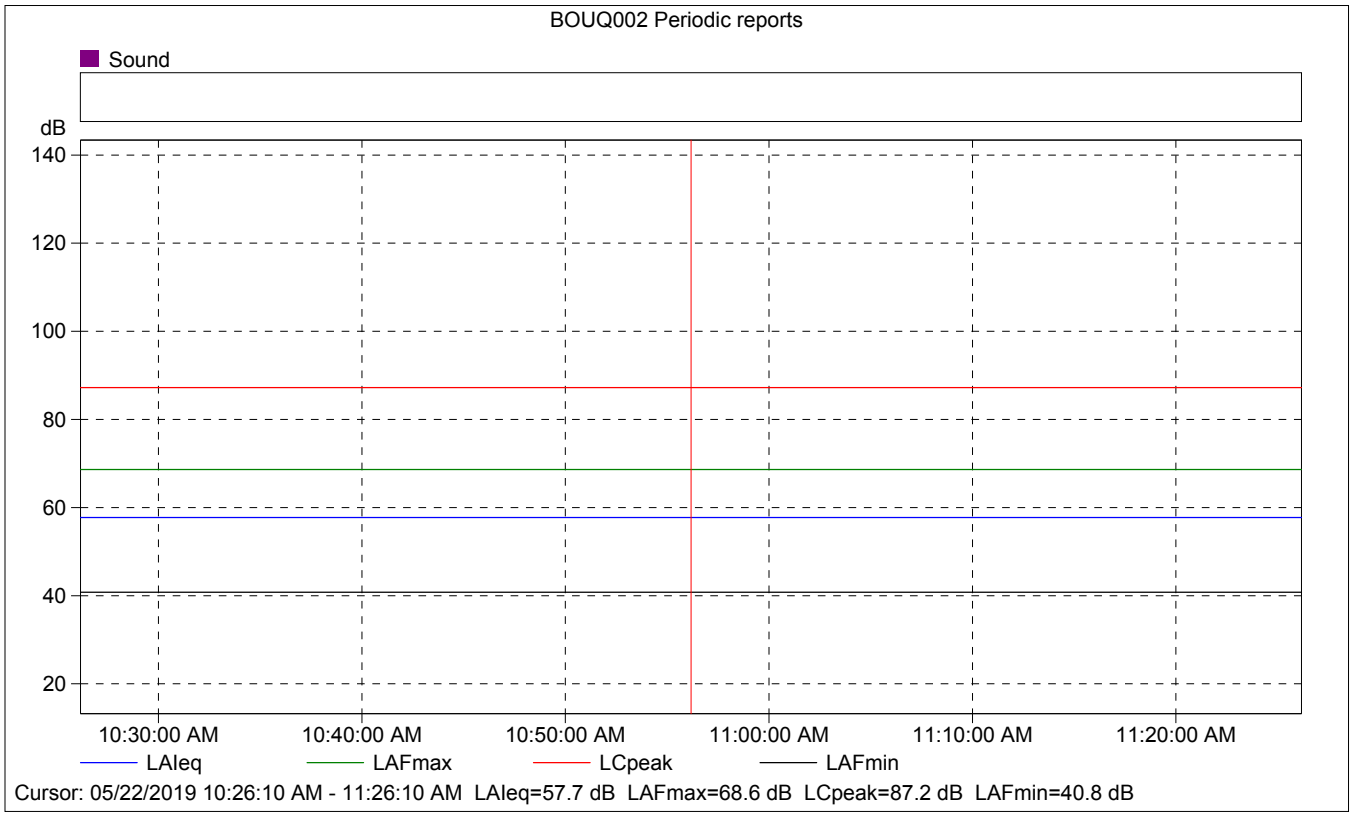

BOUQ002
%
Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 10:26:10 AM - 10:36:10 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 64.2 dB
L5 = 61.0 dB
L10 = 59.4 dB
L50 = 54.3 dB
L90 = 47.8 dB
L95 = 45.5 dB
L99 = 43.7 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%



BOUQ002

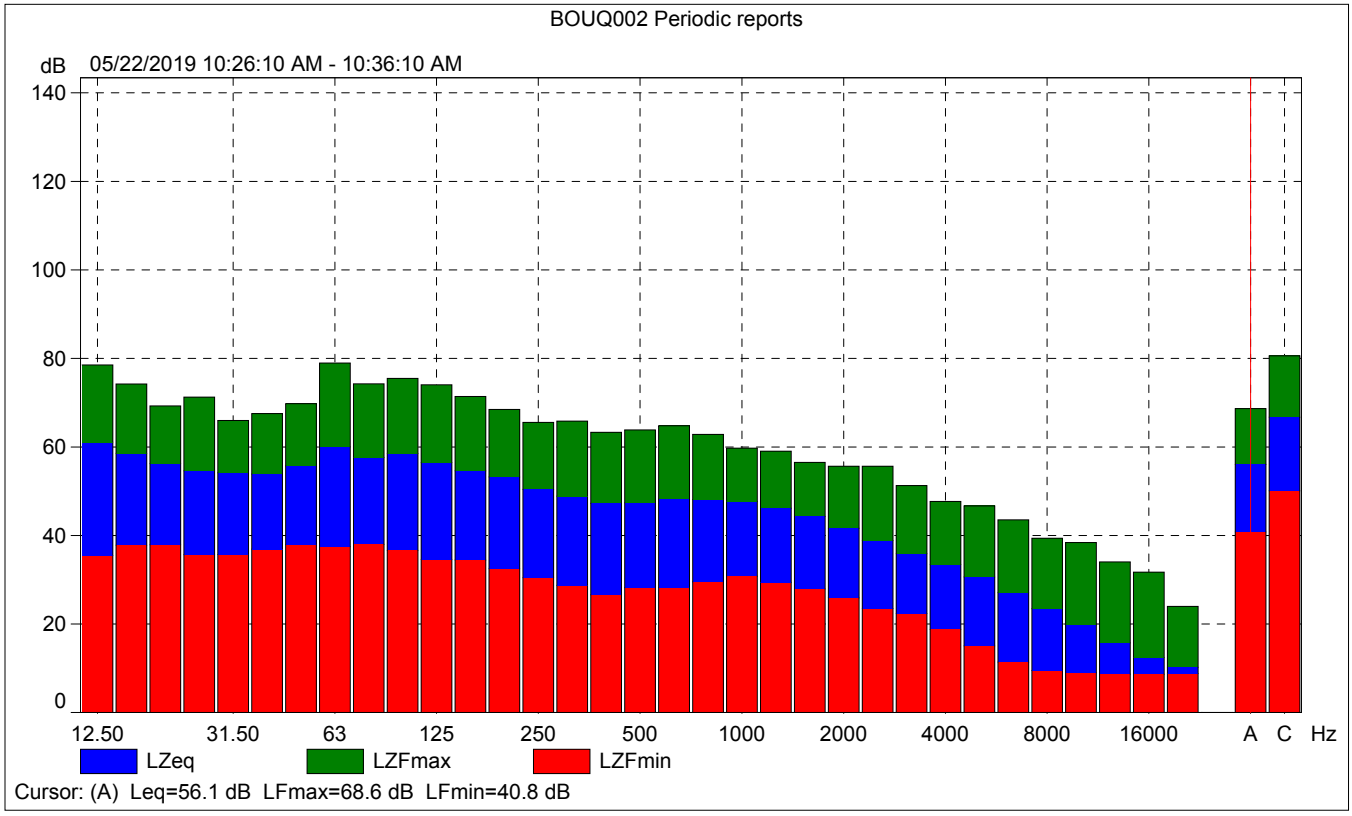
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			56.3	56.5	54.6
Time	10:31:09 AM	0:00:01			
Date	05/22/2019				

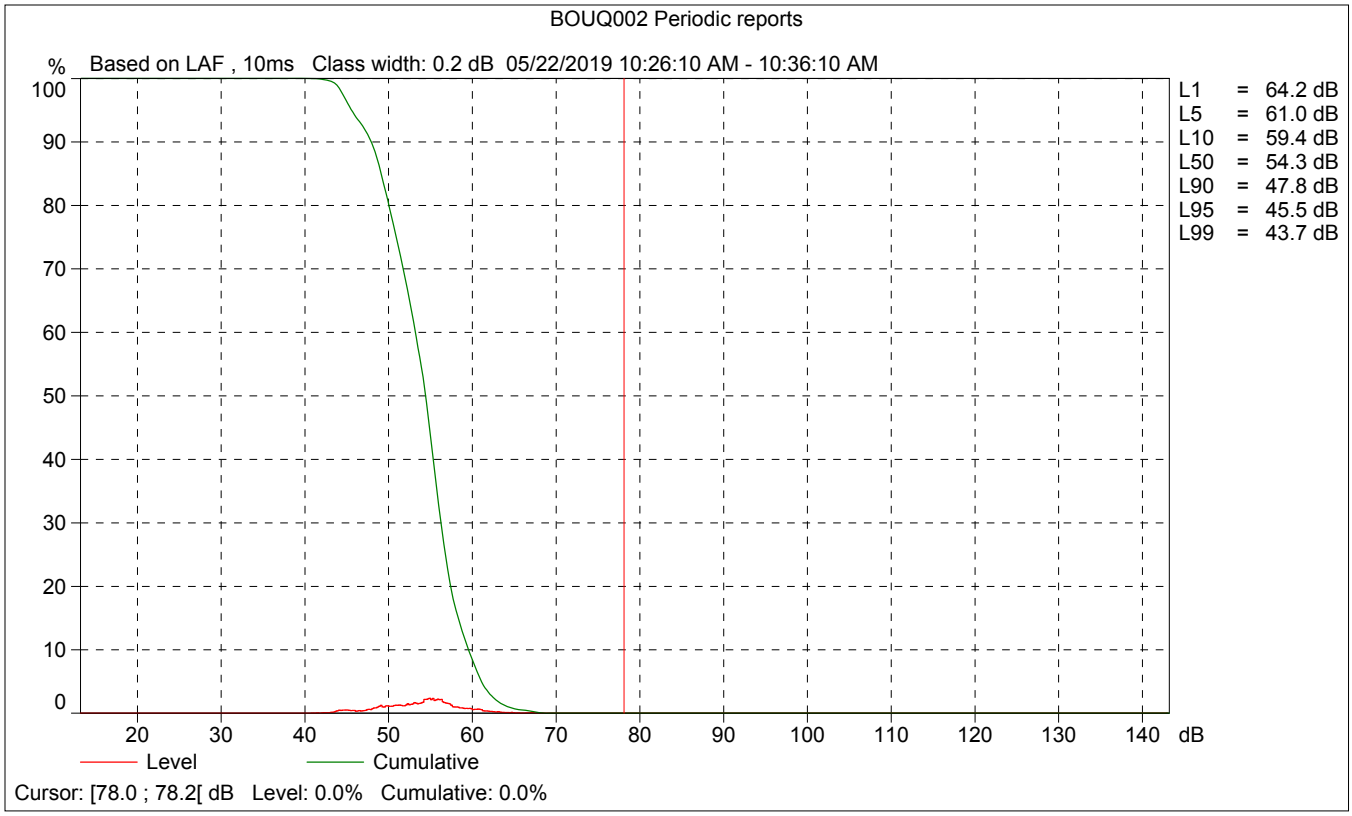

BOUQ002
dB
05/22/2019 10:31:09 AM - 10:31:10 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=55.4 dB


BOUQ002 Periodic reports
Sound
dB
140
120
100
80
60
40
20
10:30:00 AM
10:40:00 AM
10:50:00 AM
11:00:00 AM
11:10:00 AM
11:20:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/22/2019 10:26:10 AM - 11:26:10 AM LAIeq=57.7 dB LAFmax=68.6 dB LCpeak=87.2 dB LAFmin=40.8 dB

BOUQ002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	57.7	68.6	40.8
Time	10:26:10 AM	0:10:00				
Date	05/22/2019					




BOUQ002 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 10:26:10 AM - 10:36:10 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 64.2 dB
L5 = 61.0 dB
L10 = 59.4 dB
L50 = 54.3 dB
L90 = 47.8 dB
L95 = 45.5 dB
L99 = 43.7 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%

Site Number: Bouquet Canyon Site #3			
Recorded By: Pierre Glaize			
Job Number: 168840			
Date: 05/22/2019			
Time: 10:41 a.m.			
Location: Corner of Shadow Valley Lane and Bouquet Canyon Road.			
Source of Peak Noise: Traffic along Bouquet Canyon Road.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
66.5	37.6	88.6	101.4

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**04/08/2019**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**04/08/2019**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**04/08/2019**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**04/08/2019**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	10 mph	61°	29.73

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.7.4
Start Time:		05/22/2019 10:41:47
End Time:		05/22/2019 10:51:47
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.09

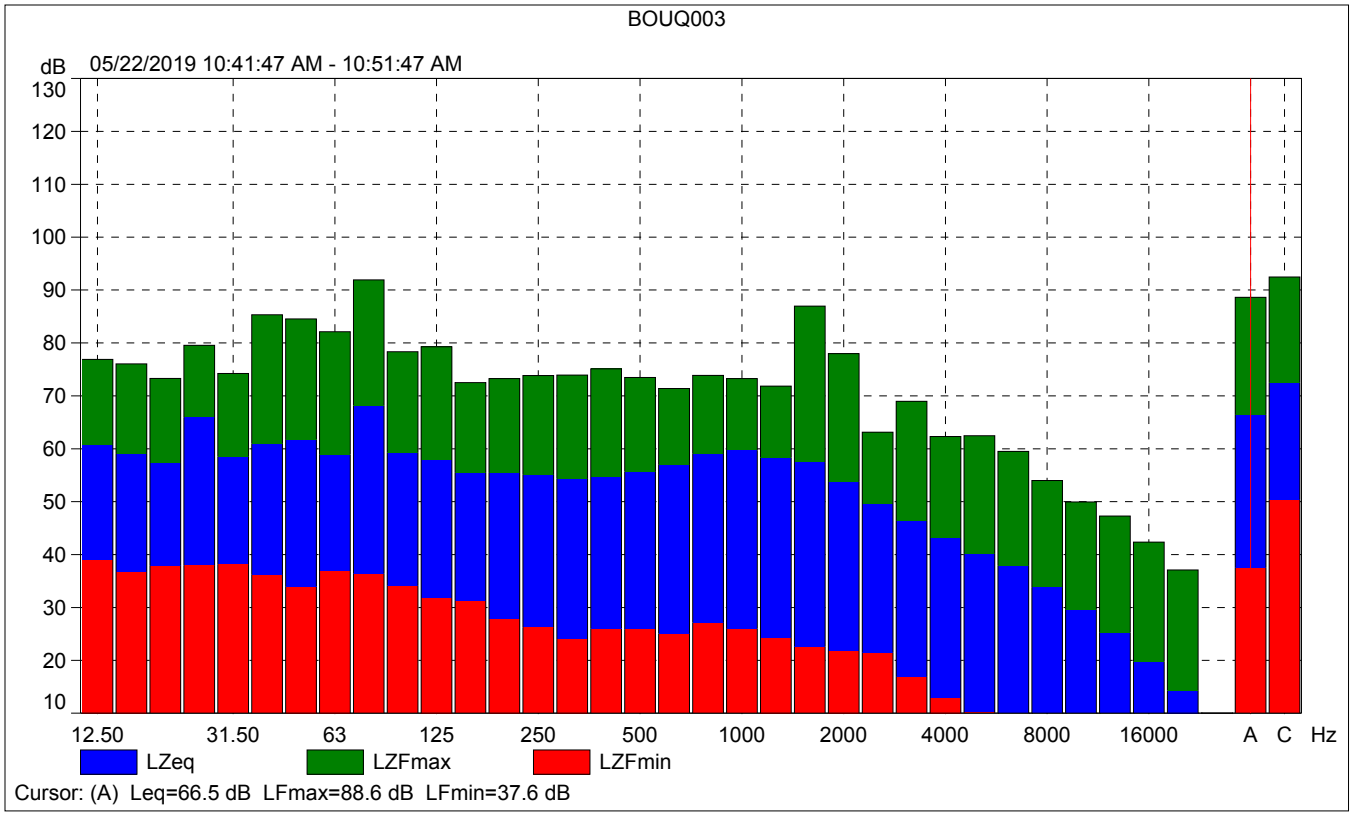
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

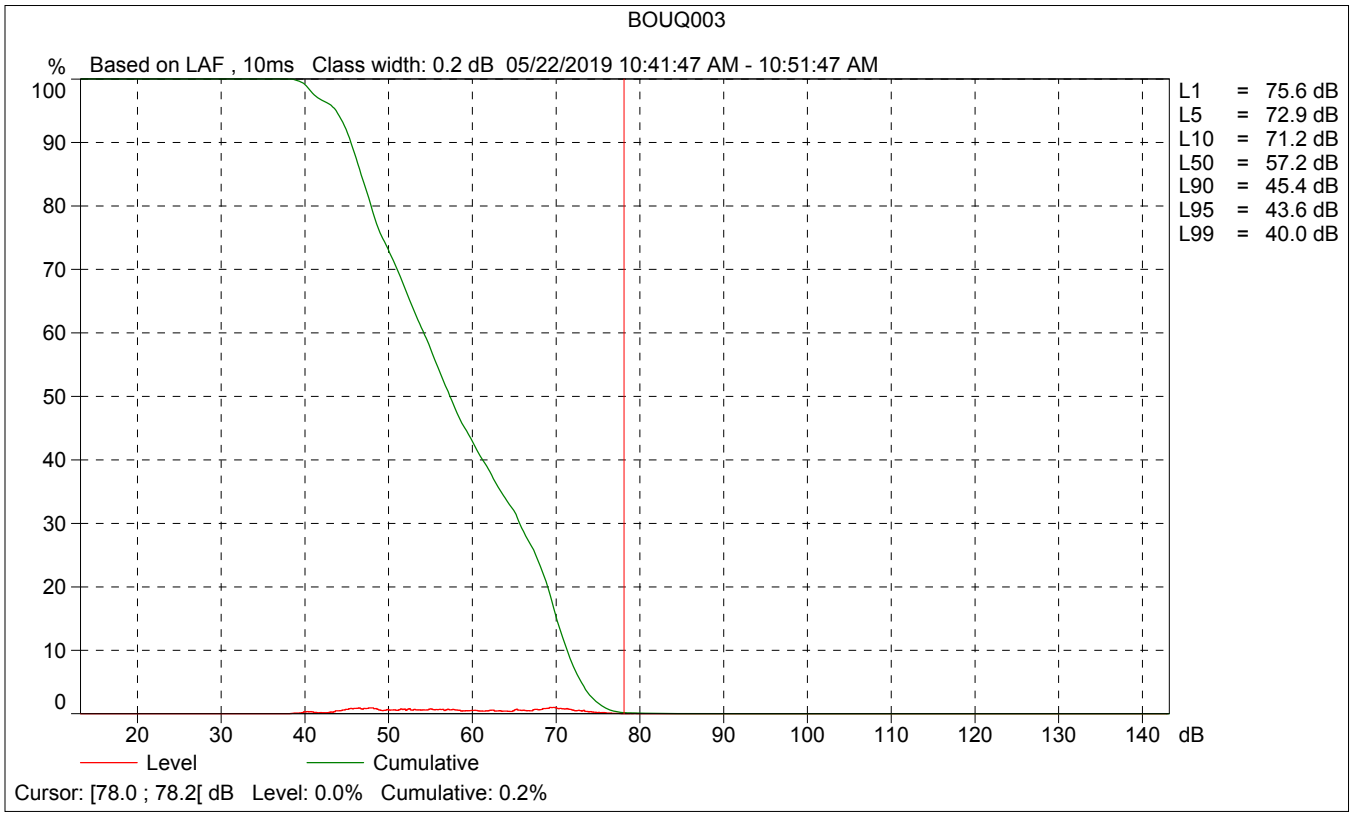
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

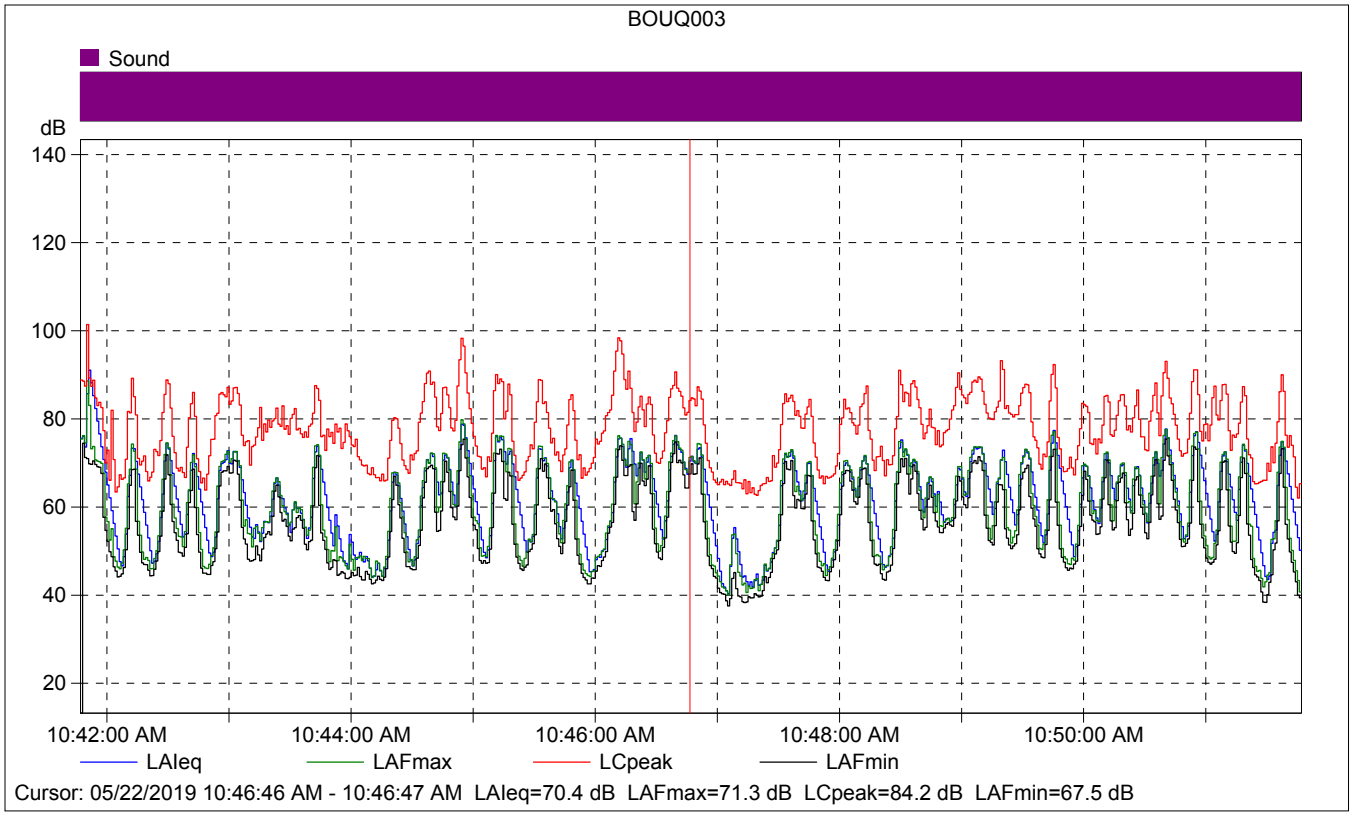
Calibration Time:		05/22/2019 07:24:19
Calibration Type:		External reference
Sensitivity:		43.775387108326 mV/Pa

BOUQ003

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	66.5	88.6	37.6
Time	10:41:47 AM	10:51:47 AM	0:10:00				
Date	05/22/2019	05/22/2019					

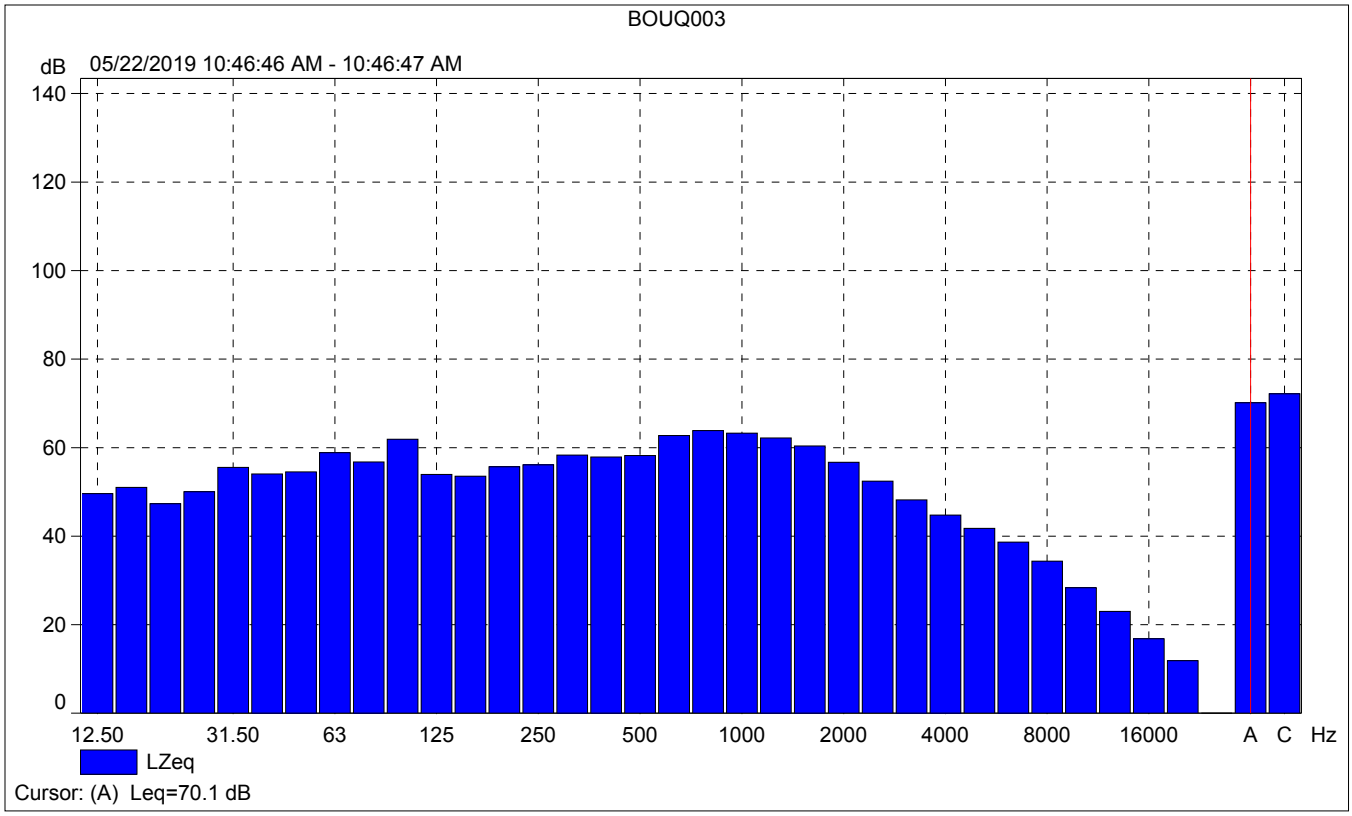

BOUQ003
dB
05/22/2019 10:41:47 AM - 10:51:47 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=66.5 dB LFmax=88.6 dB LFmin=37.6 dB

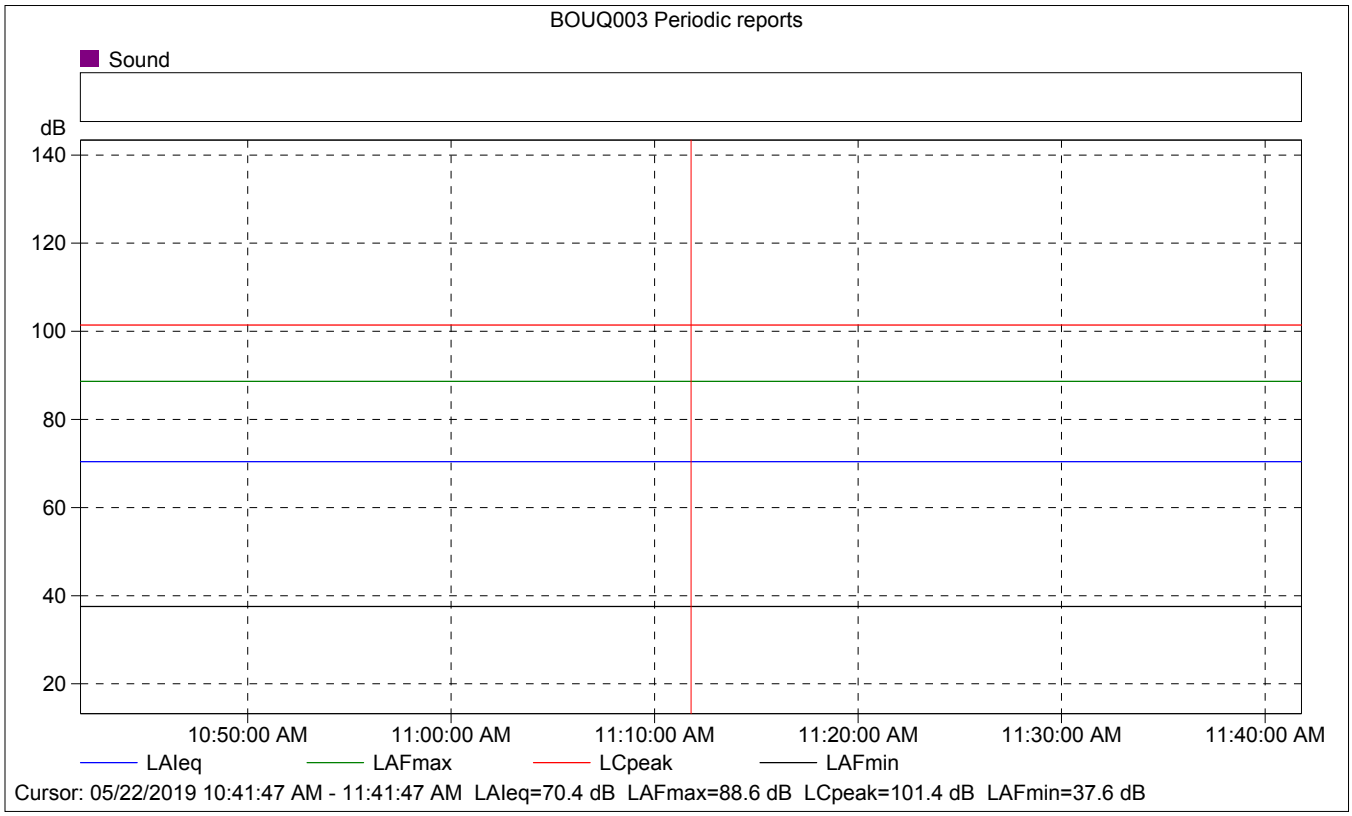

BOUQ003
%
Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 10:41:47 AM - 10:51:47 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 75.6 dB
L5 = 72.9 dB
L10 = 71.2 dB
L50 = 57.2 dB
L90 = 45.4 dB
L95 = 43.6 dB
L99 = 40.0 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.2%



BOUQ003

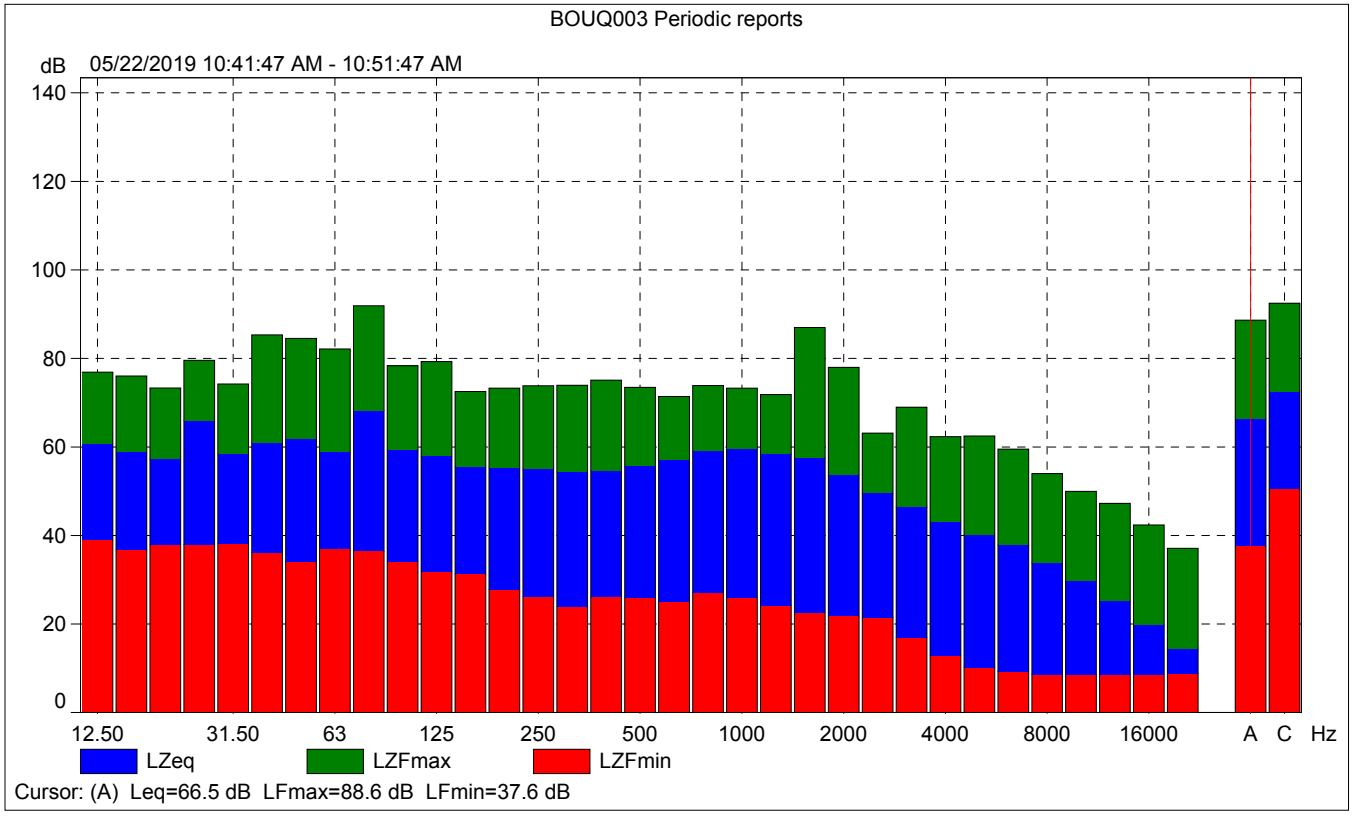
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			70.4	71.3	67.5
Time	10:46:46 AM	0:00:01			
Date	05/22/2019				

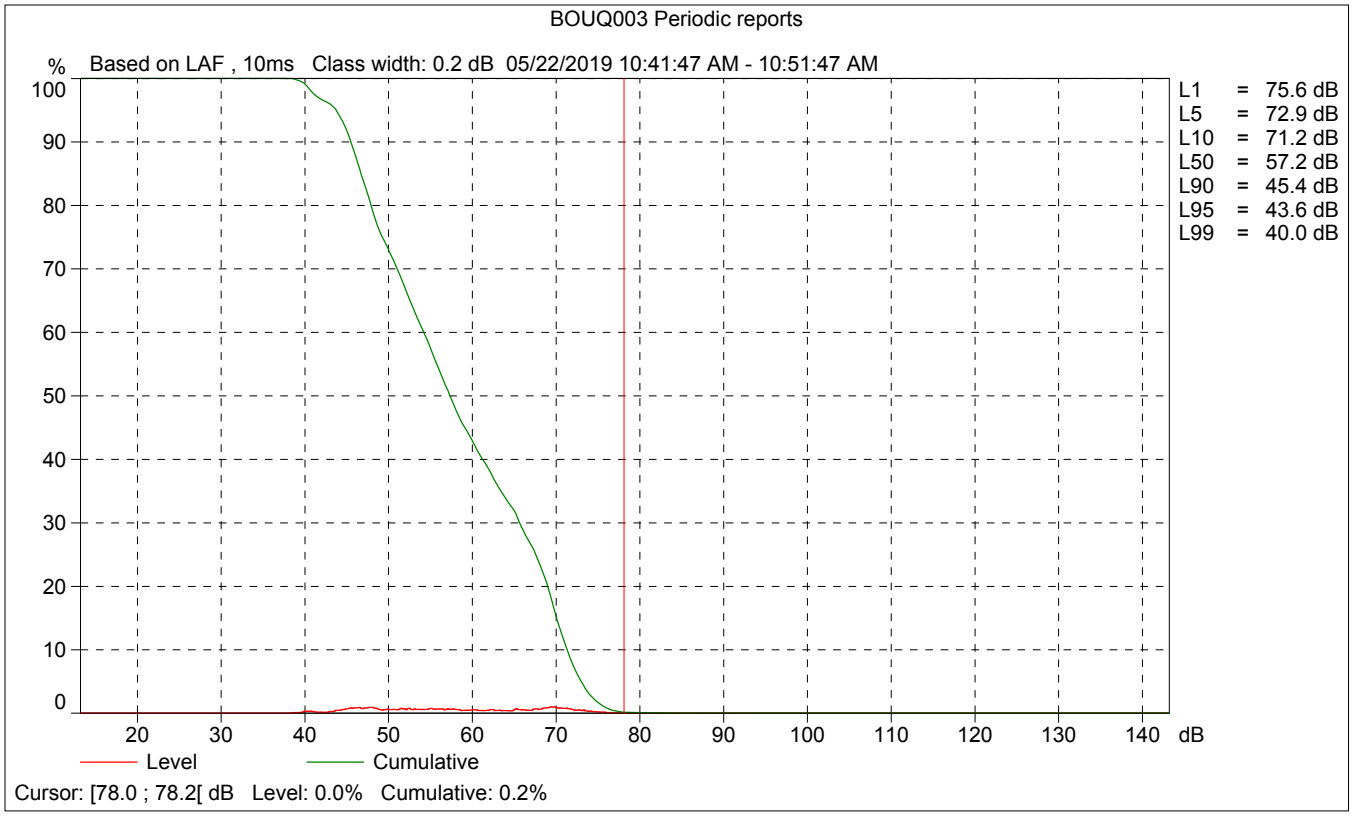

BOUQ003
dB
05/22/2019 10:46:46 AM - 10:46:47 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=70.1 dB


BOUQ003 Periodic reports
Sound
dB
140
120
100
80
60
40
20
10:50:00 AM
11:00:00 AM
11:10:00 AM
11:20:00 AM
11:30:00 AM
11:40:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/22/2019 10:41:47 AM - 11:41:47 AM LAIeq=70.4 dB LAFmax=88.6 dB LCpeak=101.4 dB LAFmin=37.6 dB

BOUQ003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	70.4	88.6	37.6
Time	10:41:47 AM	0:10:00				
Date	05/22/2019					




BOUQ003 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 10:41:47 AM - 10:51:47 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 75.6 dB
L5 = 72.9 dB
L10 = 71.2 dB
L50 = 57.2 dB
L90 = 45.4 dB
L95 = 43.6 dB
L99 = 40.0 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.2%

Site Number:	Bouquet Canyon Site #4
Recorded By:	Pierre Glaize
Job Number:	168840
Date:	05/22/2019
Time:	11:00 a.m.
Location:	On Nicholas Circle, to the South of the project site.
Source of Peak Noise:	Traffic on Nicholas Circle Drive.

Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
40.4	32.6	63.9	81.1

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**04/08/2019**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**04/08/2019**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**04/08/2019**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**04/08/2019**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	10	62°	29.73

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.7.4
Start Time:		05/22/2019 11:00:50
End Time:		05/22/2019 11:10:50
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.09

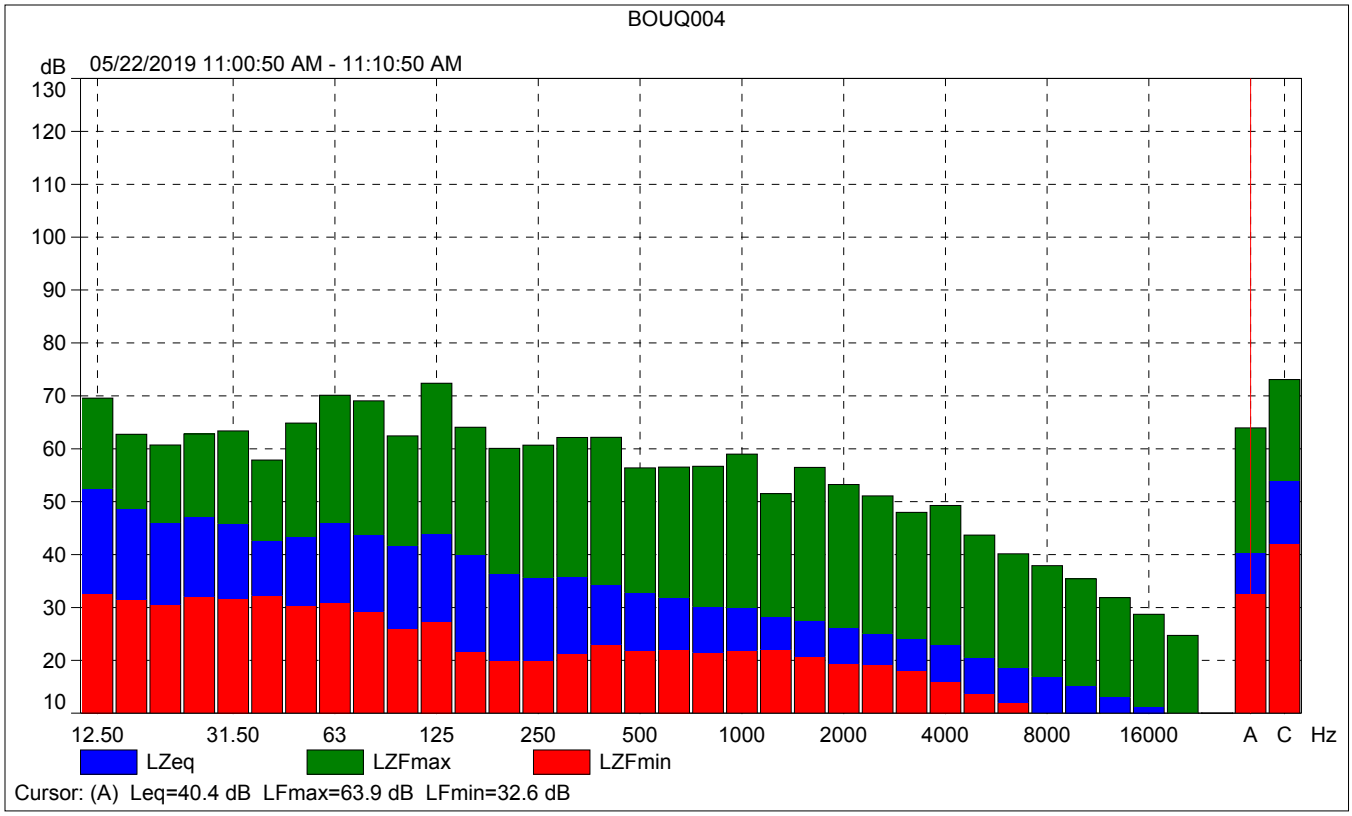
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

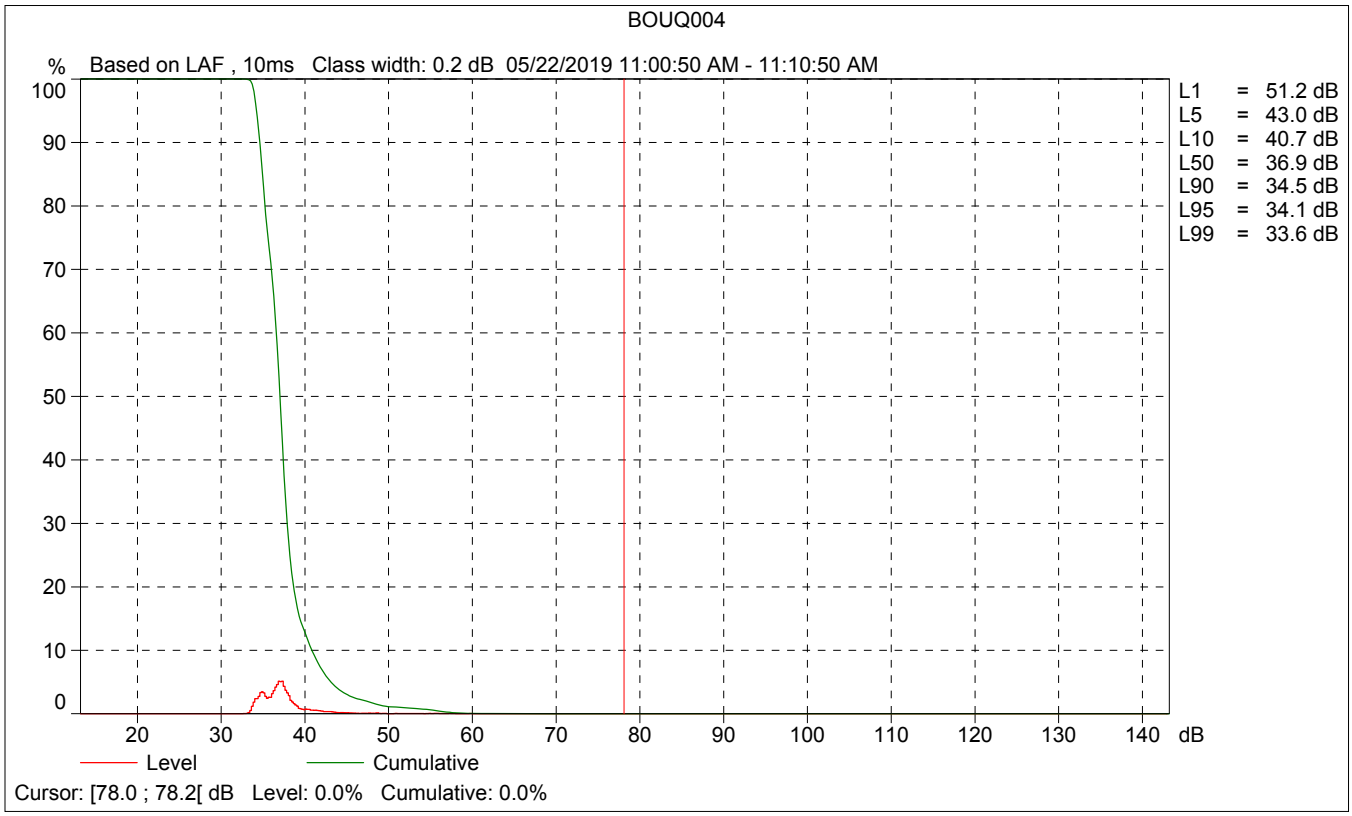
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

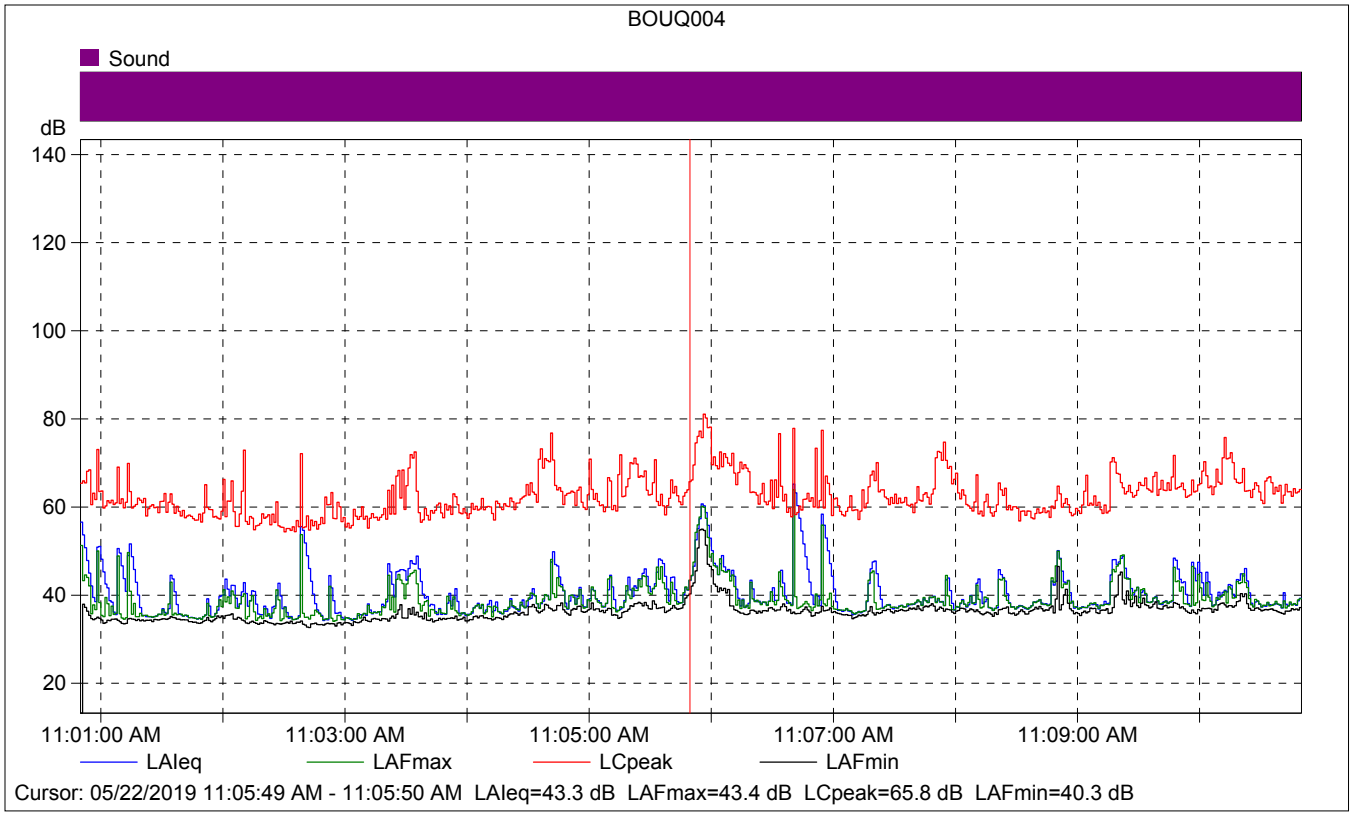
Calibration Time:		05/22/2019 07:24:19
Calibration Type:		External reference
Sensitivity:		43.775387108326 mV/Pa

BOUQ004

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	40.4	63.9	32.6
Time	11:00:50 AM	11:10:50 AM	0:10:00				
Date	05/22/2019	05/22/2019					

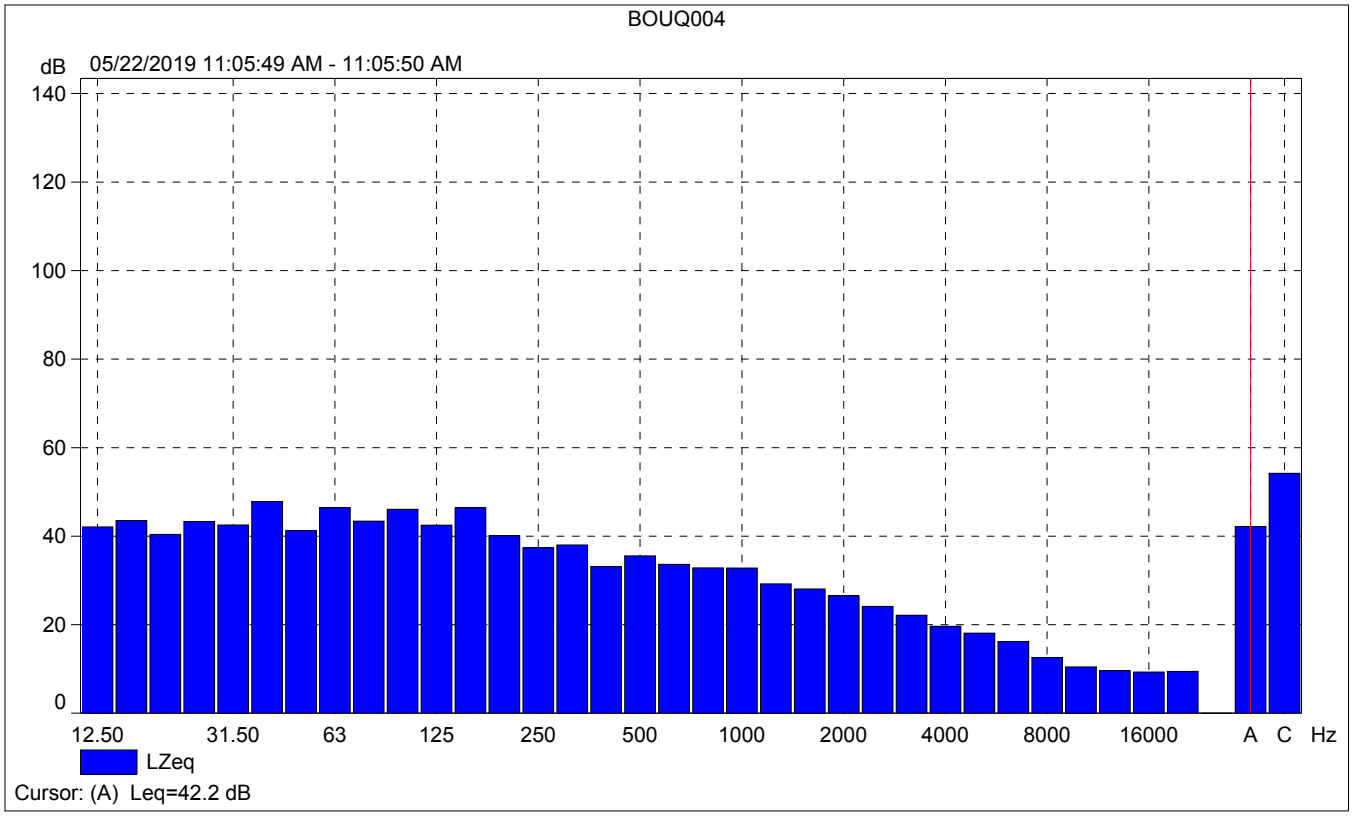

BOUQ004
dB
05/22/2019 11:00:50 AM - 11:10:50 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=40.4 dB LFmax=63.9 dB LFmin=32.6 dB

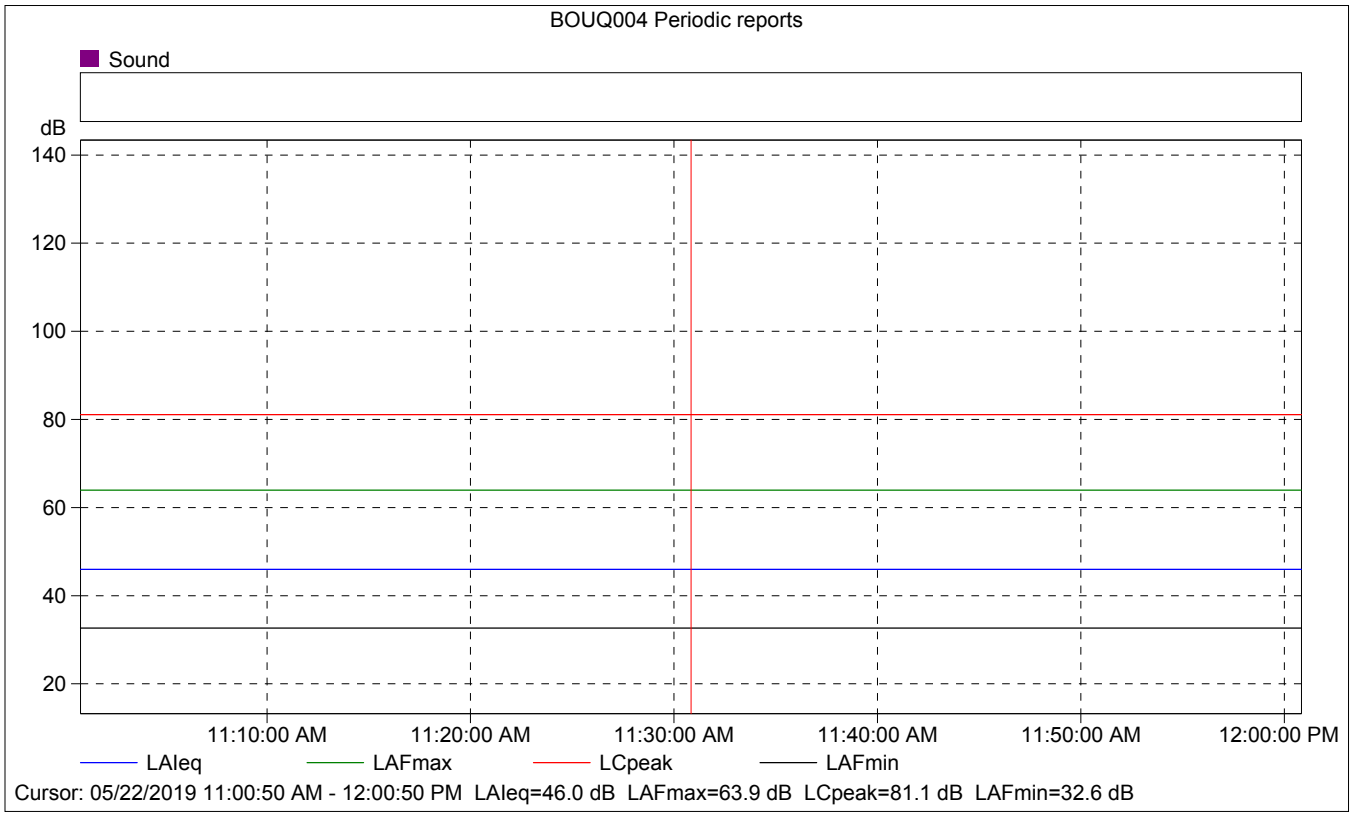

BOUQ004
%
Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 11:00:50 AM - 11:10:50 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 51.2 dB
L5 = 43.0 dB
L10 = 40.7 dB
L50 = 36.9 dB
L90 = 34.5 dB
L95 = 34.1 dB
L99 = 33.6 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%



BOUQ004

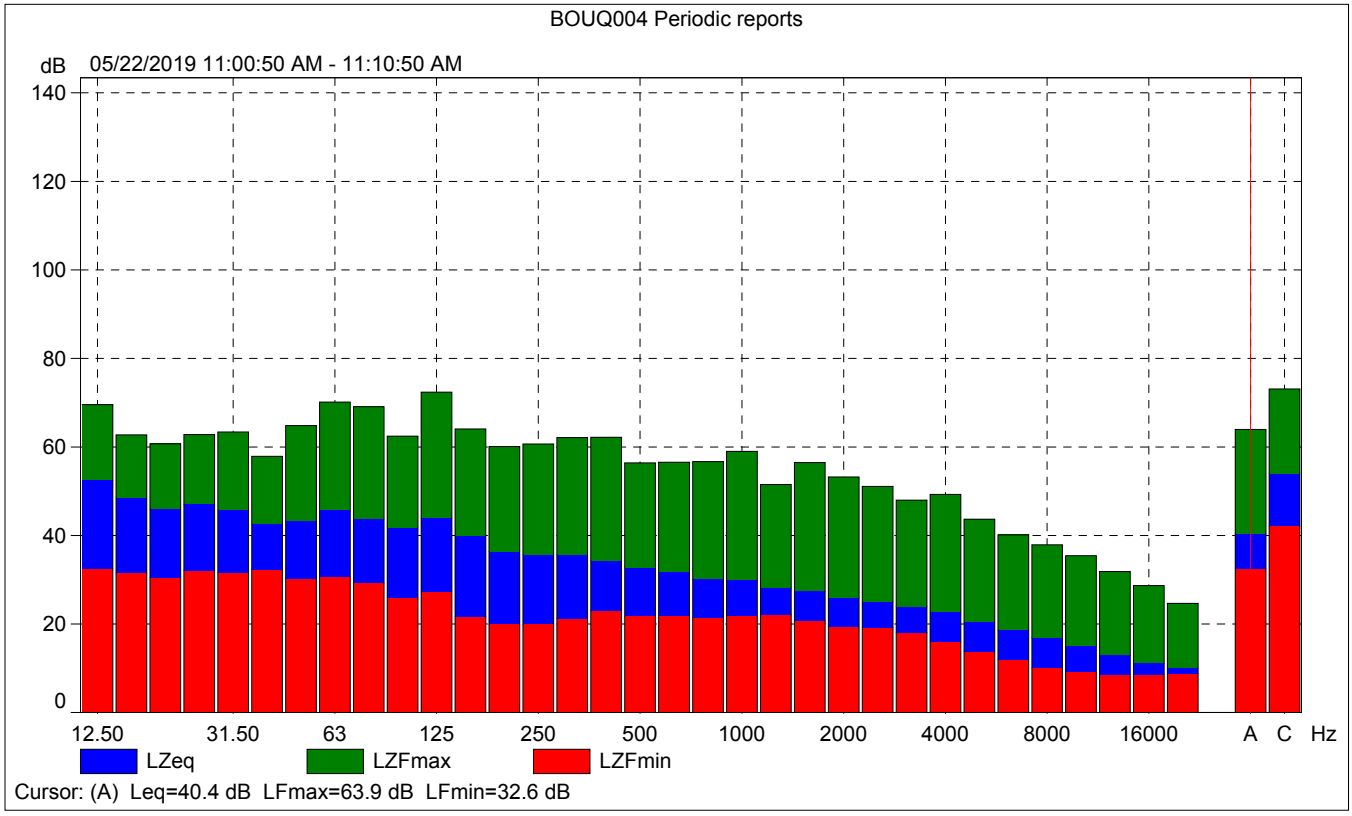
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			43.3	43.4	40.3
Time	11:05:49 AM	0:00:01			
Date	05/22/2019				

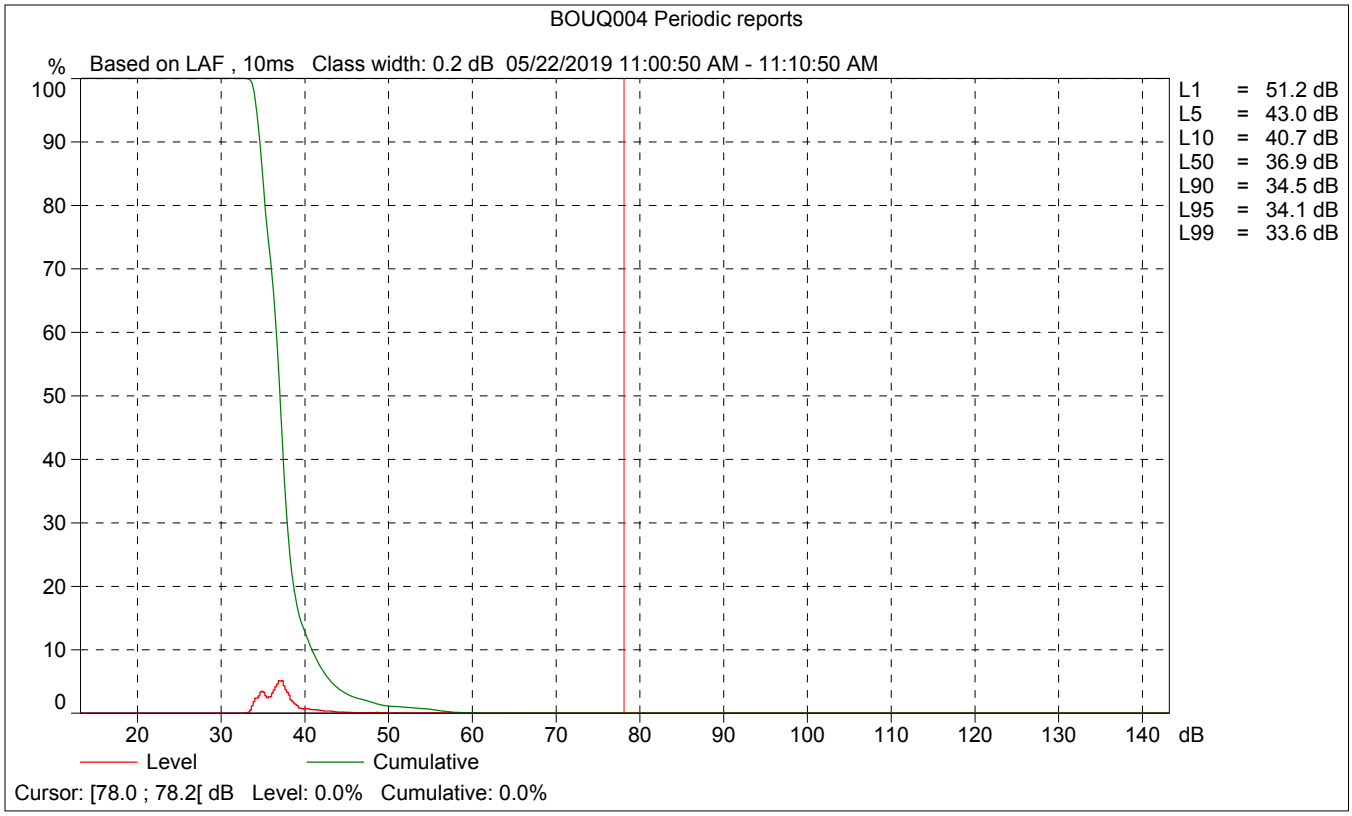

BOUQ004
dB
05/22/2019 11:05:49 AM - 11:05:50 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=42.2 dB


BOUQ004 Periodic reports
Sound
dB
140
120
100
80
60
40
20
11:10:00 AM
11:20:00 AM
11:30:00 AM
11:40:00 AM
11:50:00 AM
12:00:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/22/2019 11:00:50 AM - 12:00:50 PM LAIeq=46.0 dB LAFmax=63.9 dB LCpeak=81.1 dB LAFmin=32.6 dB

BOUQ004 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	46.0	63.9	32.6
Time	11:00:50 AM	0:10:00				
Date	05/22/2019					




BOUQ004 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 05/22/2019 11:00:50 AM - 11:10:50 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 51.2 dB
L5 = 43.0 dB
L10 = 40.7 dB
L50 = 36.9 dB
L90 = 34.5 dB
L95 = 34.1 dB
L99 = 33.6 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 168840
Project Name: Bouquet Canyon Project
Scenario: Existing

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Ganddini (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition				Design		Vehicle Mix		Distance from Centerline of Roadway					
		Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour				Calc
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL	Dist
Bouquet Canyon Road													
Newhall Ranch to Seco Canyon	6	0	64,300	45	0.5	1.8%	0.7%	69.7	96	207	447	962	100
Seco Canyon to Plum Canyon	6	18	25,000	50	0.5	1.8%	0.7%	67.0	-	136	292	629	100
Plum Canyon To David Way	2	0	16,000	45	0.5	1.8%	0.7%	63.4	36	78	169	364	100
Northeast of David Way	2	0	13,900	45	0.5	1.8%	0.7%	62.8	33	71	154	331	100
Newhall Ranch													
Bouquet Canyon to Golden Valley	6	22	49,400	50	0.5	1.8%	0.7%	70.0	100	215	464	1,000	100
Golden Valley													
Newhall Ranch to Plum Canyon	2	12	12,400	50	0.5	1.8%	0.7%	63.4	-	79	170	366	100
Plum Canyon													
Bouquet Canyon to Golden Valley	2	18	13,100	45	0.5	1.8%	0.7%	62.6	-	69	149	321	100
White Canyon													
South of Skyline Ranch Road	6	15	18,300	45	0.5	1.8%	0.7%	64.5	-	92	199	428	100
Benz Road													
Bouquet Canyon to Copper Hill	2	0	3,600	25	0.5	1.8%	0.7%	51.9	-	-	-	62	100
Copper Hill													
Seco Canyon to Haskell Canyon	4	12	22,700	50	0.5	1.8%	0.7%	66.2	56	121	260	560	100
Haskell Canyon to Benz Road	4	12	11,900	45	0.5	1.8%	0.7%	62.3	-	66	143	307	100
Benz to David Way	2	0	6,600	45	0.5	1.8%	0.7%	59.6	-	43	94	202	100
Seco Canyon													
Copper Hill to Bouquet Canyon	4	12	14,700	45	0.5	1.8%	0.7%	63.2	-	76	164	353	100
David Way													
Copper Hill to Bouquet Canyon	2	0	7,600	25	0.5	1.8%	0.7%	55.2	-	-	48	103	100

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 168840
Project Name: Bouquet Canyon Project
Scenario: Existing + Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Ganddini (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition				Design		Vehicle Mix		Distance from Centerline of Roadway					
		Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour				Calc
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL	Dist
Bouquet Canyon Road													
Newhall Ranch to Seco Canyon	6	0	65,200	45	0.5	1.8%	0.7%	69.8	97	209	451	971	100
Seco Canyon to Plum Canyon	6	18	26,800	50	0.5	1.8%	0.7%	67.3	66	142	306	659	100
Plum Canyon To David Way	2	0	18,600	45	0.5	1.8%	0.7%	64.1	40	87	187	402	100
Northeast of David Way	2	0	14,000	45	0.5	1.8%	0.7%	62.8	33	72	154	333	100
Newhall Ranch													
Bouquet Canyon to Golden Valley	6	22	49,400	50	0.5	1.8%	0.7%	70.0	100	215	464	1,000	100
Golden Valley													
Newhall Ranch to Plum Canyon	2	12	12,800	50	0.5	1.8%	0.7%	63.6	-	80	173	373	100
Plum Canyon													
Bouquet Canyon to Golden Valley	2	18	13,900	45	0.5	1.8%	0.7%	62.9	-	72	155	334	100
White Canyon													
South of Skyline Ranch Road	6	15	18,700	45	0.5	1.8%	0.7%	64.6	-	94	202	435	100
Benz Road													
Bouquet Canyon to Copper Hill	2	0	4,000	25	0.5	1.8%	0.7%	52.4	-	-	-	67	100
Copper Hill													
Seco Canyon to Haskell Canyon	4	12	23,100	50	0.5	1.8%	0.7%	66.3	57	122	263	566	100
Haskell Canyon to Benz Road	4	12	12,400	45	0.5	1.8%	0.7%	62.5	-	68	146	316	100
Benz to David Way	2	0	6,700	45	0.5	1.8%	0.7%	59.6	-	44	95	204	100
Seco Canyon													
Copper Hill to Bouquet Canyon	4	12	14,700	45	0.5	1.8%	0.7%	63.2	-	76	164	353	100
David Way													
Copper Hill to Bouquet Canyon	2	0	7,700	25	0.5	1.8%	0.7%	55.2	-	-	48	103	100

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 168840
Project Name: Bouquet Canyon Project
Scenario: Interim Year Cumulative (2028) without Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Ganddini (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition				Design		Vehicle Mix		Distance from Centerline of Roadway					
		Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour				Calc
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL	Dist
Bouquet Canyon Road													
Newhall Ranch to Seco Canyon	6	0	70,000	45	0.5	1.8%	0.7%	70.1	102	219	473	1,018	100
Seco Canyon to Plum Canyon	6	18	26,000	50	0.5	1.8%	0.7%	67.2	-	139	300	646	100
Plum Canyon To David Way	2	0	24,000	45	0.5	1.8%	0.7%	65.2	48	103	221	477	100
Northeast of David Way	2	0	22,000	45	0.5	1.8%	0.7%	64.8	45	97	209	450	100
Newhall Ranch													
Bouquet Canyon to Golden Valley	6	22	68,000	50	0.5	1.8%	0.7%	71.4	124	267	574	1,238	100
Golden Valley													
Newhall Ranch to Plum Canyon	2	12	29,000	50	0.5	1.8%	0.7%	67.1	64	139	299	644	100
Plum Canyon													
Bouquet Canyon to Golden Valley	2	18	19,000	45	0.5	1.8%	0.7%	64.2	41	89	191	412	100
White Canyon													
South of Skyline Ranch Road	6	15	19,000	45	0.5	1.8%	0.7%	64.6	-	95	204	439	100
Benz Road													
Bouquet Canyon to Copper Hill	2	0	4,000	25	0.5	1.8%	0.7%	52.4	-	-	-	67	100
Copper Hill													
Seco Canyon to Haskell Canyon	4	12	29,000	50	0.5	1.8%	0.7%	67.3	66	142	306	659	100
Haskell Canyon to Benz Road	4	12	19,000	45	0.5	1.8%	0.7%	64.3	-	90	195	419	100
Benz to David Way	2	0	11,000	45	0.5	1.8%	0.7%	61.8	-	61	132	283	100
Seco Canyon													
Copper Hill to Bouquet Canyon	4	12	16,000	45	0.5	1.8%	0.7%	63.6	-	81	174	374	100
David Way													
Copper Hill to Bouquet Canyon	2	0	13,000	25	0.5	1.8%	0.7%	57.5	-	-	68	147	100

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 168840
Project Name: Bouquet Canyon Project
Scenario: Interim Year Cumulative (2028) with Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Ganddini (2018)
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition				Design		Vehicle Mix		Distance from Centerline of Roadway					
		Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour				Calc
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL	Dist
Bouquet Canyon Road													
Newhall Ranch to Seco Canyon	6	0	70,900	45	0.5	1.8%	0.7%	70.2	103	221	477	1,027	100
Seco Canyon to Plum Canyon	6	18	27,800	50	0.5	1.8%	0.7%	67.4	68	145	313	675	100
Plum Canyon To David Way	2	0	26,600	45	0.5	1.8%	0.7%	65.6	51	110	237	510	100
Northeast of David Way	2	0	22,100	45	0.5	1.8%	0.7%	64.8	45	97	209	451	100
Newhall Ranch													
Bouquet Canyon to Golden Valley	6	22	68,000	50	0.5	1.8%	0.7%	71.4	124	267	574	1,238	100
Golden Valley													
Newhall Ranch to Plum Canyon	2	12	29,400	50	0.5	1.8%	0.7%	67.2	65	140	302	650	100
Plum Canyon													
Bouquet Canyon to Golden Valley	2	18	19,800	45	0.5	1.8%	0.7%	64.4	42	91	196	423	100
White Canyon													
South of Skyline Ranch Road	6	15	19,400	45	0.5	1.8%	0.7%	64.7	-	96	207	445	100
Benz Road													
Bouquet Canyon to Copper Hill	2	0	4,400	25	0.5	1.8%	0.7%	52.8	-	-	33	71	100
Copper Hill													
Seco Canyon to Haskell Canyon	4	12	29,400	50	0.5	1.8%	0.7%	67.3	66	143	309	665	100
Haskell Canyon to Benz Road	4	12	19,500	45	0.5	1.8%	0.7%	64.5	-	92	198	427	100
Benz to David Way	2	0	11,100	45	0.5	1.8%	0.7%	61.8	-	61	132	285	100
Seco Canyon													
Copper Hill to Bouquet Canyon	4	12	16,000	45	0.5	1.8%	0.7%	63.6	-	81	174	374	100
David Way													
Copper Hill to Bouquet Canyon	2	0	13,100	25	0.5	1.8%	0.7%	57.5	-	-	68	147	100

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

Appendix I:
Correspondence with Public Services and Utility Agencies

Correspondence with County of Los Angeles Fire Department

COUNTY OF LOS ANGELES
FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401
www.fire.lacounty.gov

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FORESTER & FIRE WARDEN

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THIRD DISTRICT

JANICE HAHN
FOURTH DISTRICT

KATHRYN BARGER
FIFTH DISTRICT

October 31, 2018

Hai Nguyen, Associate Planner
City of Santa Clarita
Community Development Department
23920 Valencia Boulevard
Santa Clarita, CA 91355

Dear Mr. Nguyen:

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT, "BOUQUET CANYON RESIDENTIAL PROJECT," CONSISTS OF THE DEVELOPMENT OF 461 HOUSING UNITS WITH RELATED INFRASTRUCTURE, OPEN SPACE, TRAILS, RECREATION, AND LANDSCAPE ELEMENTS ON APPROXIMATELY 57-ACRES OF UNDEVELOPED LAND, SANTA CLARITA, FFER 201800108

The Notice of Preparation of a Draft Environmental Impact Report has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

1. Please identify the station that would provide first response to the project area along with the present staffing, facilities, engines, and other fire response resources.

   Fire Station 108 is the jurisdictional station for the project site; it is located at 28799 N. Rock Canyon Drive, Santa Clarita, CA 91390. It is staffed with a 4-person engine company (1-Captain, 1-Fire Fighter Specialist and 2-Fire Fighters).

2. What is the response time standard or goal for a project of this type in this area?

   The Fire Department uses national guidelines of a 5-minute response time for the 1st-arriving unit for fire and EMS responses and 8 minutes for the advanced life support (paramedic) unit in urban areas, and 8-minute response time for the 1st-arriving unit and 12 minutes for advanced life support (paramedic) units in suburban areas. The City of Santa Clarita is a mix of urban/suburban area.

3. What are the current LACoFD response times to this area? Will LACoFD be able to maintain an adequate level of the fire response service with the implementation of the proposed project?

   During 2017, Fire Station 108 had an average emergency response time of 6:14 minutes.

   Yes, w*hile each additional development creates greater demands on existing resources at this time it appears the project would not have a significant effect on service demands.*

4. Are there any plans to expand or construct new fire station facilities or would the project create the need for expanded or new facilities? If so, please explain.

   Currently, there are no plans for facility expansion or new facilities in the project area.

5. Do you have any concerns regarding emergency access to the project site or within the proposed development plan during or following construction?

   To be answered by Land Development Division.

6. Is the project site located within a formally designated High Fire Zone? If so, what are the conditions that make it so and what design criteria must be met to reduce or eliminate wildland fire hazards to an acceptable level?

   To be answered by Forestry Division.

LAND DEVELOPMENT UNIT:

The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, fire hydrants, brush clearance and fuel modification plans.

When involved with subdivision in a city contracting fire protection with the County of Los Angeles Fire Department, the Fire Department requirements for access, fire flows, and hydrants are addressed during the subdivision tentative map stage.

ACCESS REQUIREMENTS:

1. The proposed development may necessitate multiple ingress/egress access for the circulation of traffic and emergency response issues.

2. Access roads shall be maintained with a minimum of 10 feet of brush clearance on each side. Fire access roads shall have an unobstructed vertical clearance clear-to-sky with the exception of protected tree species. Protected tree species overhanging fire access roads shall be maintained to provide a vertical clearance of 13 feet 6 inches.

3. All on-site Fire Apparatus Access Roads shall be labeled as "Private Driveway and Fire Lane" on the site plan along with the widths clearly depicted on the plan. Labeling is necessary to assure the access availability for Fire Department use. The designation allows for appropriate signage prohibiting parking.

4. Fire Apparatus Access Roads must be installed and maintained in a serviceable manner prior to and during the time of construction.

5. All fire lanes shall be clear of all encroachments and shall be maintained in accordance with the Title 32, County of Los Angeles Fire Code.

6. The Fire Apparatus Access Roads and designated fire lanes shall be measured from flow line to flow line.

7. For detached single family homes only provide a minimum unobstructed width of 20 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Apparatus Access Roads to within 150 feet of all portions of the exterior walls of the first story of the building, as measured by an approved route around the exterior of the building.

a. The required 20-foot wide driving surface shall be increased to 26 feet when fire hydrants are required. The 26-foot width shall be maintained for a minimum of 25 feet on each side of the hydrant location.

8. For commercial, mixed use, and multi-family developments provide a minimum unobstructed width of 26 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Department vehicular access to within 150 feet of all portions of the exterior walls of the first story of the building, as measured by an approved route around the exterior of the building.

9. For commercial, mixed use, and multi-family developments over 30 feet in height, provide a minimum unobstructed width of 28 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Department vehicular access to within 150 feet of all portions of the exterior walls of the first story of the building, as

measured by an approved route around the exterior of the building when the height of the building above the lowest level of the Fire Apparatus Access Road is more than 30 feet high or the building is more than three stories. The access roadway shall be located within a minimum of 15 feet and a maximum of 30 feet from the building and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial Fire Apparatus Access Road is positioned shall be approved by the fire code official.

10. If the Fire Apparatus Access Road is separated by island provide a minimum unobstructed width of 20 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Department vehicular access to within 150 feet of all portions of the exterior walls of the first story of the building, as measured by an approved route around the exterior of the building.

11. The dimensions of the approved Fire Apparatus Access Roads shall be maintained as originally approved by the fire code official.

12. Dead-end Fire Apparatus Access Roads in excess of 150 feet in-length shall be provided with an approved Fire Department turnaround.

13. Fire Apparatus Access Roads shall be provided with a 32-foot centerline turning radius.

14. Fire Apparatus Access Roads shall be designed and maintained to support the imposed load of fire apparatus weighing 75,000 pounds and shall be surfaced so as to provide all-weather driving capabilities. Fire Apparatus Access Roads having a grade of 10 percent or greater shall have a paved or concrete surface.

15. Fire Apparatus Access Roads shall not exceed 15 percent in grade.

16. Fire Apparatus Access Roads shall not be obstructed in any manner, including by the parking of vehicles, or the use of traffic calming devices, including but not limited to, speed bumps or speed humps.

17. Traffic Calming Devices, including but not limited to, speed bumps and speed humps, shall be prohibited unless approved by the fire code official.

18. A minimum 5-foot wide approved firefighter access walkway leading from the Fire Department Access Road to all required openings in the building's exterior walls shall be provided for firefighting and rescue purposes.

19. Parking on Public and/or Private Fire Apparatus Access Roads

a. Provide a minimum width of 36 feet for parallel parking on both sides of the Fire Apparatus Access Road and/or on cul-de-sac design with a length of 701 feet to 1,000 feet.

b. Provide a minimum width of 34 feet for parallel parking on one side of the Fire Apparatus Access Road with through access and with one side of the roadway being designated "No Parking – Fire Lane."

c. Provide a minimum width of 34 feet for parallel parking on both sides of the Fire Apparatus Access Road when the street is designed to be a cul-de-sac less than 700 feet in- length.

20. The method of gate control shall be subject to review by the Fire Department prior to clearance to proceed to public hearing. All gates to control vehicular access shall be in compliance with the following:

a. The keypad location shall be located a minimum of 50 feet from the public right-of-way.

b. Provide a minimum 32-foot turning radius beyond the keypad prior to the gate entrance at a minimum width of 20' for turnaround purposes.

c. The gated entrance design with a single access point (ingress and egress) shall provide for a minimum width of 20 feet clear-to-sky with all gate hardware is clear of the access way.

d. Where the Fire Apparatus Access Road consists of a divided roadway the gate width shall be not less than 15 feet for residential use and 20 feet for commercial/industrial uses. Each side of the roadway shall be clear-to-sky.

e. Construction of gates shall be materials that allow manual operations by one person.

f. Gates shall be of the swinging or sliding type.

g. The security gate shall be provided with an approved means of emergency operation and shall be maintained operational at all times and replaced or repaired when defective.

h. Electric gate operators where provided shall be listed in accordance with UL 325.

i. Gates intended for automatic operation shall be designed, constructed, and installed to comply with the requirements of ASTM F2200.

j. All locking devices shall comply with the County of Los Angeles Fire Department Regulation 5, Compliance for Installation of Emergency Access Devices.

WATER SYSTEM REQUIREMENTS:

1. All fire hydrants shall measure 6"x 4"x 2-1/2" brass or bronze conforming to current AWWA standard C503 or approved equal and shall be installed in accordance with the County of Los Angeles Fire Code.

2. All required PUBLIC fire hydrants shall be installed, tested, and accepted prior to beginning construction.

3. All required private on-site fire hydrants shall be installed, tested, and approved prior to building occupancy.

4. Plans showing underground piping for private on-site fire hydrants shall be submitted to the Sprinkler Plan Check Unit for review and approval prior to installation. Fire Code 901.2 and County of Los Angeles Fire Department Regulation 7.

5. All on-site fire hydrants shall be installed a minimum of 25' feet from a structure or protected by a two (2) hour rated firewall. Exception: For fully sprinkled multi-family structures on-site hydrants may be installed a minimum of 10 feet from the structure. Indicate compliance prior to project proceeding to the public hearing process. Fire Code Appendix C106.1.

6. The required fire flow for the public fire hydrants for single-family residential homes less than a total square footage of 3,600 feet is 1,250 gpm at 20 pounds psi residual pressure for 2 hours with one public fire hydrant flowing. Any single-family residential home 3,601 square feet or greater shall comply with Table B105.1 of the Fire Code in Appendix B.

7. The required fire flow for the public fire hydrants for buildings other than single-family homes shall comply with Table B105.1 of the Fire Code in Appendix B.

8. The required fire flow for the on-site private fire hydrants for this project shall comply with Table B105.1 of the Fire Code in Appendix B.

9. An approved automatic fire sprinkler system is required for the proposed buildings within this development. Submit design plans to the Fire Department Sprinkler Plan Check Unit for review and approval prior to installation.

10. The public and on-site fire hydrant locations will be determined by the Fire Department with the submittal of plan.

FUEL MODIFICATION:

1. This property is located within the area described by the Fire Department as the Very High Fire Hazard Severity Zone and a Fuel Modification Plan will be required. For details, please contact the Department's Fuel Modification Unit which is located at Fire Station 32, 605 North Angeleno Avenue in the City of Azusa, CA 91702-2904. They may be reached at (626) 969-5205.

Additional Fire Department requirements may need to be addressed with the submittal of plans for review.

For any questions regarding the report, please contact FPEA Wally Collins at (323) 890-4243 or Wally.Collins@fire.lacounty.gov.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.

Under the Los Angeles County Oak tree Ordinance, a permit is required to cut, destroy, remove, relocate, inflict damage or encroach into the protected zone of any tree of the Oak genus which is 25 inches or more in circumference (eight inches in diameter), as measured 4 1/2 feet above mean natural grade.

A fuel management/modification and fire hazard reduction plan should be developed and implemented prior to construction.

If Oak trees are known to exist in the proposed project area further field studies should be conducted to determine the presence of this species on the project site.

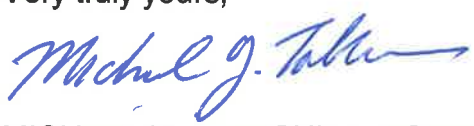
The County of Los Angeles Fire Department's Forestry Division has no further comments regarding this project.

HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments regarding the Lead Agency's "Fire Department Resources" questionnaire pertaining to the project site.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,



MICHAEL Y. TAKESHITA, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

MYT:ac

COUNTY OF LOS ANGELES
FIRE DEPARTMENT

FUEL MODIFICATION UNIT
605 NORTH ANGELENO AVENUE
AZUSA, CA 91702
(626) 969-5205
www.fire.lacounty.gov/forestry-division/forestry-fuel-modification/

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FOURTH DISTRICT

KATHRYN BARGER
FIFTH DISTRICT

November 7, 2019

Scott Covington
888 San Clemente Drive, Suite 100
Newport Beach, CA 92660

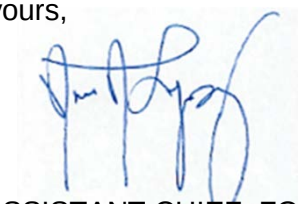
Dear Mr. Covington:

FUEL MODIFICATION PLAN – BOUQUET CANYON SUBDIVISION, SANTA CLARITA
TRACT # 82126 - FM PROJECT #7669 - FFFM # 201900385

The Preliminary Fuel Modification Plan has been reviewed. The project is approved in concept, and needs to be resubmitted for final review and approval prior to granting building permits.

Questions regarding this response should be directed to the Fuel Modification Unit. Office hours are Monday through Thursday, from 8:00 a.m. to 4:00 p.m. for plan submittal and general questions. Plan checkers are available 8:00 a.m. to 10:00 a.m. and by appointment. The Fuel Modification Unit may be reached at (626) 969-5205.

Very truly yours,



J. Lopez, ASSISTANT CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

JL:bw

Appendix I:
Correspondence with Public Services and Utility Agencies

Correspondence with County Sanitation Districts of Los Angeles County

WATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

GRACE ROBINSON HYDE
Chief Engineer and General Manager

October 1, 2018

Ref. Doc. No.: 4754861

Mr. Hai Nguyen
Associate Planner
Community Development Department
City of Santa Clarita
23920 Valencia Boulevard
Suite 302
Santa Clarita, CA 91355

Dear Mr. Nguyen:

Will Serve Letter for Bouquet Canyon Project

The Santa Clarita Valley Sanitation District (District) received your will serve letter request for the subject project on September 25, 2018. The proposed project is located within the jurisdictional boundaries of the District. We offer the following comments regarding sewerage service:

1. The project area is outside the jurisdictional boundaries of the District and will require annexation into the District before sewerage service can be provided to the proposed development. For a copy of the District's Annexation Information and Processing Fee sheets, go to www.lacsd.org, Wastewater & Sewer Systems, Will Serve Program, and click on the appropriate link. For more specific information regarding the annexation procedure and fees, please contact Ms. Donna Curry at (562) 908-4288, extension 2708.

2. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the District, for conveyance to the District's Bouquet Canyon Relief Trunk Sewer, located in Bouquet Canyon Road at Festividad Drive. The District's 24–inch diameter trunk sewer has a capacity of 12.3 million gallons per day (mgd) and conveyed a peak flow of 3.5 mgd when last measured in 2012.

3. The District operates two water reclamation plants (WRPs), the Saugus WRP and the Valencia WRP, which provide wastewater treatment in the Santa Clarita Valley. These facilities are interconnected to form a regional treatment system known as the Santa Clarita Valley Joint Sewerage System (SCVJSS). The SCVJSS has a capacity of 28.1 mgd and currently produces an average recycled water flow of 18.4 mgd.

4. The expected average wastewater flow from the project, described in the application as 461 residential units, is 101,920 gallons per day. For a copy of the District's average wastewater generation factors, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.

5. The District is empowered by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the District's Sewerage System for increasing the strength or quantity of wastewater discharged from connected facilities. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before a permit to connect to the sewer is issued. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and search for the appropriate link. In determining the impact to the Sewerage System and applicable connection fees, the Districts' Chief Engineer and General Manager will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel or facilities on the parcel. For more specific information regarding the connection fee application procedure and fees, please contact the Connection Fee Counter at (562) 908-4288, extension 2727.

6. In order for the District to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of District wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of District facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of District treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise you that the District intends to provide this service up to the levels that are legally permitted and to inform you of the currently existing capacity and any proposed expansion of District facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

cc: D. Curry
A. Schmidt
A. Howard

Appendix I:
Correspondence with Public Services and Utility Agencies

Correspondence with City of Santa Clarita, Recreation and Community Services Department

From: Hai Nguyen
To: Nichols, Randy
Subject: EXTERNAL: FW: Bouquet Realignment Project EIR
Date: Monday, June 17, 2019 9:13:06 AM

Please see the response from Parks below.

From: Jeff Morrison
Sent: Monday, June 17, 2019 7:13 AM
To: Hai Nguyen <HNGUYEN@santa-clarita.com>
Subject: RE: Bouquet Realignment Project EIR

- Please identify the City's current parkland requirements that are applicable to this project, such as number of acres per 1,000 residents, dedication of land or payment of in-lieu fees, etc. The City's General Plan calls for 5 acres per 1,000 residents. The City typically requires a minimum of 5 acres of land for a Neighborhood Park. For this project the City will be collecting in-lieu fees, as there is not 5 acres available for dedication to the City.

- Are there any plans to expand or construct new parks for this part of the city (Saugus) or to expand existing parks serving local residents or would the project create the need for expanded or new park land? If so, please explain.
  There are plans to expand Bouquet Canyon Park, David March Park, and Central Park that the in-lieu fees would go towards. These expansions would cover the need for parkland created by this development.

  Thank you.

Jeff Morrison
Project Development Coordinator
City of Santa Clarita

Phone: (661) 286-4041
Cell: (661) 510-2074
Email: jmorrison@santa-clarita.com
Web: http://www.santa-clarita.com

Appendix I:
Correspondence with Public Services and Utility Agencies

Correspondence with School Districts

From: Roseann Zarasua <rzarasua@saugususd.org>

Sent: Monday, February 04, 2019 2:23 PM

To: Palm, Kara

Subject: EXTERNAL: Re: Follow up on Bouquet Canyon Questionnaire

Hello Kara,

Below are the answers to you questionnaire. Please let me know if you require additional information.

1. Campus that would serve the students and their capacity:

   Plum Canyon – current enrollment 706; capacity 825

   Highlands – current enrollment 352; capacity 775

2. Current student generation factors for new developments:

   The factors are based on the projection of applying the student generation rates for residential developments over the past 5 years of a type similar to that of the future units either in the school district or in the city or the county in which the school district is located.

   Student generation rates for single family detached: .4791

   Student generation rates for single family attached units: .4601

   Student generation rates for multi-family units: .2710

3. There are plans to expand the Plum Canyon school site. The project would not created the need for expanding or creating new facilities. The Plum Canyon school site is already planned for expansion and Highlands is running below capacity.

4. Yes, Saugus USD has a developer impact fee program.

   - To finance construction or reconstruction of school facilities needed to accommodate students coming from new developments, the Saugus Governing Board has established the collection of developer fees on residential, commercial, and industrial construction within the district.

- Level II Fees are charged for residential construction to mitigate the the financial impacts from new developments. The current Level II developer fee rate is $3.24 per square foot.

- Developers also have the option of entering into a mitigation agreement with district. The Fair Share School Impact Mitigation Payment is based on an annual analysis. The current 2019 Fair Share School Mitigation Payment without a notice of assigned funds is: SFA is $14,051.22 per unit and MFA is $7,784.51 per unit. The current 2019 Fair Share School Mitigation Payment with a notice of assigned funds is: SFA is $13,680.25 per unit and MFA is $6,930.81 per unit.
- Developers also have the option to request the Governing Board to from a Community Facilities District (CFD) to mitigate fees.

Thank you,

Roseann Zarasua, MBA

Director of Fiscal Services

Saugus Union School District

661-294-5300 x.5159

The Saugus Union School District in partnership with the home and community is committed to excellence in elementary education.

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On Mon, Feb 4, 2019 at 9:36 AM Palm, Kara <Kara.Palm@mbakerintl.com> wrote:

> Good Morning Roseanne,

I am just following up on the information that I sent last week regarding the Bouquet Canyon project. If there is any additional information that you need to respond to the questionnaire, please do not hesitate to contact me.

Thanks,

Kara

Kara Palm |Project Manager | Michael Baker International
3760 Kilroy Airport Road, Ste. 270 | Long Beach, CA 90806 | [m] 619.548.3968
kara.palm@mbakerintl.com | www.mbakerintl.com

From: Karen Bladen <kbladen@hartdistrict.org>
Sent: Wednesday, February 20, 2019 8:35 AM
To: Palm, Kara; HNGUYEN@santa-clarita.com
Subject: EXTERNAL: Bouquet Canyon Residential Project Environmental Impact Report
Attachments: Chart of Impact from Bouquet Canyon Project.pdf

Good morning,

Per your request for information, the William S. Hart Union High School District (District) is providing the following responses to your questions regarding the impacts that the above Project would have on the District.

The campuses that would most likely serve the students from this Project are Arroyo Seco Junior High School and Saugus High School. The attached chart contains the District's most current Student Generation Rates, the associated projected impact from the Project on the District and the current and projected enrollments.

As the "Impacted Schools" chart indicates, the District would need to create additional classroom capacity for the projected additional students.

The District does have a developer fee program and will be starting discussions with the developer to mitigate the impact from the Project. The discussion could include entering into a Mitigation Agreement to provide funding to the District to offset the costs to provide capacity for the new students from the Project.

If you have any questions, or need further information, please feel free to contact me.

Kind Regards,

Karen Bladen
--
Karen M. Bladen
Supervisor of Accounting
Facilities / Operations Department
Wm. S. Hart UHSD
21380 Centre Pointe Parkway
Santa Clarita, CA 91350
661-259-0033 Ext. 286
661-287-1984 (Fax)
kbladen@hartdistrict.org

Student Generation Rates[1]

School Level	Single Family Detached (SFD) SGR	Single Family Attached (SFA) SGR	Multifamily (MF) SGR
Junior High School	0.0962	0.0941	0.0892
High School	0.1941	0.1568	0.2102
Total	**0.2903**	**0.2509**	**0.2994**

[1] Student generation rates calculated in WSHUHSD's 2018 School Facilities Needs Analysis (SFNA) dated April 12, 2018.

Boquet Canyon Development

Home Type	Units	SGR Classification	Junior High School Students Generated	High School Students Generated
Single Family	45	SFD	4	9
Bungalows	102	SFA	10	16
Row Homes	132	SFA	12	21
Motor Courts	90	SFA	8	14
Town Homes	92	SFA	9	14
Total	**461**	**N/A**	**43**	**74**

Impacted Schools

Students	Arroyo Seco Junior High School	Saugus High School
Current Enrollment	1,328	2,484
Boquet Canyon	43	74
Total	**1,371**	**2,558**
Current Capacity	1,200	2,500
Surplus/(Shortage) of Capacity	**(171)**	**(58)**
Unhoused Boquet Canyon Students[1]	43	58
Classroom Capacity[2]	27	27
Additional Classrooms Needed	**1.6**	**2.1**

[1] Represents the number of unhoused students from Boquet Canyon development only.

[2] Based on State loading standards for Junior High School and High School classrooms.

Appendix I:
Correspondence with Public Services and Utility Agencies

Correspondence with SCV Water

SCV WATER

May 7, 2019

City of Santa Clarita
Planning Department
Attn: Hai Nguyen, Associate Planner
23920 Valencia Boulevard, Suite 302
Santa Clarita, CA 91350

Re: Notice of Preparation for the Draft Environmental Impact Report for Proposed Bouquet Canyon Residential Development (Master Case No. 18-089)

Dear Mr. Nguyen:

In response to your September 24, 2018 letter to Matt Stone, regarding the Bouquet Canyon Residential Project, we have the following responses to your questions:

The 2015 Urban Water Management Plan incorporated population and water demands projections based on the City's and Counties' One Valley One Vision general plan that are located within the boundary of Santa Clarita Valley Water Agency. As your letter states the planned land use is consistent with City General Plan and zoning designations and lies within SCV Water's service area. The water demands were therefore covered in the 2015 UWMP. The UWMP concluded that there is sufficient water to meet all anticipated water demands through buildout, estimated to occur in 2050. Given these conditions, no additional water entitlements will be required for the project.

Water Demand estimates incorporated in the UWMP for single family and multi-family units are shown in the table below:

Land Use	# of Units	Unit	Duty Factor (GPD)	Duty Factor (AFY)	Demand (GPD)	Demand (AFY)
Single Family Residential <6000sf (indoor use)	197	each	708.5	0.7936	139574.5	156.3
Single Family Residential (Bed>3)	23	each		0.0000	0.0	0.0
Multi-Family 2/2 AT/DT	13	each	306.72	0.3436	3987.4	4.5
Multi-Family (Bed>2)	156	each	306.72	0.3436	47848.3	53.6

We have estimated the landscape irrigation acreage from the Irrigated Landscape Area Plan prepared by Urban Arena. All irrigation design will need to be in accordance with DWR's Chapter 2.7 Model Water Efficient Landscape Ordinance, which became effective on December 1, 2015.

Land Use	# of Units	Unit	Duty Factor (GPD)	Duty Factor (AFY)	Demand (GPD)	Demand (AFY)
Parks	1.65	Acres	3869.28	4.3342	6384.3	7.2
Manufactured Slopes	25.84	Acres	1933.92	2.1663	49972.5	56.0
Public Open Space	3.31	Acres	3869.28	4.3342	12807.3	14.3
Parkway	1.93	Acres	3869.28	4.3342	7467.7	8.4
Private Yard	4.84	Acres	3869.28	4.3342	18727.3	21.0
Stormwater Management	3.87	Acres	1933.92	2.1663	7484.3	8.4
EVA	0.06	Acres	3869.28	4.3342	232.2	0.3
Pool	2	each	1949.76	2.1840	3899.5	4.4

The total water demand for the Bouquet Canyon Project is estimated to be 334.4 AF/year during an average rainfall year. We estimate the water demand to be 10% higher in single drought years, for a total of 367.84 AF/year.

At this time, SCV Water does not anticipate any recycled water will be available to serve the proposed development.

To mitigate potential impacts on existing water utility users the project must pay facility capacity fees.

Points of connection are located along the south side of Bouquet Canyon Road, in the two areas where the new layout of the roadway is proposed to be tied to the existing road location.

If you have any questions or comments, please contact Rick Vasilopulos, Associate Water Resources Planner, or myself at (661) 297-1600.

Sincerely,

Dirk Marks
Director of Water Resources

cc: Steve Cole, Assistant General Manager

Appendix I:
Correspondence with Public Services and Utility Agencies

Correspondence with Los Angeles County Sheriff's Department

Hai Nguyen

From: Castro, Maynora G. <MGCastro@lasd.org>
Sent: Tuesday, October 30, 2018 3:26 PM
To: Hai Nguyen
Subject: LASD Response for Bouquet Canyon Residential Project EIR
Attachments: LASD Response SCV Memo 181023 (Executed).pdf

Mr. Nguyen-

The Los Angeles County Sheriff's Department (Department) provides the attached information as a response to a Request to assist in the preparation of an Environmental Impact Report for the Bouquet Canyon Residential Project (Project). The proposed Project would develop 461 housing units on approximately 57 acres of undeveloped land in the Bouquet Canyon area. The proposed Project also includes the closure of a portion of Bouquet Canyon Road and the construction of a new alignment of the same road.

The proposed Project is located within the service area of the Santa Clarita Valley Sheriff's Station (Station). Accordingly, the Station reviewed the Request and authored the attached responses (see correspondence dated October 25, 2018, from Captain Robert J. Lewis). Originals to follow via regular mail with a cover letter from FPB Director, Tracey Jue. Thank you for your patience.

Should you have any questions, please let me know.

Thank you.

May

Maynora G. Castro
Departmental Facilities Planner II
Los Angeles County Sheriff's Department
Facilities Planning Bureau
4700 Ramona Boulevard
Sherman Block Building, 4th Floor
Monterey Park, California 91754
(323) 526-5578
mgcastro@lasd.org

Los Angeles County Sheriff's Department

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OFFICE OF THE SHERIFF

COUNTY OF LOS ANGELES

HALL OF JUSTICE

JIM MCDONNELL, SHERIFF

October 31, 2018

Hai Nguyen, Associate Planner
City of Santa Clarita
Community Development Department
23920 Valencia Boulevard, Suite 302
Santa Clarita, California 91355

Dear Mr. Nguyen:

REQUEST FOR INFORMATION
PREPARATION FOR AN ENVIRONMENTAL IMPACT REPORT
BOUQUET CANYON RESIDENTIAL PROJECT

The Los Angeles County Sheriff's Department (Department) provides the attached information as a response to a Request to assist in the preparation of an Environmental Impact Report for the Bouquet Canyon Residential Project (Project). The proposed Project would develop 461 housing units on approximately 57 acres of undeveloped land in the Bouquet Canyon area. The proposed Project also includes the closure of a portion of Bouquet Canyon Road and the construction of a new alignment of the same road.

The proposed Project is located within the service area of the Santa Clarita Valley Sheriff's Station (Station). Accordingly, the Station reviewed the Request and authored the attached responses (see correspondence dated October 23, 2018, from Captain Robert J. Lewis).

Should you have any questions regarding this matter, please contact me, at (323) 526-5657, or your staff may contact Ms. Maynora Castro, at (323) 526-5578.

Sincerely,

JIM McDONNELL, SHERIFF

Tracey Jue, Director
Facilities Planning Bureau

SH-AD-32A (8/17)

COUNTY OF LOS ANGELES

SHERIFF'S DEPARTMENT

"A Tradition of Service Since 1850"

DATE: October 23, 2018
FILE NO:

OFFICE CORRESPONDENCE

FROM: ROBERT J. LEWIS, CAPTAIN
SANTA CLARITA VALLEY
STATION

TO: TRACEY JUE, DIRECTOR
FACILITIES PLANNING
BUREAU

SUBJECT: RESPONSE TO REQUEST FOR INFORMATION REGARDING SHERIFF'S FACILITIES AND SERVICES FOR THE PROPOSED BOUQUET CANYON RESIDENTIAL PROJECT ENVIRONMENTAL IMPACT REPORT

The Santa Clarita Valley Sheriff's Station (Station) is providing the following information as a response to a Request received from the City of Santa Clarita (City), dated September 24, 2018, regarding an assistance in the preparation of an Environmental Impact Report, for the Bouquet Canyon Residential Project (Project). The information would be used in assessing the impacts of the proposed Project on the Station's law enforcement services.

The proposed Project include the development of 461 housing units with related infrastructure, open space, trails, recreation, and landscape elements on approximately 57 acres of undeveloped land located next to several residential neighborhoods in the Bouquet Canyon area. The proposed homes would consist of 45 single-family detached units, 102 bungalows, 132 row homes, 90 homes configured in motor courts, and 92 townhomes. The proposed Project also include the closure of a portion of Bouquet Canyon Road and the construction of a new alignment of Bouquet Canyon Road.

The information below is formatted to correspond with the format of the Request:

1. ***Are there specific standards or goals for response times, staffing or other resources that apply to this project and in this area of the city?***

   Target response times are not established by the Department. Rather, the Department generally adheres to the following, widely-accepted industry standard among law enforcement agencies for responding to emergent, priority, and routine calls for service: 10 minutes, 20 minutes, and 60 minutes, respectively.

CONTENTS 10/23 J. Diaz JD NOTED

2. ***Location of the Station that would be primarily providing service to the project area, along with the current staffing resources at that Station. Please provide the average response times, and the types of crimes common in the project area and describe the potential impact the proposed project could have on response times and crime in the area.***

The Santa Clarita Valley Sheriff's Station, located at 23740 Magic Mountain Parkway in Valencia, is the primary law enforcement service provider to the area within which the proposed Project is located.

Various other law enforcement agencies within and beyond the limits of Los Angeles County provide additional law enforcement services and resources to the Department via existing mutual aid agreements.

The Department generally adheres to the following, widely-accepted industry standard among law enforcement agencies for responding to emergent, priority, and routine calls for service: 10 minutes, 20 minutes, and 60 minutes, respectively.

The proposed Project is approximately 7 miles from the Station. The Station's estimated response times for emergent, priority, and routine calls for service received from the proposed Project are 5.7, 13.1, and 63.7 minutes, respectively. (Please note these are approximate time ranges only and could be affected by traffic conditions and the deployment of radio cars when the call for service is received.) Optimal response times for emergent, priority, and routine calls, are 10 minutes, 20 minutes, and 60 minutes, respectively.

The Project is located within the Department's North Patrol Division, and within Reporting District 0640 of the Station's service area. During the reporting period beginning January 1, 2017 and ending December 31, 2017, there were a total of 22 Part I crimes committed in Reporting District 0640, including:

- Murder/non-negligent homicide..... 0 ;
- Forcible rape..... 0 ;
- Robbery..... 1 ;
- Aggravated Assault..... 1 ;
- Burglary..... 3 ;
- Motor vehicle theft..... 1 ;
- Larceny/theft..... 16 ;
- Arson..... 0 .

3. ***Are there any plans to expand or construct new facilities or would the project create the need for expanded or new facilities? If so, please explain.***

   A proposed new facility to replace the Station is currently in the Construction stage.

4. ***Please discuss any concerns the Department may have regarding aspects of the project design, scale, etc. as that affects the Department's ability to maintain an adequate level of service in the project area.***

   The Station itself, including our secured parking area, has operated above-capacity for several years. The addition of sworn personnel to improve our service ratio to industry standards will exacerbate the Station's existing space deficiencies.

   The Station is currently understaffed and operates above capacity. Assigning additional personnel to the Station to meet an acceptable service ratio will exacerbate the current shortage of space and attendant assets. Any expansion of the Station, or construction of new facilities, should not only account for the current shortage, but should also accommodate additional personnel and assets that will become necessary as our service area continues to experience growth and intensification of land uses.

5. ***Additional information that you feel should be considered in relation to the assessment of impacts to Station's resources and level of service to the project area.***

   The Department generally prescribes to the principles of Crime Prevention Thru Environmental Design (CPTED). The goal of CPTED is to reduce opportunities for criminal activities by employing physical design features that discourage anti-social behavior, while encouraging the legitimate use of the site. The overall tenets of CPTED include defensible space, territoriality, surveillance, lighting, landscaping, and physical security. With advanced notice, Station personnel can be available to discuss CPTED with the Project developer.

Thank you for including the Station in the environmental review process for the proposed Project. Should you have any questions of the Station regarding this matter, please feel free to contact Operations Lieutenant Justin Diez at 661-799-5102.

RJL:JRD

Nichols, Randy

From: Castro, Maynora G. <MGCastro@lasd.org>
Sent: Wednesday, May 08, 2019 11:45 AM
To: Hai Nguyen
Cc: Justin Diez - LASD; Wang, Meghan Y.; Gulley, Dale M.
Subject: RE: Bouquet Canyon Residential Project NOP follow up

Hello, Hai-

It is a new 46,552 square-foot Sheriff Station building with a maintenance building of 4,165 SF and a helipad, that would service the Santa Clarita's current approximate population of 293,000 residents.
This new Sheriff's Station building will basically replace the current building at 23640 Magic Mountain.

May

From: Hai Nguyen [mailto:HNGUYEN@santa-clarita.com]
Sent: Wednesday, May 8, 2019 11:23 AM
To: Castro, Maynora G. <MGCastro@lasd.org>
Cc: Diez, Justin R. <JRDiez@lasd.org>; Wang, Meghan Y. <m2ywang@lasd.org>; Gulley, Dale M. <DMGulley@lasd.org>
Subject: RE: Bouquet Canyon Residential Project NOP follow up

May,

Just a follow up question:

What is the size of the Sheriff station expansion and what services/personnel the added space is intended to support?

Thank you!
Hai

_____

Hai Nguyen
Associate Planner
Planning Division
City of Santa Clarita

Phone: (661) 255-4365
Email: hnguyen@santa-clarita.com

From: Castro, Maynora G. [mailto:MGCastro@lasd.org]
Sent: Wednesday, May 08, 2019 10:43 AM
To: Hai Nguyen <HNGUYEN@santa-clarita.com>

Cc: Justin Diez - LASD <JRDiez@lasd.org>; Wang, Meghan Y. <m2ywang@lasd.org>; Gulley, Dale M. <DMGulley@lasd.org>
Subject: FW: Bouquet Canyon Residential Project NOP follow up

Good morning, Hai-
Please see answers to your follow-up questions below in red text color.

Thank you.

May

Maynora G. Castro
Departmental Facilities Planner II
Los Angeles County Sheriff's Department
Facilities Planning Bureau
4700 Ramona Boulevard
Sherman Block Building, 4th Floor
Monterey Park, California 91754
(323) 526-5578
mgcastro@lasd.org

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From: Hai Nguyen [mailto:HNGUYEN@santa-clarita.com]
Sent: Tuesday, May 7, 2019 11:31 AM
To: Castro, Maynora G. <MGCastro@lasd.org>
Subject: Bouquet Canyon Residential Project NOP follow up

Good morning May,

Thanks for sending your response letter for the Bouquet Canyon Residential Project. I've attached your email and letter. Please note that the project has reduced in scope, since the original proposal (the new site plan with calculations is attached). I have a few follow up questions that I was hoping to get answered by you or Operations Lieutenant Justin Diez regarding the expansion of the Sheriff's station:

1. when is the expansion of the existing Sheriff's station is projected to be completed? Projected completion/occupancy is by FEBRUARY 26, 2021.
2. whether that expansion will fully address the existing shortages of sworn personnel to maintain desired levels of service, or No, if we based it on the ratio of 1 deputy per 1000 population. But it will definitely help the existing shortages of sworn personnel.
3. whether this project, either alone, or combined with other projected growth could necessitate additional demand for sworn personnel? Yes, continued growth and intensification of land uses within our service area could necessitate demand for sworn

personnel and will ultimately contribute to significant cumulative impacts on our resources and operations.

Please let me know or feel free to give me a call. Thank you!

Hai

_____

Hai Nguyen
Associate Planner
Planning Division
City of Santa Clarita

Phone: (661) 255-4365
Email: hnguyen@santa-clarita.com
Web: http://www.santa-clarita.com

Appendix J:
Traffic Impact Analysis

Bouquet Canyon Residential EIR
Traffic Impact Analysis

City of Santa Clarita

March 4, 2020

Prepared for:

Bouquet Canyon Project Owner, LLC

Prepared by:

Stantec Consulting Services Inc.

Sign-off Sheet

This document entitled Bouquet Canyon Residential EIR Traffic Impact Analysis was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of Bouquet Canyon Project Owner, LLC (the “Client”).

Prepared by

(signature)

Cathy Lawrence, PE
(949) 923-6064

Reviewed by

(signature)

Maria Morris, PTP
(949) 923-6072

Reviewed by

(signature)

Daryl Zerfass, PE, PTP
(949) 923-6058

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Glossary

ADT	Average Daily Traffic. Generally used to measure the total two-directional traffic volumes passing a given point on a roadway.
ICU	Intersection Capacity Utilization. A measure of the volume to capacity ratio for an intersection. Typically used to determine the peak hour level of service for a given set of intersection volumes.
LOS	Level of Service. A scale used to evaluate circulation system performance based on intersection ICU values or volume/capacity ratios of arterial segments.
Peak Hour	This refers to the hour during the AM peak period (typically 7 AM - 9 AM) or the PM peak period (typically 4 PM - 6 PM) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.
V/C	Volume to Capacity Ratio. This is typically used to describe the percentage of capacity utilized by existing or projected traffic on a segment of an arterial or intersection.

1.0 INTRODUCTION

This report presents the findings of a traffic study conducted to determine the impacts of the proposed Bouquet Canyon Residential project (Project) located in the City of Santa Clarita. This traffic study is prepared in support of the Project's environmental documentation under the California Environmental Quality Act (CEQA) and is consistent with the requirements outlined in the City of Santa Clarita traffic study guidelines.

1.1 PROPOSED PROJECT

The proposed Project is located east of Bouquet Canyon Road and south of Copper Hill Drive in the Saugus community. The location of the Project site is illustrated in **Figure 1-1**. The Project includes the development of a residential community on an approximately 57-acre site. The proposed Tentative Tract Map is divided into approximately 70 lots with a total of 375 dwelling units located within five planning areas. The Project site plan is shown in **Figure 1-2**.

The Project includes a realignment of Bouquet Canyon Road as shown on the General Plan Circulation Element alignment.

The Project site is primarily vacant with one existing single-family residence located on site. The Project site features a Significant Ridgeline, and a portion of the Project site is located in the Federal Emergency Management Agency (FEMA) Flood Zone. The Project site is surrounded by existing single-family residences to the north and west, vacant open space and the Canyon Center commercial center to the south, and Los Angeles County Probation Department property to the east.

The applicant is requesting entitlement for the development of a residential community on an approximately 57-acre site, divided into five planning areas. The following table is a summary of the planning areas, number of units, and types of homes:

Planning Area	Units	Type
PA1	52	Single-family detached
PA1A	12	Single-family detached
PA2	136	Single-family detached
PA3	90	KTGY motorcourt (multi-family attached)
PA4	85	Two-story rowtown
Total	375	
See Figure 1-2 for Planning Area exhibit		

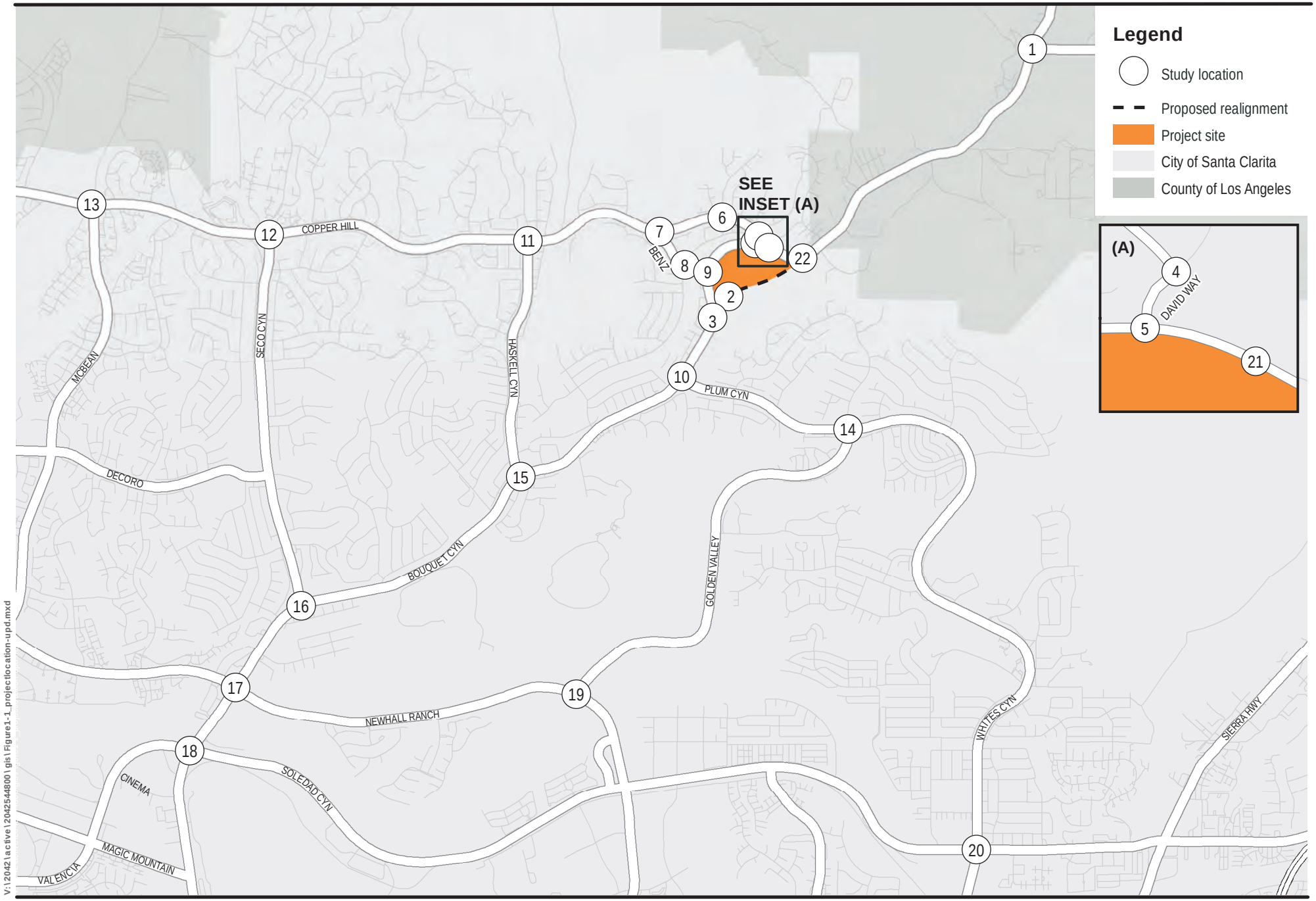

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Figure 1-1
Project Location
1.2

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N

Figure 1-2
Proposed Project Site Plan
1.3

1.2 STUDY AREA

The study area for the roadway network is shown in previously referenced **Figure 1-1**. The study area includes intersections where the proposed Project would generally add 50 or more trips during either the AM or PM peak hour. The analysis includes 20 study intersections, 12 of which are currently signalized, 6 are currently stop-controlled, and 2 are future intersections, as follows:

Intersection	Control Type
1. Bouquet Cyn Rd & Vasquez Cyn Rd	Two-Way Stop
2. Bouquet Cyn Rd & Project Dwy (future)	TBD
3. Old Bouquet Cyn Rd & Bouquet Cyn Rd (future)	TBD
4. David Way & Copper Hill Dr	Two-Way Stop
5. David Way & Bouquet Cyn Rd	Signal
6. Kathleen Ave & Copper Hill Dr	All-Way Stop
7. Benz Rd & Copper Hill Dr	Two-Way Stop
8. Alaminos Dr & Benz Rd	All-Way Stop
9. Bouquet Cyn Rd & Benz Rd	Two-Way Stop
10. Bouquet Cyn Rd & Plum Cyn Rd	Signal
11. Haskell Cyn Rd & Copper Hill Dr	Signal
12. Seco Cyn Rd & Copper Hill Dr	Signal
13. McBean Pkwy & Copper Hill Dr	Signal
14. Golden Valley Rd & Plum Cyn Rd	Signal
15. Haskell Cyn Rd & Bouquet Cyn Rd	Signal
16. Seco Cyn Rd & Bouquet Cyn Rd	Signal
17. Bouquet Cyn Rd & Newhall Ranch Rd	Signal
18. Bouquet Cyn Rd & Soledad Cyn Rd	Signal
19. Golden Valley Rd & Newhall Ranch Rd	Signal
20. Whites Cyn Rd & Soledad Cyn Rd	Signal
21. New Bouquet Cyn & Old Bouquet Cyn East	TBD
22. Project Entrance & Old Bouquet Cyn East	TBD

Cyn = Canyon; Rd = Road; Dwy = Driveway; Dr = Drive; Ave = Avenue

1.3 METHODOLOGY

This traffic study evaluates the proposed Project utilizing the established traffic analysis guidelines of the City of Santa Clarita (See Reference 3 in Chapter 7.0) and Los Angeles County (See Reference 4 in Chapter 7.0). The scenarios analyzed are as follows:

1. Existing Conditions
2. Existing Plus Project
3. Interim Year Cumulative (2028) Conditions Without Project
4. Interim Year Cumulative (2028) Conditions With Project

This analysis addresses both the hypothetical Existing plus Project scenario that assumes immediate buildout of the full Project and the Cumulative Conditions scenario which includes buildout of the Project as well as the related projects in the proximity of the study area.

1.3.1 Project Impact Analysis

The Santa Clarita Valley is a growing area with numerous proposed, approved and pending projects (i.e., "Related Projects") and to forecast the complex interaction of vehicle trips between existing and future land uses, the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) is utilized.

The SCVCTM was developed jointly by the County of Los Angeles Department of Public Works and the City of Santa Clarita and is the primary tool used for forecasting traffic volumes for the Santa Clarita Valley. The SCVCTM has the ability to provide traffic volume forecasts for a long-range setting, which represents buildout conditions (generally considered as year 2035 or later), as well as Interim Year forecasts that are based on a defined list of planned, approved, and pending projects. The SCVCTM is regularly updated with known cumulative projects and the buildout version of the model is based on the currently approved General Plans of the County and City of Santa Clarita.

As noted in the previous section, this traffic study also includes analysis of the hypothetical Existing plus Project scenario, which assumes immediate buildout of the full Project.

1.4 PERFORMANCE CRITERIA

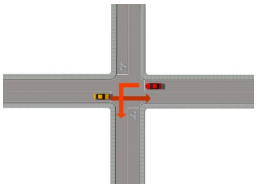
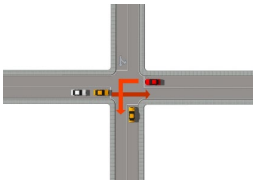
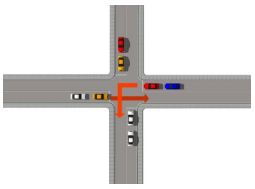
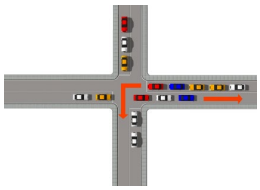
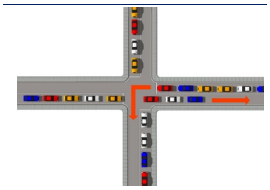
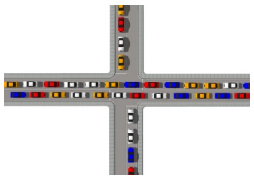
1.4.1 Arterial Roadways and Intersections

Defined performance criteria are utilized to determine if a proposed Project would cause a significant impact. Performance criteria are typically based on two primary measures. The first is "capacity", which establishes the vehicle carrying ability of a roadway, and the second is "volume." The volume measure is either a traffic count (in the case of existing volumes) or a forecast for a future point in time. For arterial roadways in an urban or suburban setting, the intersection of two roadways will typically be the limiting factor in regard to the overall capacity of the roadway network.

Methodology outlined in the Highway Capacity Manual, Sixth Edition (HCM 6th Edition) produces estimates of average vehicle delay as a function of intersection capacity and the volume of traffic passing through the intersection. From this a corresponding level of service (LOS) is defined. Traffic LOS is designated "A" through "F" with LOS A representing free flow conditions and LOS F representing severe traffic congestion. Traffic flow quality for each LOS is described in **Table 1-1** for signalized intersections.

For intersections located in Los Angeles County, peak hour volumes and capacities are compared by means of intersection capacity utilization (ICU) values for signalized intersections. ICU values and their corresponding LOS is also shown in Table 1-1.

Table 1-1 Level of Service Descriptions – Intersections

LOS	Traffic Flow Description	Delay (sec/veh)	ICU
A	 Minimal or no vehicle delay	0 – 10.0	0.00 – 0.60
B	 Slight delay to vehicles	10.1 – 20.0	0.61 – 0.70
C	 Moderate vehicle delays, traffic flow remains stable	20.1 – 35.0	0.71 – 0.80
D	 More extensive delays at intersections	35.1 – 55.0	0.81 – 0.90
E	 Long queues create lengthy delays	55.1 – 80.0	0.91 – 1.00
F	 Severe delays and congestion	Above 80.0	Above 1.00

Source: HCM 6th Edition, Transportation Research Board, National Research Council
The indicated values of delay are applicable to signalized intersections

LOS = Level of service
sec/veh = seconds per vehicle
ICU = Intersection Capacity Utilization

Table 1-2 summarizes the ranges of volume/capacity (V/C) values for arterial roads and vehicle delay for intersections that correspond to LOS A through F. The ranges are those defined in the HCM 6th Edition and are used by the City of Santa Clarita for estimating intersection LOS.

Table 1-2 Intersection Delay Level of Service Ranges

LOS	Roadway V/C Ranges	Highway Capacity Manual (HCM) Average Delay (sec/veh) for Signalized Intersections	HCM Average Delay (sec/veh) for Stop-Controlled Intersections
A	0.00 – 0.60	0 – 10	0 – 10
B	0.61 – 0.70	10 – 20	10 – 15
C	0.71 – 0.80	20 – 35	15 – 25
D	0.81 – 0.90	35 – 55	25 – 35
E	0.91 – 1.00	55 – 80	35 – 50
F	Above 1.00	Above 80	Above 50
Sources: Congestion Management Program of Los Angeles County; HCM 6th Edition			

In establishing delay-based performance criteria, there are certain items that need to be addressed to obtain suitable delay estimates and relate them to LOS. For instance, while average daily traffic (ADT) is a useful measure to show general levels of traffic on a facility and to provide data for other related aspects such as noise and greenhouse gas (GHG) emissions, congestion is largely a peak hour or peak period occurrence and ADT does not reflect peak period conditions very effectively. Because of this, ADT is not used here as the basis for capacity evaluation but instead this evaluation focuses on those parts of the day when such congestion can occur, specifically the AM and PM peak hours.

For the arterial system, the peak hour is the accepted time period used for impact evaluation and a number of techniques are available to define intersection LOS. Both the level of delay and the LOS are used in determining impact significance. Certain LOS values are deemed unacceptable by the City, and increases in delay that cause or contribute to the LOS being unacceptable are defined as a significant impact. These definitions and procedures are established by individual local jurisdictions, such as the City of Santa Clarita.

Levels of service for arterial roadway intersections are determined based on operating conditions during the AM and PM peak hours and the geometric configuration of the intersection. Synchro signal timing and analysis software was used to calculate the intersection delay and LOS. For the signalized study intersections, the City's timing settings, including cycle length, splits, and offsets, were used in the analysis under existing and future conditions. The result of these calculations is an estimate of average vehicle delay at the intersection. The delay calculation methodology utilized by Synchro is based on the intersection capacity analysis methodology outlined in the HCM 6th Edition.

The HCM 6th Edition calculation methodology and associated LOS performance standards used in this analysis for intersections located in the City of Santa Clarita are summarized in **Table 1-3**. For locations in LA County, the ICU methodology and associated LOS performance standard is also shown in **Table 1-3**.

Table 1-3 Arterial Intersection Performance Criteria

Delay Methodology (City of Santa Clarita Intersections)

Calculation Methodology

Level of service based on "average vehicle delay" calculated as follows:

- Synchro/HCM delay-based intersection methodology for traffic signals
- HCM 6th Edition delay-based intersection methodology for stop sign control

Performance Standard

Level of Service D defined as follows:

- average delay to not exceed 55 seconds for signalized intersections
- average delay to not exceed 35 seconds for stop sign controlled intersections

Significant Impact Thresholds

An intersection is considered to be significantly impacted if the Project would:

- Worsen an intersection maintained by the City of Santa Clarita from LOS D or better to LOS E or F
- Cause the following increase in delay at an intersection maintained by the City of Santa Clarita that operated (with the Project) at LOS D or worse
  - LOS D with the Project: more than 4-second increase in delay is significant
  - LOS E or F with the Project: more than 2-second increase in delay is significant

ICU Methodology (LA County Intersections)

Calculation Methodology

Level of service to be based on peak hour intersection capacity utilization (ICU) values calculated as follows:

- 1,600 vehicles/hour/lane for through lanes, right-turn lanes, and single left-turn lanes
- 2,880 vehicles/hour/lane for dual left-turn lanes (total of both lanes)
- 0.10 Clearance Interval

Performance Standard

An intersection is considered to be significantly impacted if compared to the ICU under existing conditions scenario, the ICU in the with-project scenario increases the ICU by the following

County Thresholds:	Pre-Project ICU	Project Difference
	0.71 - 0.80 (LOS C)[1]	greater than or equal to 0.04
	0.81 - 0.90 (LOS D)	greater than or equal to 0.02
	0.91 or more (LOS E & F)	greater than or equal to 0.01

[1]Note: The County guidelines do not address situations where pre-project conditions are less than 0.71. In that situation, County staff has interpreted the guidelines to mean that an increase resulting in a with-project condition of 0.75 or more is considered significant. The interpretation is based on the following scenario, which is addressed by the guidelines: 0.71 (pre-project) + 0.04 (project difference) = 0.75 and is a significant impact.

Abbreviations:
HCM – Highway Capacity Manual
LOS – Level of Service

1.4.2 Freeways

The Project site is not located adjacent to area freeways. While distance alone does not dictate whether freeway impacts should be evaluated, destinations between the Project and the freeways and multiple available routes contribute to the reduction in Project traffic before it reaches the freeways. Peak hour traffic from the Project diminishes to fewer than 50 trips by the time it reaches the freeways (see Section 3.2 for discussion of Project distribution). Hence, analysis of freeway ramp or mainline impacts are not included in this analysis.

2.0 TRANSPORTATION SETTING

This chapter describes the transportation setting for the traffic analysis. Existing conditions are first discussed, followed by a discussion of the derivation of future traffic volumes and the planned roadway improvements adjacent to the Project site.

2.1 EXISTING CONDITIONS

The following section describes existing traffic conditions in the study area. It includes a description of the study area roadway system, existing traffic volumes and corresponding levels of service as defined by the performance criteria outlined in the previous chapter.

2.1.1 Existing Roadway System

The proposed Project is located on the east side of the current alignment of Bouquet Canyon Road south of Copper Hill Drive. The existing roadway system is shown in **Figure 2-1**.

Bouquet Canyon Road is oriented generally in a southwest to northeast direction in the study area, beginning at Magic Mountain Parkway to the southwest and heading into the Angeles National Forest to the northeast, with the exception of a section that loops to the north and back to the south around the significant grade change on the undeveloped Project site. Bouquet Canyon Road is designated as a Major Highway south of Plum Canyon Road and a Secondary Highway north of Plum Canyon Road on the City of Santa Clarita General Plan Circulation Map. Bouquet Canyon Road is a four-lane road south of Plum Canyon Road that narrows to two lanes as it loops around the Project site. The two-lane cross-section continues north of the Project site. As part of the Project, Bouquet Canyon Road would be realigned to travel along the eastern edge of the Project, and the original section of Bouquet Canyon Road south of Pam Court would be retained, referred to in this report as Old Bouquet Canyon Road. The speed limit on Bouquet Canyon Road varies between 45 and 50 mph in the study area. Realignment of the roadway and widening to four lanes north of Plum Canyon Road is consistent with the Circulation Element of the General Plan.

Access to the Project vicinity is also provided by Copper Hill Drive to the north and Plum Canyon Road to the south.

Copper Hill Drive begins as Rye Canyon Road near I-5 freeway southwest of the Project site and heads generally north until it veers to the east in the vicinity of McBean Parkway. Copper Hill Drive continues in a generally eastbound direction to the northern boundary of the Project site where it terminates at David Way. Copper Hill Drive provides four lanes with turn lanes at intersections west of Benz Road and two lanes with turn lanes east of Benz Road. Copper Hill Drive is designated as a Major Highway west of Seco Canyon Road and a Secondary Highway east of Seco Canyon Road on the City's Circulation Map. The speed limit is 45 mph in the study area.

Plum Canyon Road intersects Bouquet Canyon Road just south of the Project site and winds southeast of Bouquet Canyon Road. Plum Canyon Road is a Major Highway with four lanes and a speed limit of 45 mph west of Golden Valley Road and six lanes and a speed limit of 50 mph east of Golden Valley Road. South of Heller Circle, Plum Canyon Road becomes Whites Canyon Road.

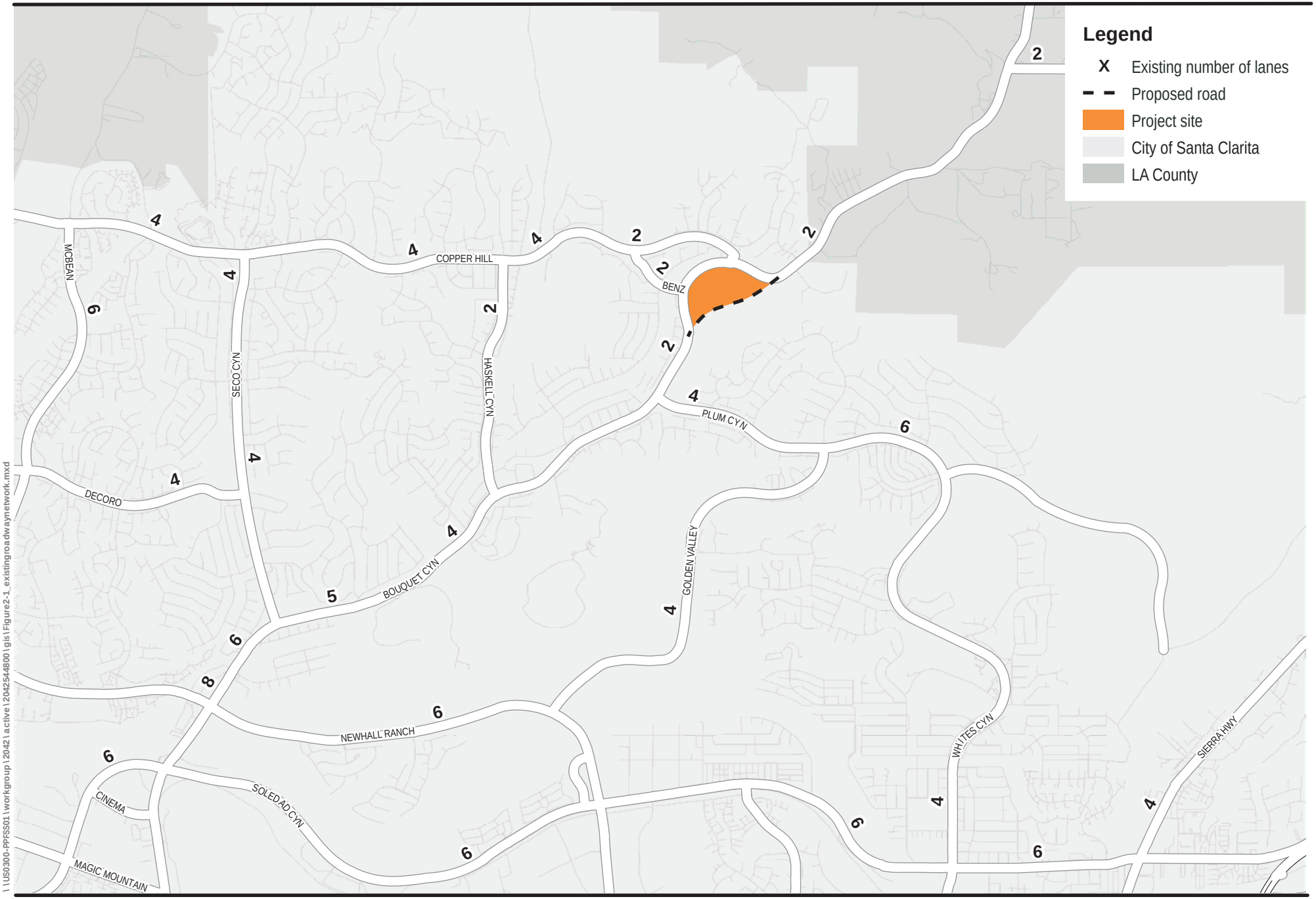


Figure 2-1
Existing Roadway Network
2.2

2.1.2 Existing Traffic Volumes and Levels of Service

Existing conditions (2018) ADT volumes for the study area are provided in **Figure 2-2**. Existing intersection lane configurations are shown in **Figure 2-3** and **Figure 2-4.** Peak hour turning movement volumes are illustrated in **Figure 2-5** and **Figure 2-6** for the AM peak hour and **Figure 2-7** and **Figure 2-8** for the PM peak hour. Traffic count data were collected during the critical AM and PM peak hours in October 2018 throughout the study area. The traffic count data sheets are provided in **Appendix A**.

The results of the LOS analysis for the study area intersections under existing conditions are shown in **Table 2-1.** Both the signalized intersections and stop-controlled intersections in the study area were analyzed using HCM delay methodology. Detailed LOS calculation worksheets are provided in **Appendix B**. The table shows that all the study area intersections currently operate at LOS D or better except for Bouquet Canyon Road at Vasquez Canyon Road, which is operating at LOS F in the AM peak hour, David Way at Bouquet Canyon Road which is operating at LOS F in the PM peak hour, Haskell Canyon Road at Copper Hill Drive which is operating at LOS F in the AM and PM peak hours, and Bouquet Canyon Road at Newhall Ranch Road, which is operating at LOS E in the PM peak hour.

Table 2-1 Intersection Delay and LOS Summary – Existing Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour		Count Date
		Delay (sec/veh)/ ICU	LOS	Delay (sec/veh)/ ICU	LOS	
1. Bouquet Cyn Rd & Vasquez Cyn Rd	Two-Way Stop [1,3]	0.68	B	0.87	D	10/17/18
4. David Way & Copper Hill Dr	Two-Way Stop [1]	10.7	B	12.7	B	10/17/18
5. David Way & Bouquet Cyn Rd	Signal	31.9	C	119.4	F	10/17/18
6. Kathleen Ave & Copper Hill Dr	All-Way Stop [2]	30.4	D	18.1	C	10/17/18
7. Benz Rd & Copper Hill Dr	Two-Way Stop [1]	28.9	D	19.9	C	10/17/18
8. Alaminos Dr & Benz Rd	All-Way Stop [2]	8.0	A	8.1	A	10/17/18
9. Bouquet Cyn Rd & Benz Rd	Two-Way Stop [1]	19.6	C	12.6	B	10/17/18
10. Bouquet Cyn Rd & Plum Cyn Rd	Signal	33.7	C	29.6	C	10/17/18
11. Haskell Cyn Rd & Copper Hill Dr	Signal	292.3	F	217.8	F	10/17/18
12. Seco Cyn Rd & Copper Hill Dr	Signal	38.3	D	28.9	C	10/17/18
13. McBean Pkwy & Copper Hill Dr	Signal	22.5	C	24.6	C	10/17/18
14. Golden Valley Rd & Plum Cyn Rd	Signal	29.6	C	21.6	C	10/17/18
15. Haskell Cyn Rd & Bouquet Cyn Rd	Signal	54.7	D	53.6	D	10/17/18
16. Seco Cyn Rd & Bouquet Cyn Rd	Signal	22.7	C	35.7	D	10/17/18
17. Bouquet Cyn Rd & Newhall Ranch Rd	Signal	44.2	D	58.4	E	10/17/18
18. Bouquet Cyn Rd & Soledad Cyn Rd	Signal	33.4	C	48.5	D	10/17/18
19. Golden Valley Rd & Newhall Ranch Rd	Signal	29.5	C	20.1	C	10/17/18
20. Whites Cyn Rd & Soledad Cyn Rd	Signal	45.8	D	49.7	D	10/17/18

Notes:
[1] Delay represents the highest stop-controlled approach
[2] Delay represents the average for the entire intersection
[3] ICU methodology per LA County Guidelines

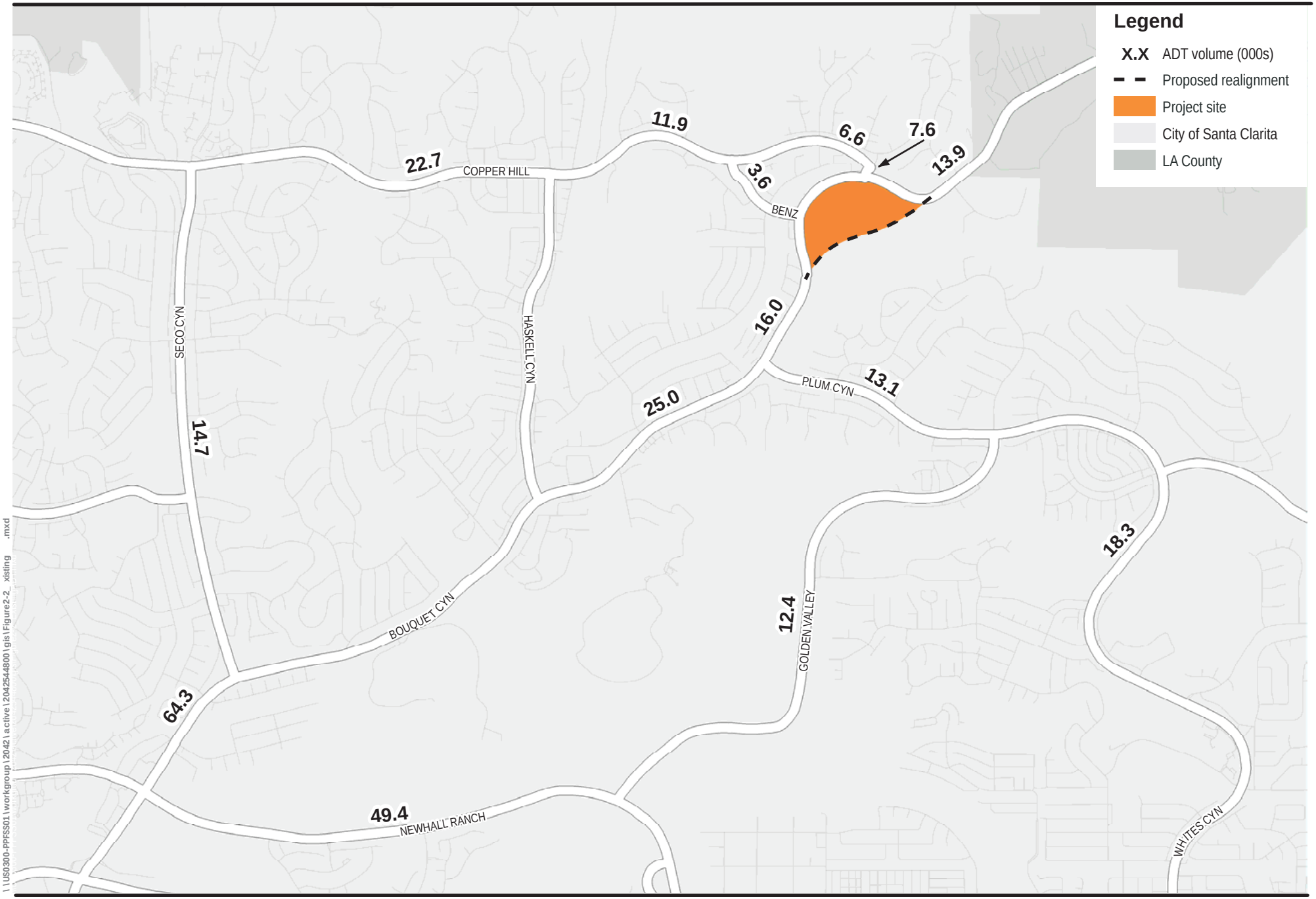
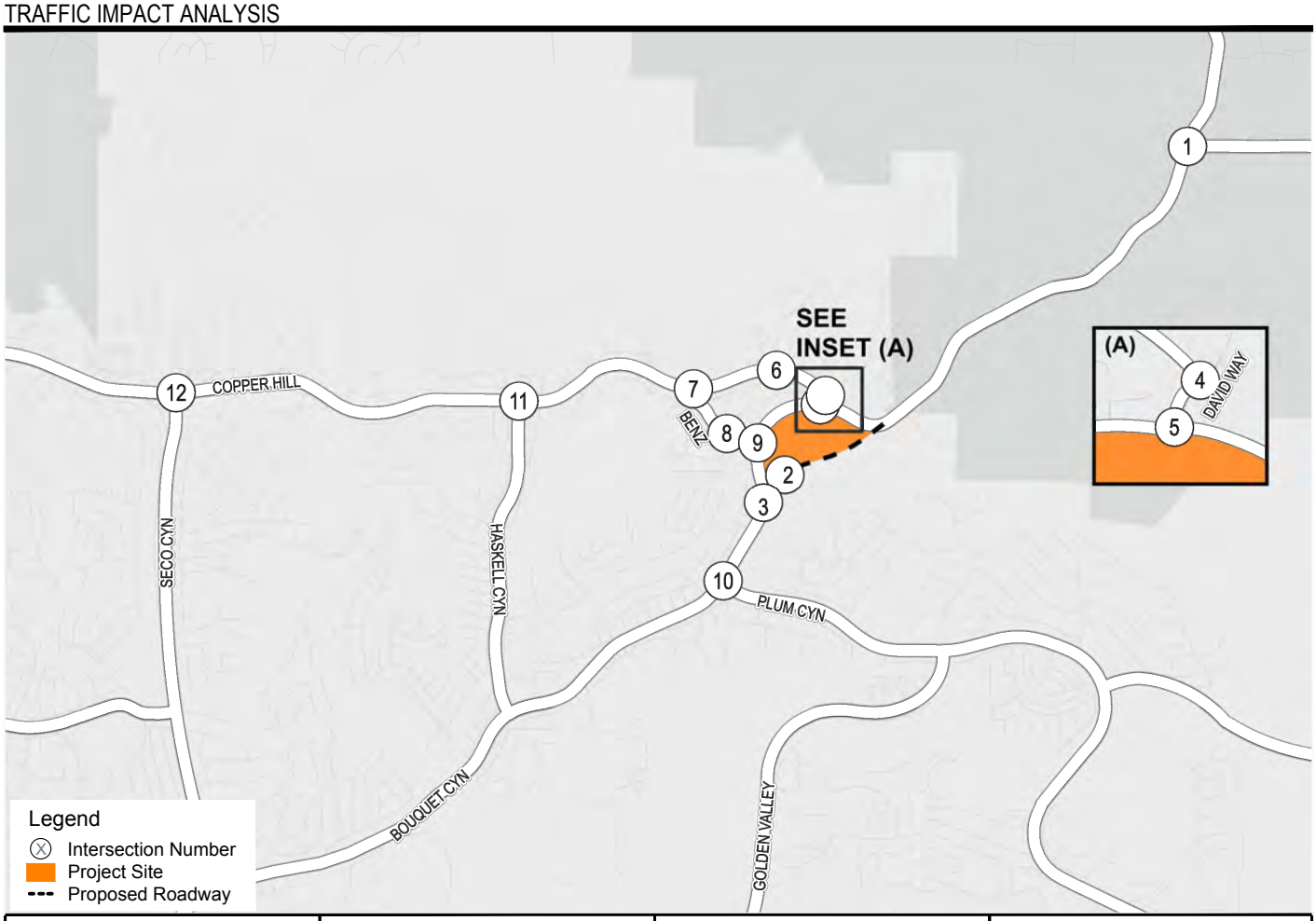


Figure 2-2
Existing ADT Volumes
2.4



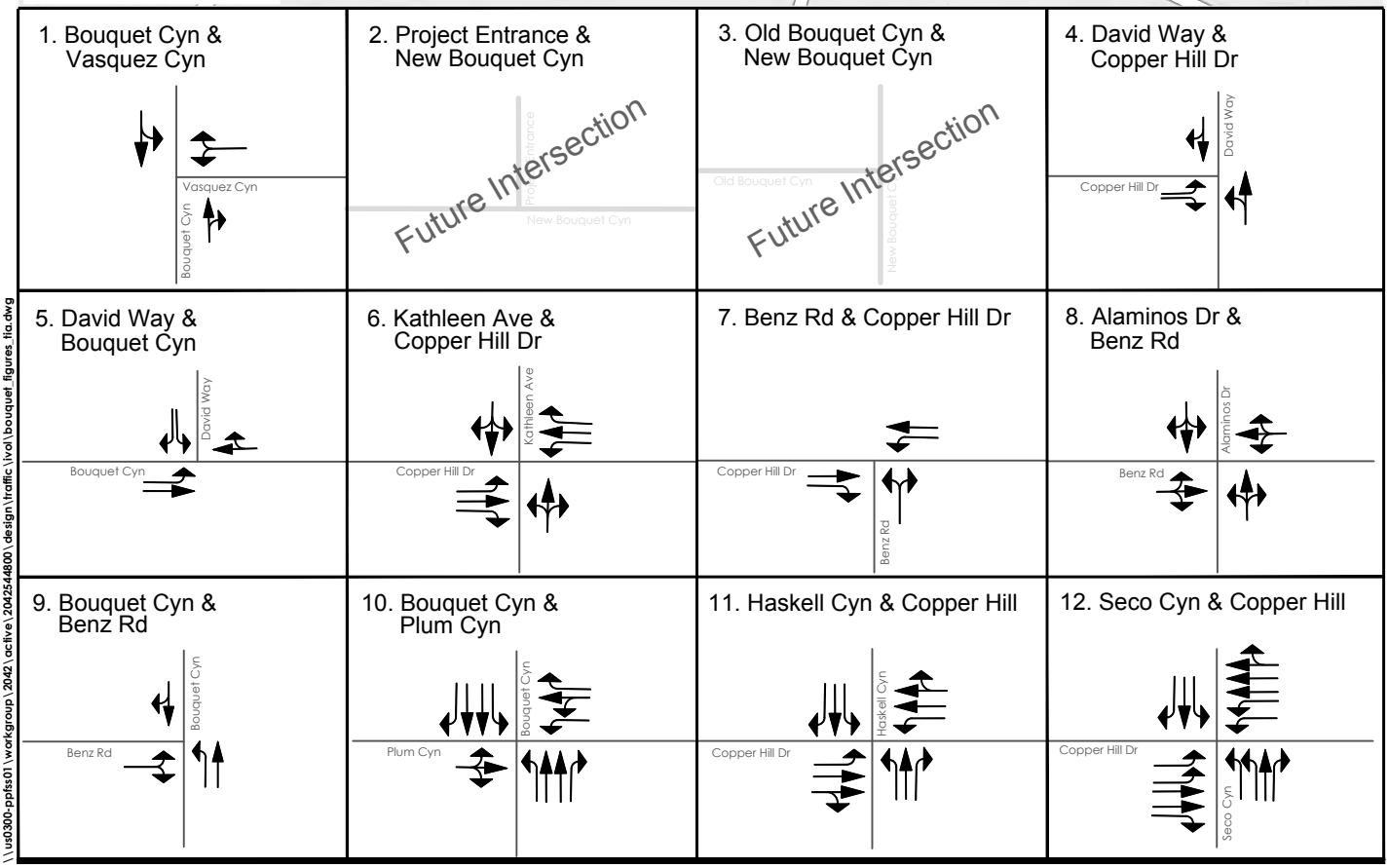


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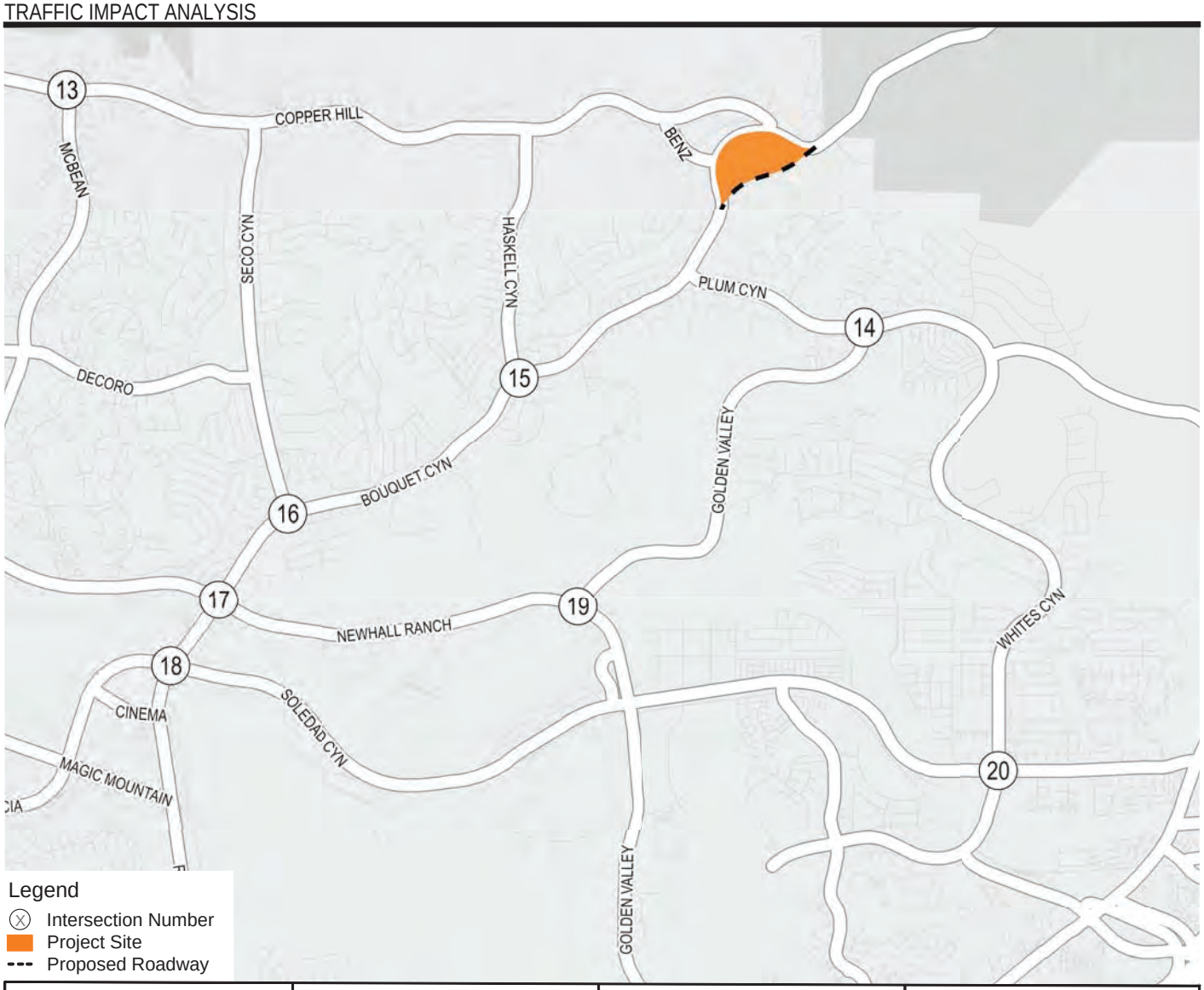
Figure 2-3
Existing Intersection Lane Configurations
Intersections 1-12
2.5



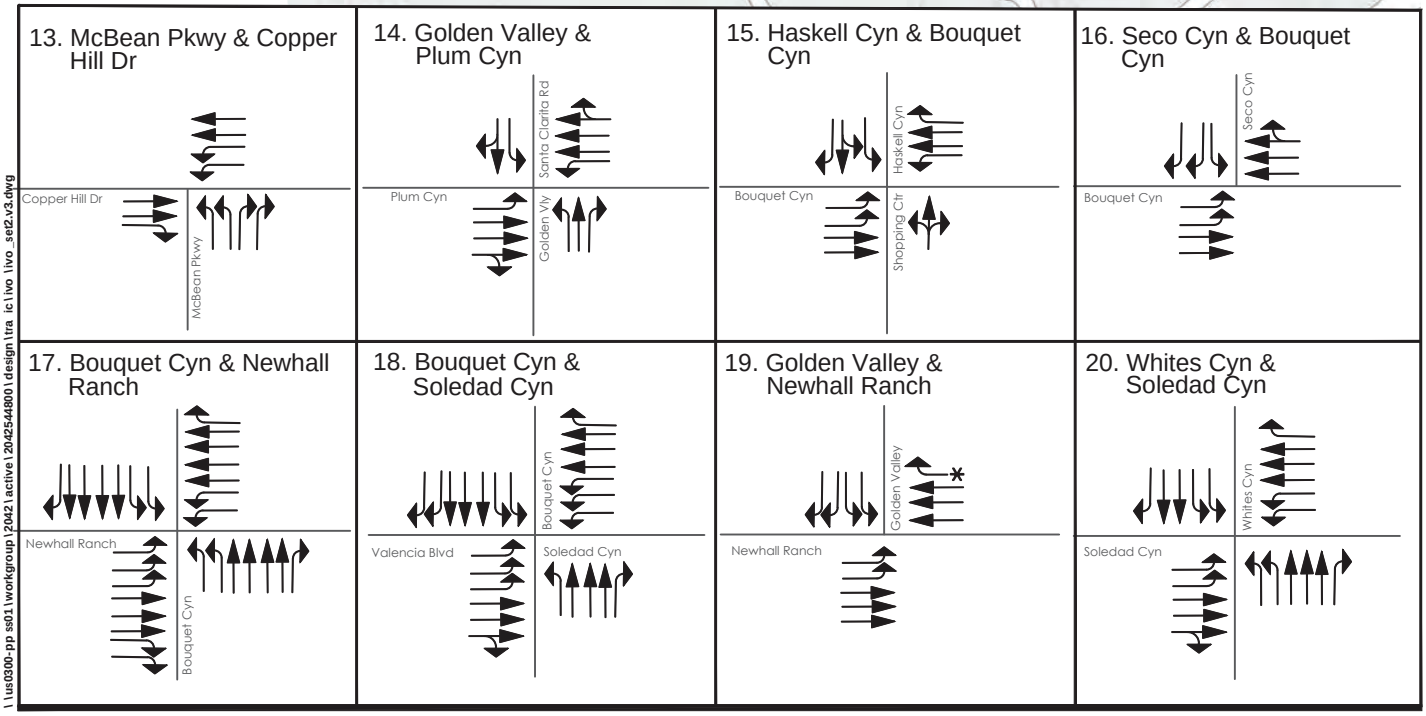


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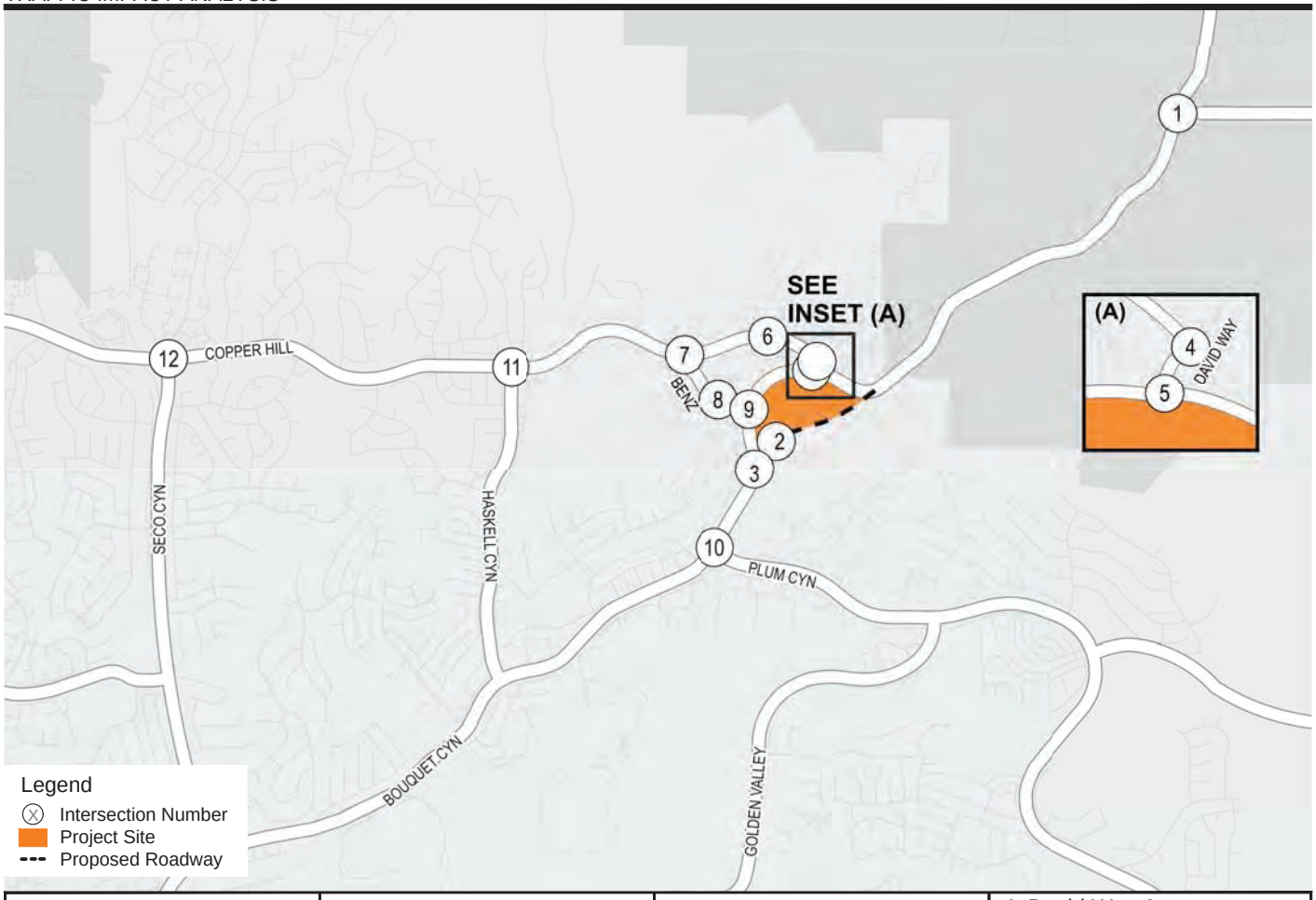
Figure 2-4
Existing Intersection Lane Configurations
Intersections 13-20



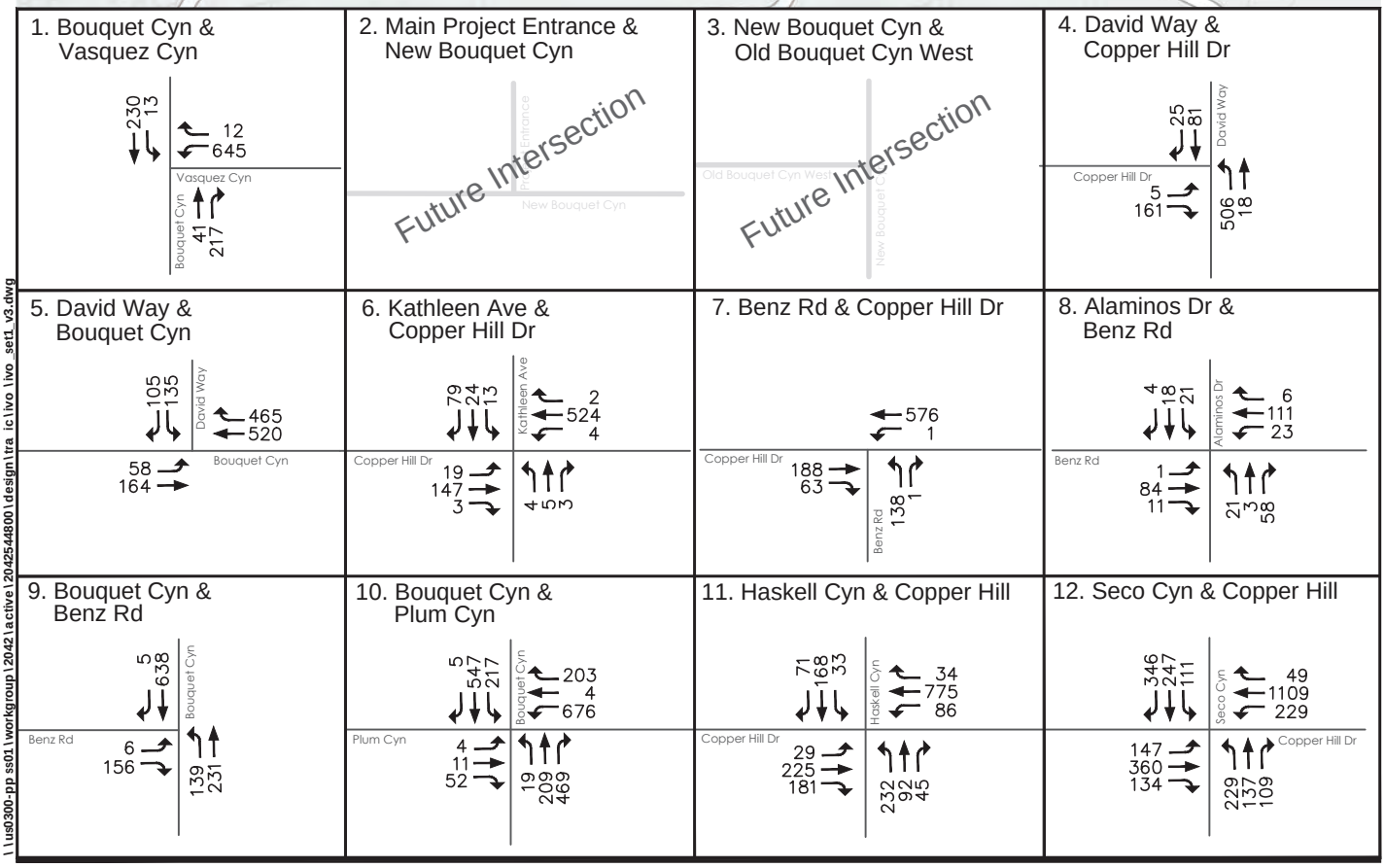


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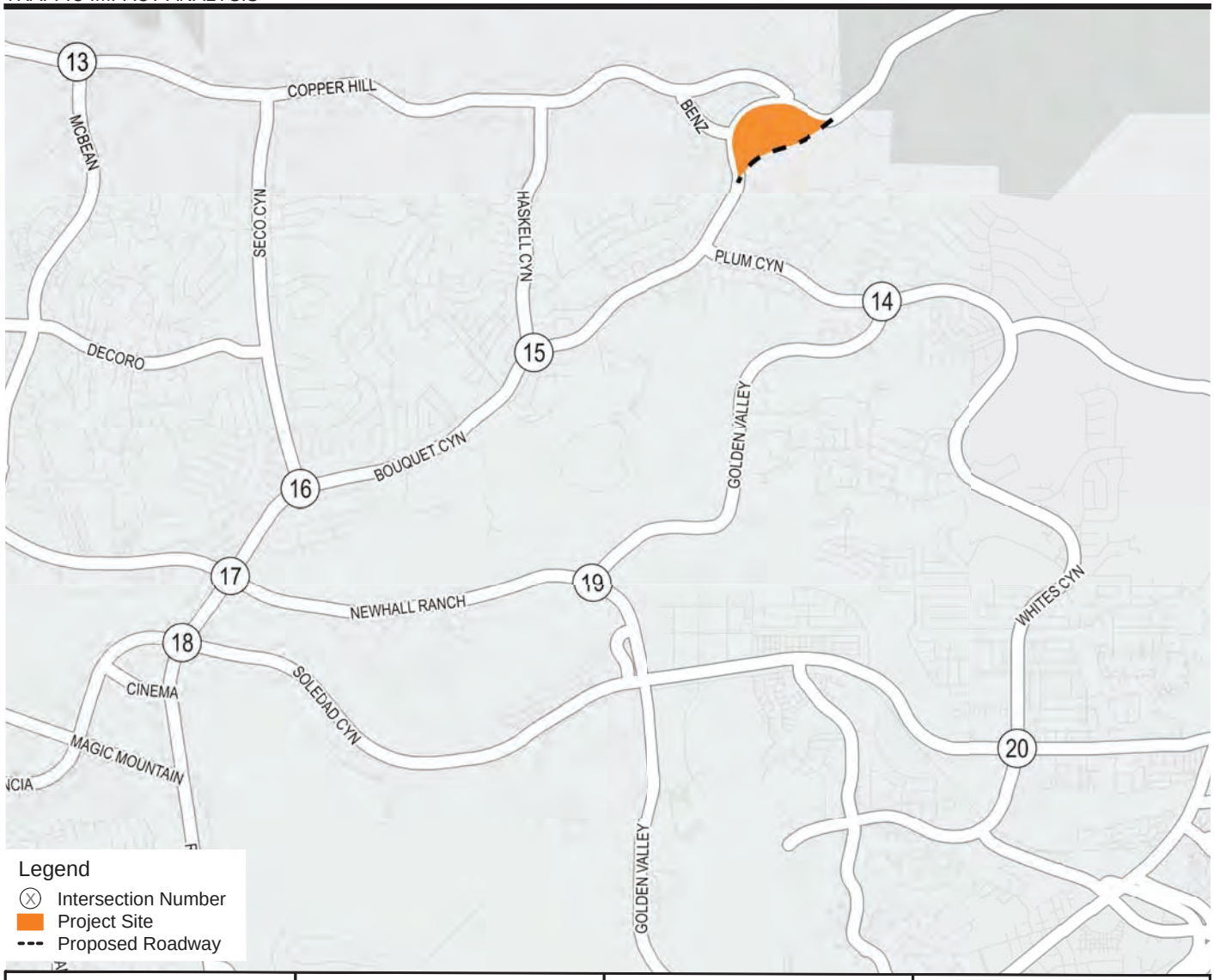
Figure 2-5

Existing AM Peak Hour Volumes - Intersections 1-12



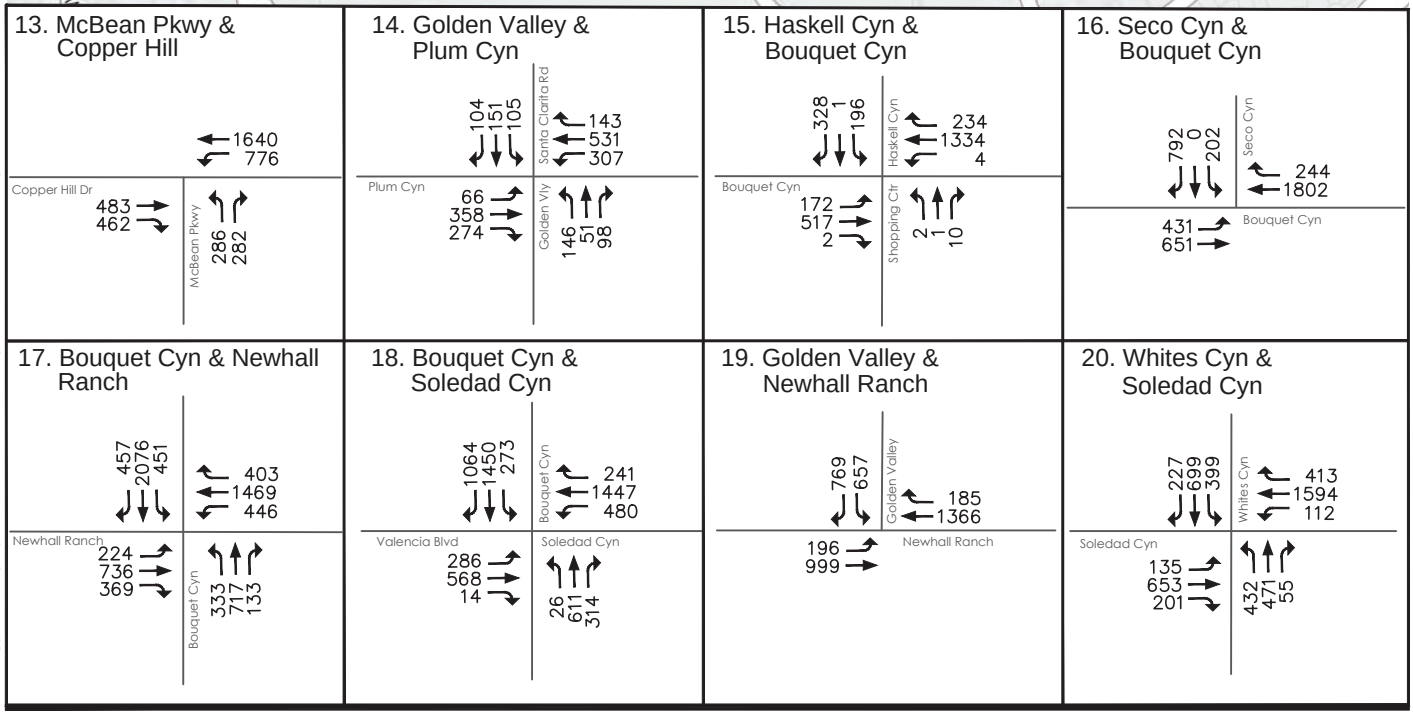


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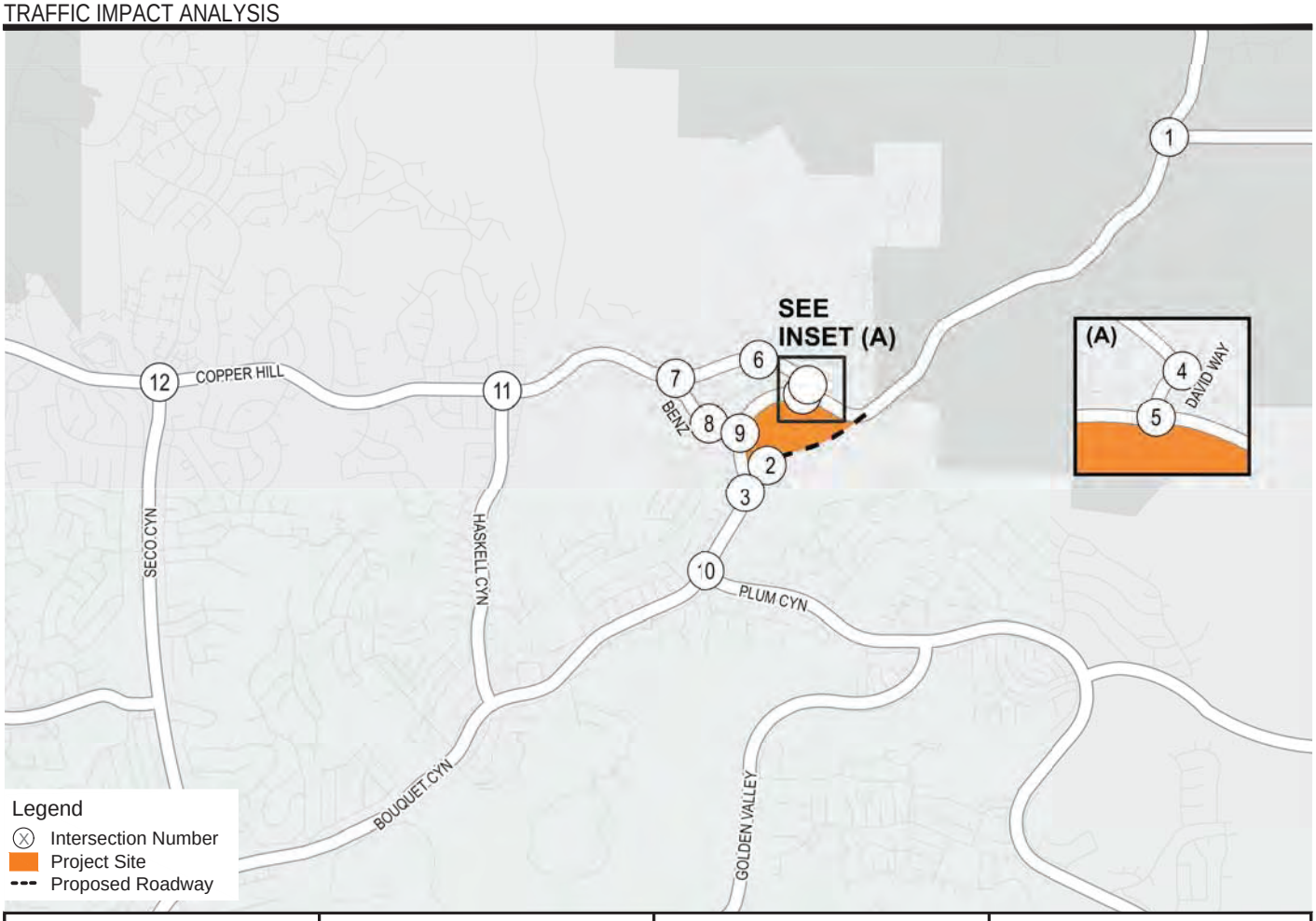
Figure 2-6

Existing AM Peak Hour Volumes - Intersections 13-20



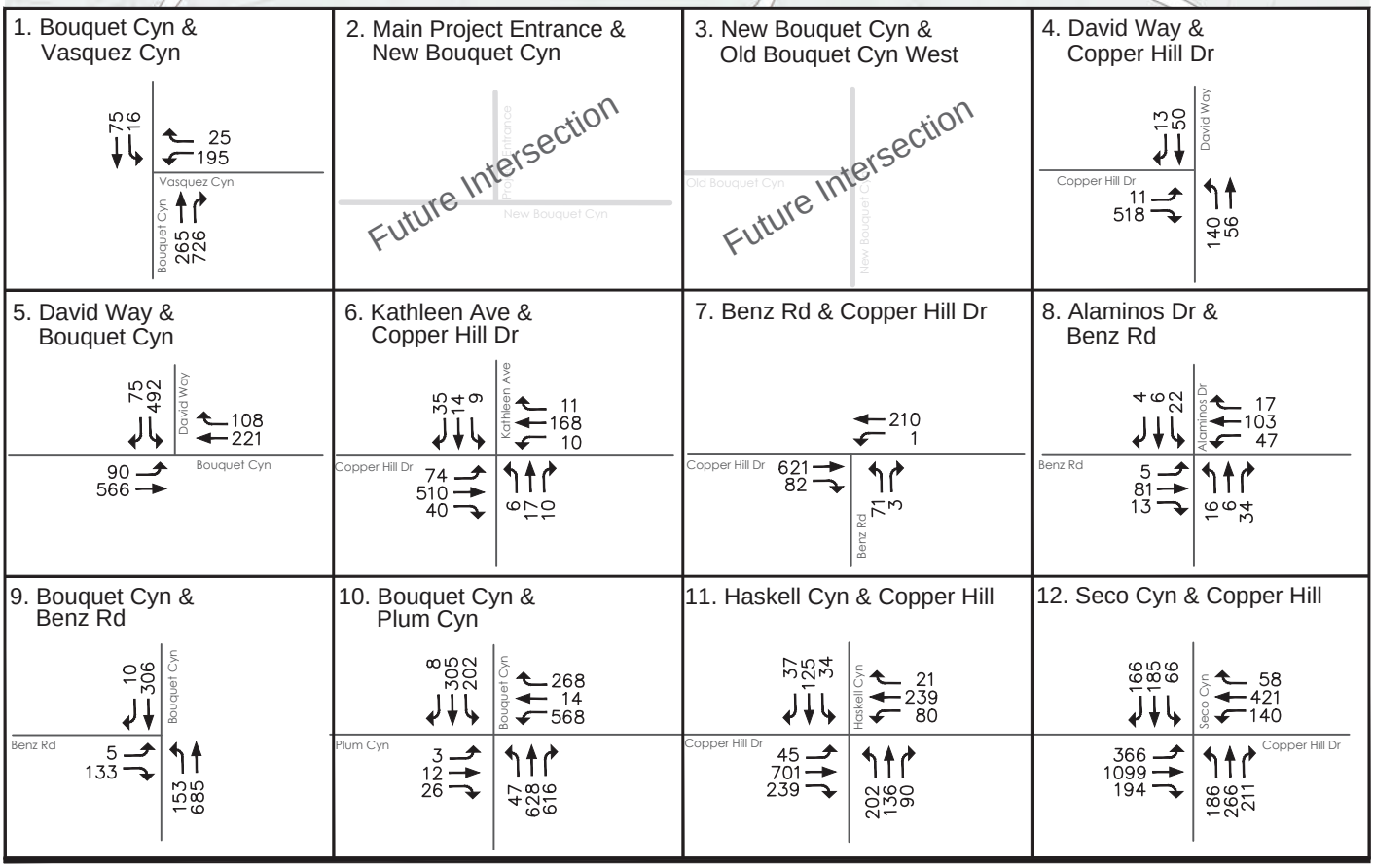


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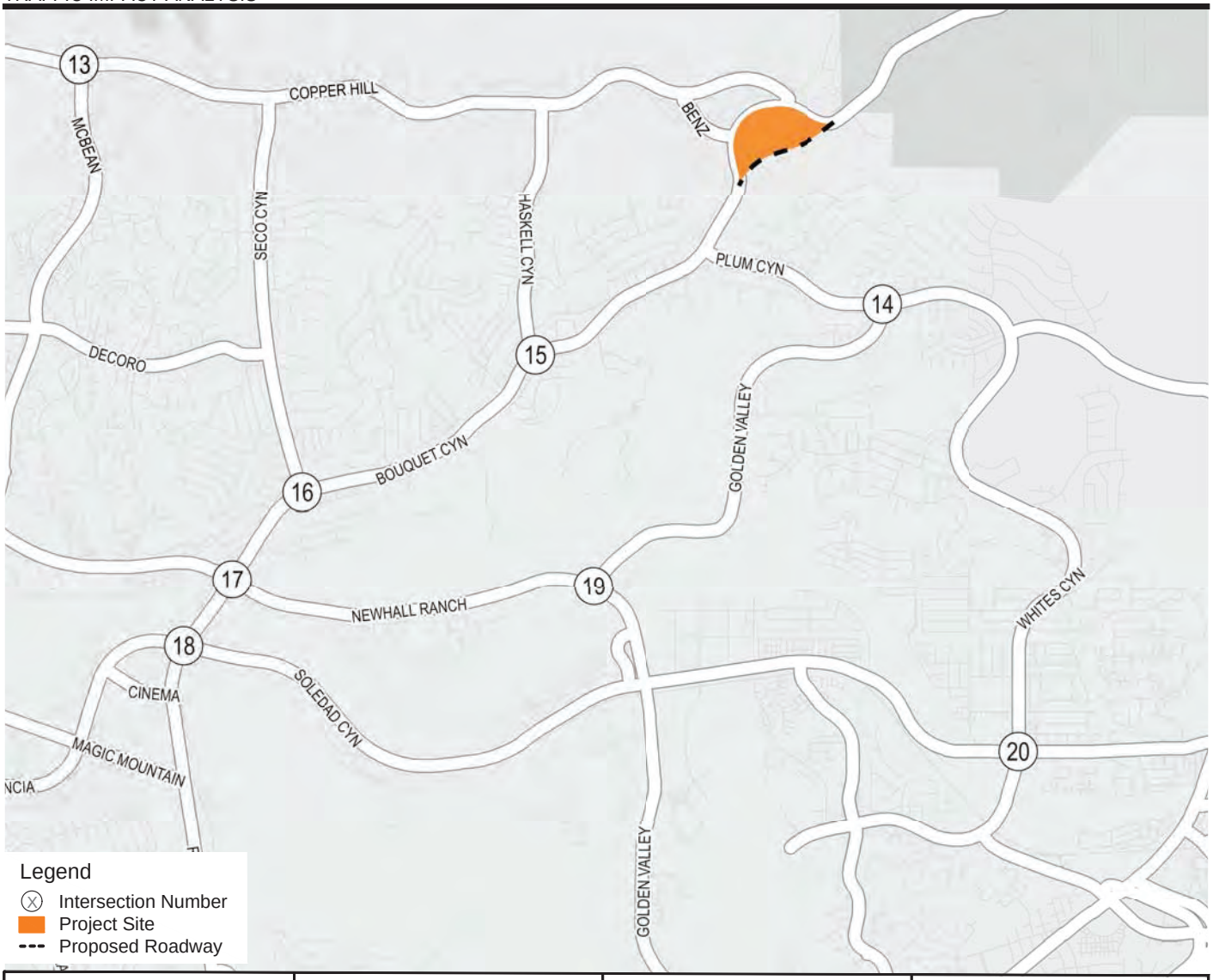
Figure 2-7

Existing PM Peak Hour Volumes - Intersections 1-12



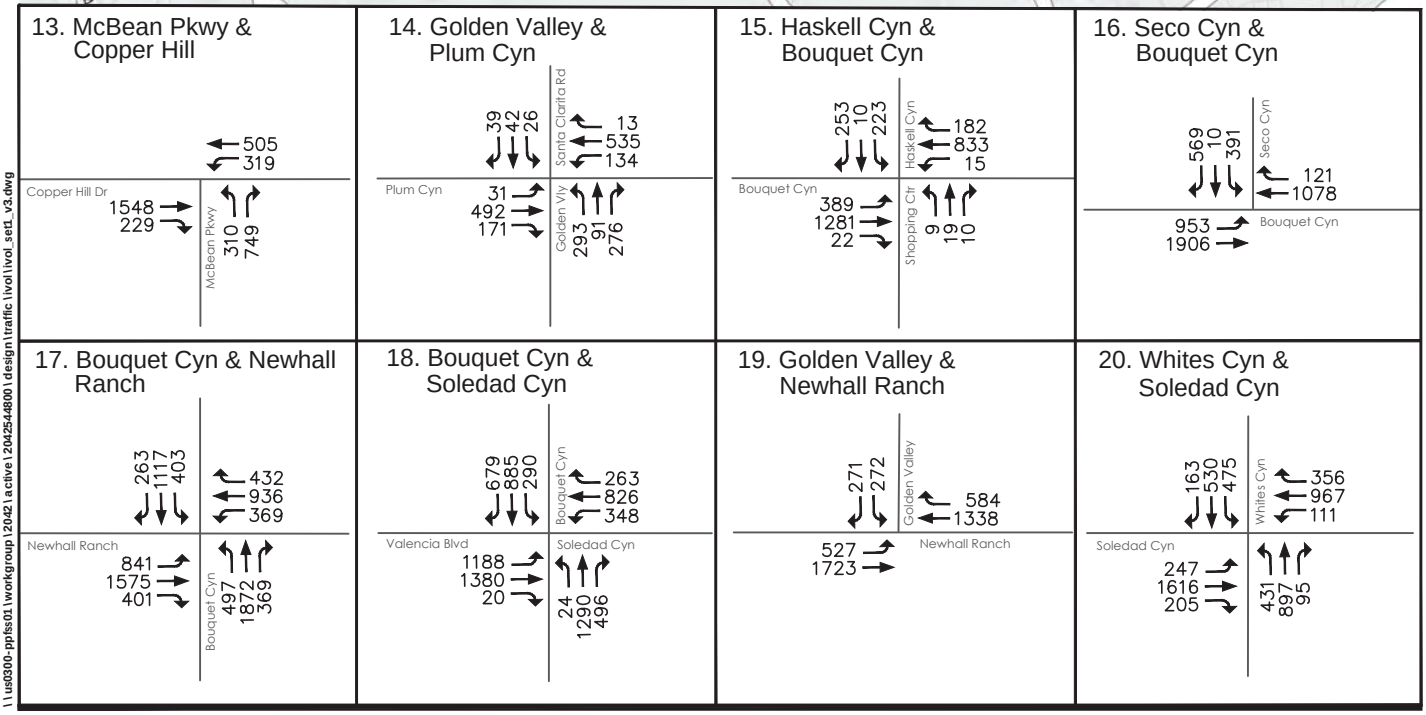


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Figure 2-8

Existing PM Peak Hour Volumes - Intersections 13-20

2.1.3 Public Transportation

The Project site is currently serviced by City of Santa Clarita Transit (SCT) Route 4, with stops at the intersection of Steve Jon Street and Bouquet Canyon Road at the south end of the Project site and Shadow Valley Lane and Bouquet Canyon Road north of the site. With the proposed realignment of Bouquet Canyon Road, the location of these existing bus stops might change, or another bus stop location might be added. SCT Routes 4 travels along Bouquet Canyon Road from Los Angeles Residential Community (LARC) Ranch to the north and joins Route 14 at Plum Canyon Road south to Magic Mountain Parkway, then along Magic Mountain Parkway to the McBean Regional Transit Center (MRTC) and south to Newhall Metrolink Station. Additional routes, accessible from this route, provide service to the greater Santa Clarita Valley area.

SCT Commuter Express offers express commuter bus travel to Los Angeles, Warner Center, Van Nuys, Century City and the Antelope Valley. Three Metrolink stations exist within the City of Santa Clarita, which serve the Antelope Valley line. This line travels between Lancaster and Union Station, Los Angeles.

2.1.4 Active Transportation

The City of Santa Clarita approved the Non-Motorized Transportation Plan Update in September 2014, and it provides a comprehensive overview of the state of bicycling and walking in the City as well as direction for future investments in bicycle and pedestrian facilities programs.

An existing Class II Bike Lane is located on Bouquet Canyon Road north of Newhall Ranch Road which ends just south of the Project site. In the future, the Project site will be served by a Class I Bike Path that will be completely separated from the roadway for the exclusive use of bicycles and pedestrians which follows Bouquet Creek to the south of the site and by a Class III Bike Route on Bouquet Canyon Road north of the Project site. There is also a Class II Bike Lane planned along Copper Hill north of the Project site to join the existing Class II Bike Lane west of Haskell Canyon Road. The County of Los Angeles and the City of Santa Clarita each have Bicycle Master Plans (BMPs) with additional facilities planned in the Project area. **Figure 2-9** illustrates the existing and planned future bicycle facilities in the area.

2.2 FUTURE CONDITIONS

The Project is expected to buildout within a five-year time period. Additionally, there are other projects in the nearby area with buildout timeframes from 1 to 10 years. Therefore, a 2028 horizon year is utilized to evaluate cumulative impacts.

2.2.1 Future Land Use Development and Traffic Volumes

Future land developments anticipated for the Santa Clarita Valley are quantified in the SCVCTM. As previously discussed in Section 1.3.1, the SCVCTM includes a land use database prepared by Los Angeles County and the City of Santa Clarita that is based on the approved General Plans of each jurisdiction. This database is regularly updated as specific projects are proposed and thus is a comprehensive list of cumulative projects. In addition, the land use database has also been updated based on the One Valley One Vision (OVOV) Area Plan (see Reference 6 in Chapter 7.0). Trips to and from the Santa Clarita Valley, as well as “through-trips”, are included in the forecasts; thus, regional growth, which is traffic volume increase occurring outside of the SCVCTM area, is incorporated in the model.

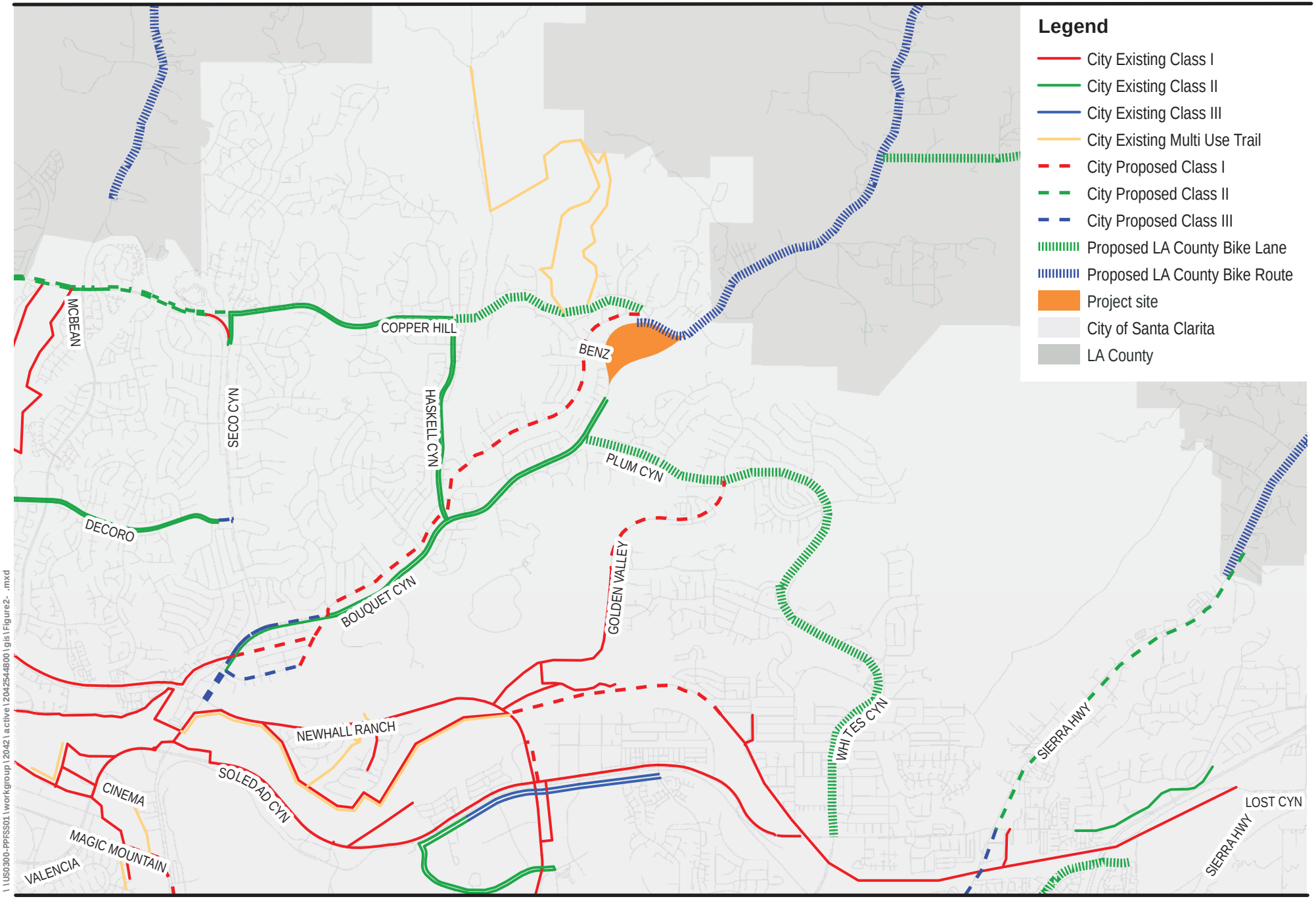

Figure 2-9
Existing and Future Bicycle Facilities

The 2028 Interim Year Cumulative Conditions traffic volumes are derived by the SCVCTM and based on a land use database that is interpolated between existing conditions and 2035 Valley buildout conditions. In addition, the 2028 land use database used by the SCVCTM includes the specific project information for Related Projects near the study area.

As noted above, the SCVCTM is regularly updated as specific development projects are proposed. Pending, recorded and approved projects are incorporated into the Long-range Buildout/Cumulative database. A listing of the known cumulative projects that have been included within the Interim Year 2028 database is provided in **Table 2-2**; interpolated growth for areas in which the OVOV plan anticipates future development is not included in **Table 2-2** although such growth is accounted for in the impacts analysis. **Figure 2-10** shows the general location of the projects listed in **Table 2-2.**

Table 2-2 Defined Related Projects Included in the Cumulative Database

No.	Project	Description
1	Oakmont (West Creek)	85 TSF and 95-bed senior care facility
2	Avanti (West Creek)	92 single-family residential units
3	Trinity School Expansion	74.6 TSF school (TK-12)
4	So Cal Innovation Park	535 TSF commercial/industrial
5	Homewood Suites	185-room hotel
6	Gates King/Needham Ranch	4,400 TSF industrial/office space
7	8th Street Residential	11 single-family residential units
8	Valley Street Condos	5 single-family condominium units
9	Orchard Wiley Medical	41 TSF medical office building
10	UCLA Archives Phase 3	134 TSF archive facility
11	Hospital Henry Mayo	330 TSF medical facilities 200 TSF building & parking structure
12	Valencia Gas Station	Gas station & 3 TSF retail
13	Element by Westin/Oliver	134-room hotel & 4 TSF restaurant
14	Residence/Springhill/HIE	290-room hotel
15	Tourney Place Building 6	46 TSF office building
16	VTC Square	60 apartment units & 10 TSF commercial
17	OLPH	21 TSF church & parking lot
18	Newhall Crossings	47 apartments & 21 TSF commercial
19	Luxen Hotel	42-room hotel
20	Laemmle Theatre	7-screen movie theater (approx. 500 seat)
21	Dockweiler 21 Residential	96 single-family residential condos
22	Master's University Residential Master's University Master Plan	42 single-family detached condos 240 TSF college campus expansion
23	Princessa Crossroads	925 single-family residential units 680 TSF commercial
24	Sheriff Station	57 TSF station
25	Habitat for Heroes	78 multi-family residential units
26	Oak Ridge Industrial Oak Ridge Commercial	300 TSF commercial/industrial business park 30 TSF commercial
27	Chinquetera	91 TSF commercial
28	Terry & Julie Homes	4-lot residential subdivision
29	Sultus	4-lot residential subdivision
30	Spirit Hill	4 single-family residential units
31	Sand Canyon Estates	18 single-family residential units
32	Sand Canyon Estates	4 single-family residential units
33	Bill Rex Residential	4-lot residential subdivision
34	Kehoe	2-lot residential subdivision
35	Aliento	404 single-family residential units & 95 senior units
36	Friendly Gas and Market	Gas station & 3 TSF retail
37	Disney & ABC Studios	556 TSF indoor studio facilities
38	Park Vista	182 single-family residential units
39	Veluzat GVR Condos	9 single-family detached condominium units
40	Centre Pointe Warehouse	58 TSF warehouse/office
41	Dentec	95 single-family residential units
42	River Village	1,089 residential units
43	Five Knolls	639 residential units
44	Rent-a-Bin	60 TSF recycling facility
45	Tr 73065 (KB Home)	Commercial center (size TBD)

(continued)

Table 2-2 (cont'd)

No.	Project	Description
46	Plum Bouquet Retail	10 TSF retail building
47	Bouquet Canyon (Proposed Project)	484 residential units on 57 acres
48	Tr 46018	203 single-family residential units
49	Soledad Office	100 TSF medical office building
50	PWP Properties Condos	14 multi-family residential units
51	Vista Canyon Ranch JPI Apartments Gensler Building Parking Structure	950 TSF commercial & 1,100 residential units 480 apartment units 60 TSF 3-story office building 622 parking stalls in 5 levels
52	Providence Healthcare	23 TSF commercial & 37 TSF medical office
53	Ted Robinson	40 single-family residential units
54	Mancara	109 single-family residential units
55	Sand Canyon Plaza	119 single-family residential units 461 multi-family residential units 140-bed assisted living 60 TSF commercial
56	Canyon Brook	35 single-family residential units
57	Sand Canyon Resort	217-room hotel, villas & conference center
58	Iron Canyon	4 single-family residential units
59	Placerita Ranch/Ravello	322 single-family residential units
60	Whittaker/Porta Bella	1,244 single-family residential units 1,677 multi-family residential units 2,900 TSF commercial office/retail
61	Overland 1 Tr 52192	75 single-family residential units
62	Overland 2 Tr 52193	234 single-family residential units
63	Skyline Ranch	1,260 single-family residential units
64	VTTM 73858 Residential	183 single-family condominium units 228 apartment units
65	Mission Village	4,055 residential units, 1,555 TSF mixed-use/commercial
66	Entrada South	1,574 residential units 435 TSF office 280.2 TSF retail

See Figure 2-8 for locations.
TSF = 1,000 square feet
Note: The SCVCTM includes additional approved and planned development not listed here
Source: City of Santa Clarita Planning Department and Los Angeles County Subdivision Map

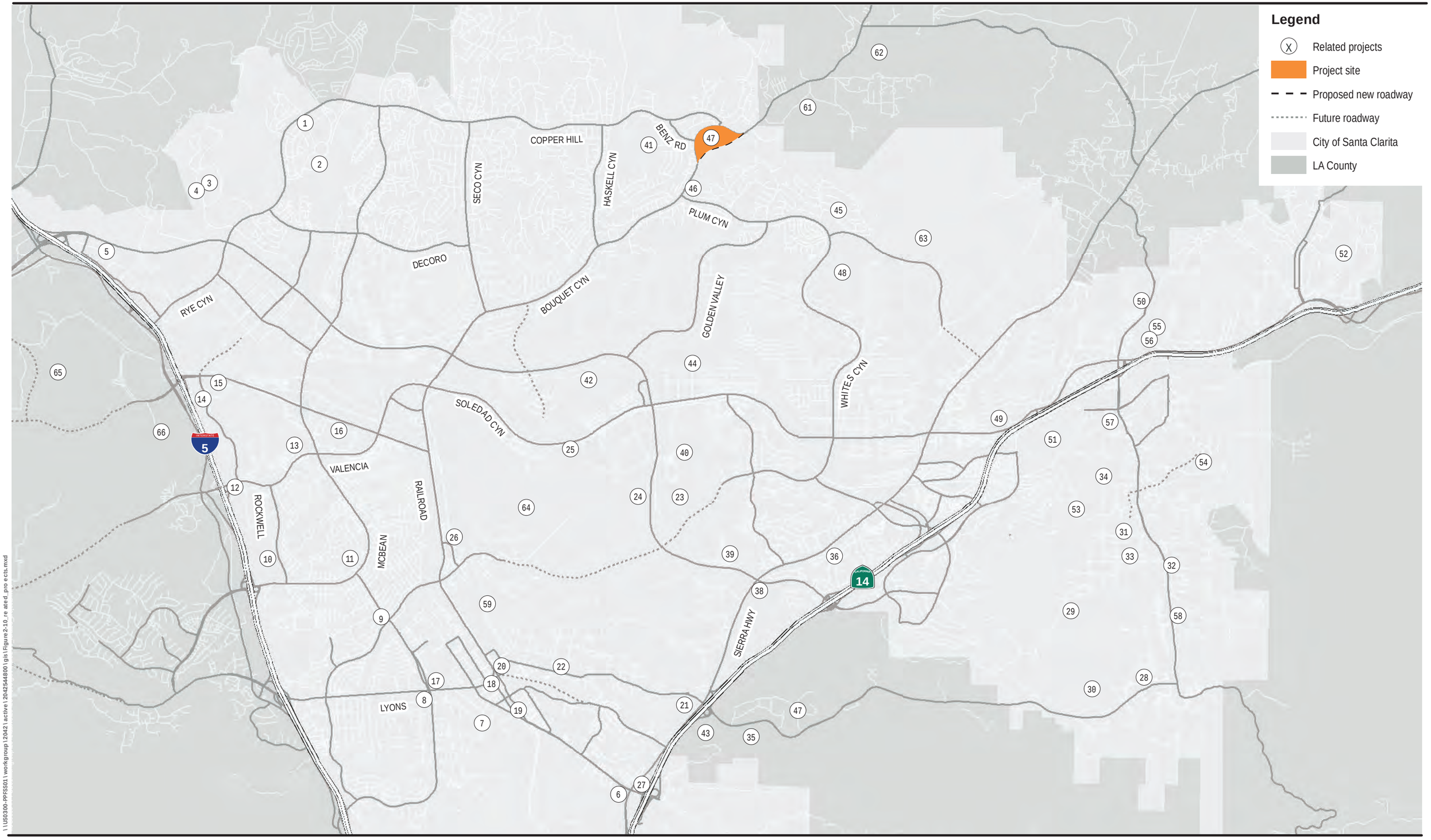

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Figure 2-10

Related Projects Location Map
2.16

3.0 PROJECT DESCRIPTION

This section describes the Project in terms of its transportation characteristics. Trip generation is summarized and the distribution of the Project's trips on the adjoining roadway network is presented.

3.1 PROJECT TRIP GENERATION

The proposed Project is a residential development consisting of five planning areas with different types of residential products. The Project consists of a total of 375 dwelling units, 64 of which are detached single family units and 311 are multi-family for-sale units. The Project site is presently vacant with one single-family unit.

For the purpose of the traffic study, the Project land uses have been categorized based on industry standards such as the Institute of Transportation Engineers (ITE) Trip Generation Manual (see Reference 1 in Chapter 7.0) and, in the case of townhomes, the rates used by the County of Los Angeles Department of Public Works Traffic Impact Analysis Guidelines (see Reference 4 in Chapter 7.0). The specific trip rates used for this analysis and detailed trip generation estimates based on these trip generation rates are provided in **Table 3-1.**

As shown in Table 3-1, the Project is estimated to generate approximately 3,092 daily trips, with 215 trips during the AM peak hour, and 290 trips during the PM peak hour.

3.2 PROJECT TRIP DISTRIBUTION

The geographic distribution of Project-generated trips was derived by the SCVCTM. The SCVCTM is a computerized travel demand model that utilizes a sophisticated trip distribution function to derive the distribution of vehicle trips, and which has previously been calibrated to the existing conditions of the Santa Clarita Valley. The SCVCTM is jointly maintained by City of Santa Clarita and County of Los Angeles staff, and is utilized for all major transportation planning efforts within the Santa Clarita Valley. Production and attraction trip data is generated by the model based on five separate trip purposes, and trip distribution patterns are then derived by the model. As a final step, the model assigns these trips to the roadway network based on the derived distribution patterns.

Illustrations of the Project's trip distribution patterns are provided in **Figure 3-1** as determined by the SCVCTM. Based on the model, approximately 16 percent of Project trips are distributed to Copper Hill Drive west of the Project site, 55 percent to Bouquet Canyon Road south of the Project site, 26 percent to Plum Canyon Road east of the Project site, and 3 percent to Bouquet Canyon Road north of the Project site. Project-only trips during the AM peak hour are shown in **Figure 3-2** and **Figure 3-3** and during the PM peak hour are shown in **Figure 3-4** and **Figure 3-5**.

Table 3-1 Trip Generation Summary

Category	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Trip Rates								
Single-Family Detached [1]	DU	0.18	0.56	0.74	0.62	0.37	0.99	9.44
Condominium/Townhouse [2]	DU	0.06	0.48	0.54	0.47	0.26	0.73	8.00
Trip Generation								
Proposed Project								
Single-Family Detached	64 DU	12	36	47	40	24	63	604
Condominium/Townhouse	311 DU	19	149	168	146	81	227	2,488
Total Project Trips	375 DU	30	185	215	186	105	290	3,092
Total Trips for Impact Analysis[3]		46	191	237	202	117	318	3,212

Rate Source:
[1] ITE 10th Edition, Category 210
[2] Los Angeles County Traffic Impact Analysis Report Guidelines, 1997
[3] This traffic study was prepared based on an initial project description with a higher number of single-family detached units. Refinements to the unit total and unit mix were subsequently made by the applicant and a supplemental analysis (summarized in a separate document) showed that the new unit total and mix of unit types (375 DU total) resulted in fewer trips than the initial project description. Therefore, this traffic study evaluates a conservative, worst-case scenario.
DU = Dwelling units; ADT = Average daily traffic; TIA = Traffic impact analysis

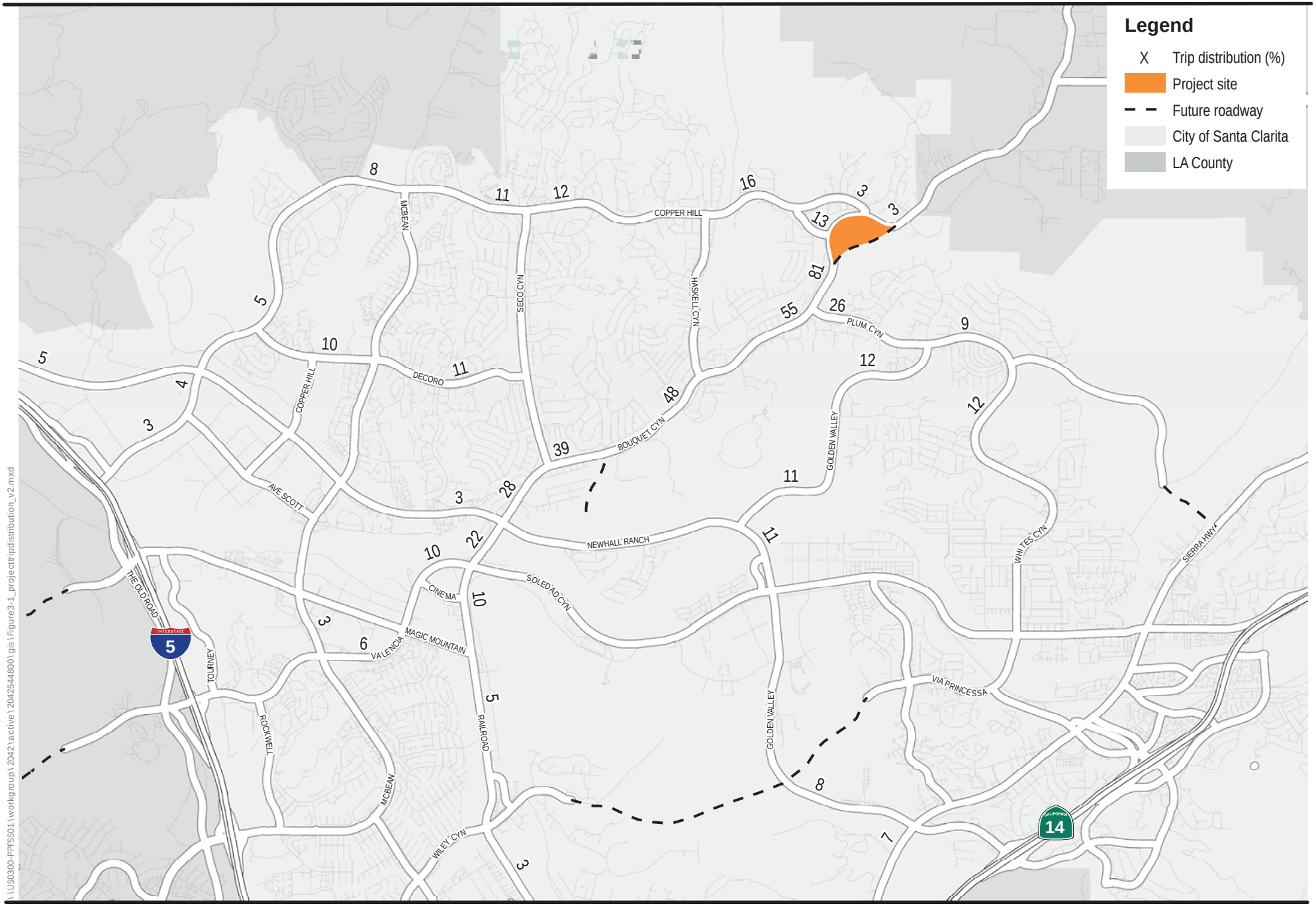

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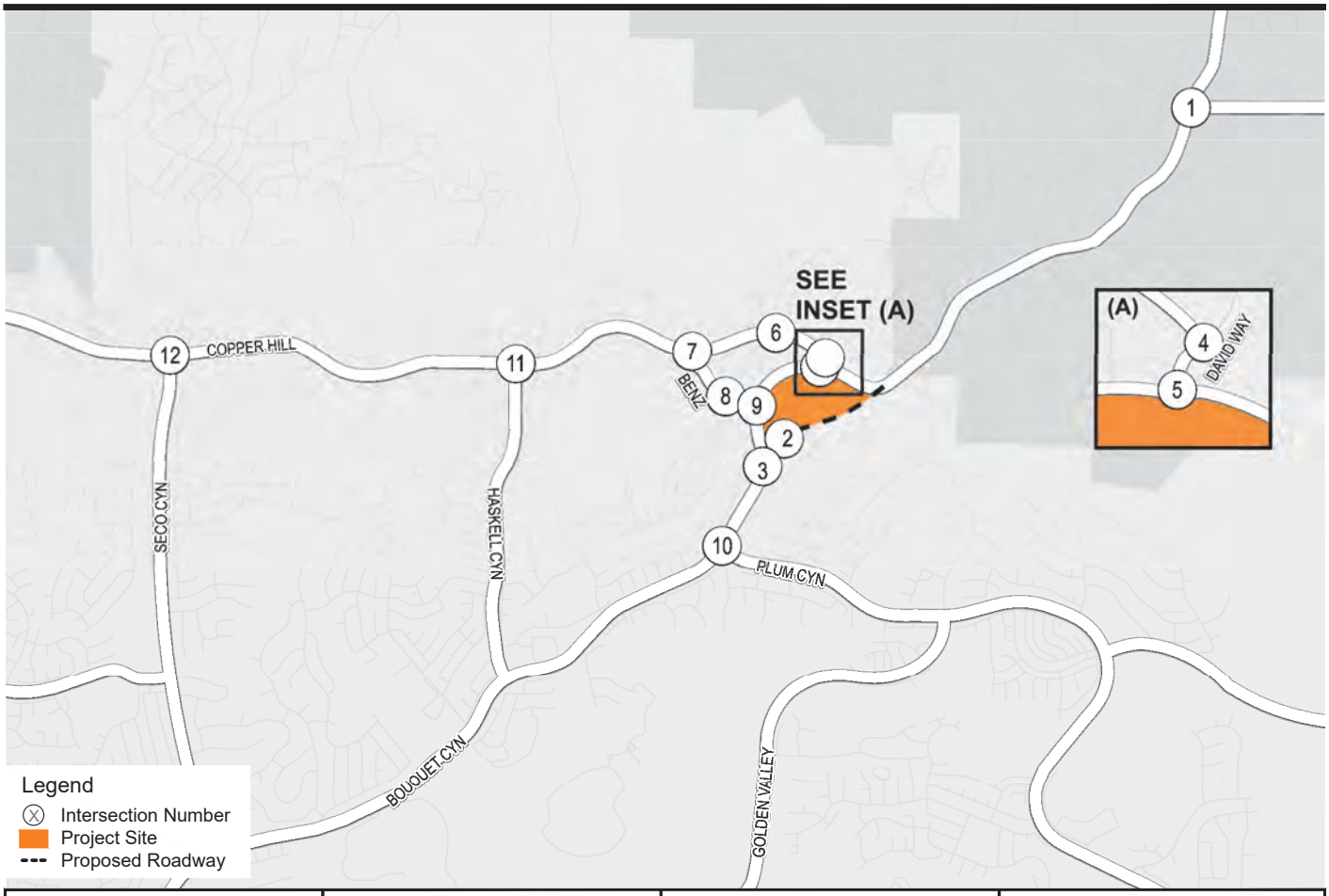
Figure 3-1

Project Trip Distribution

3.3



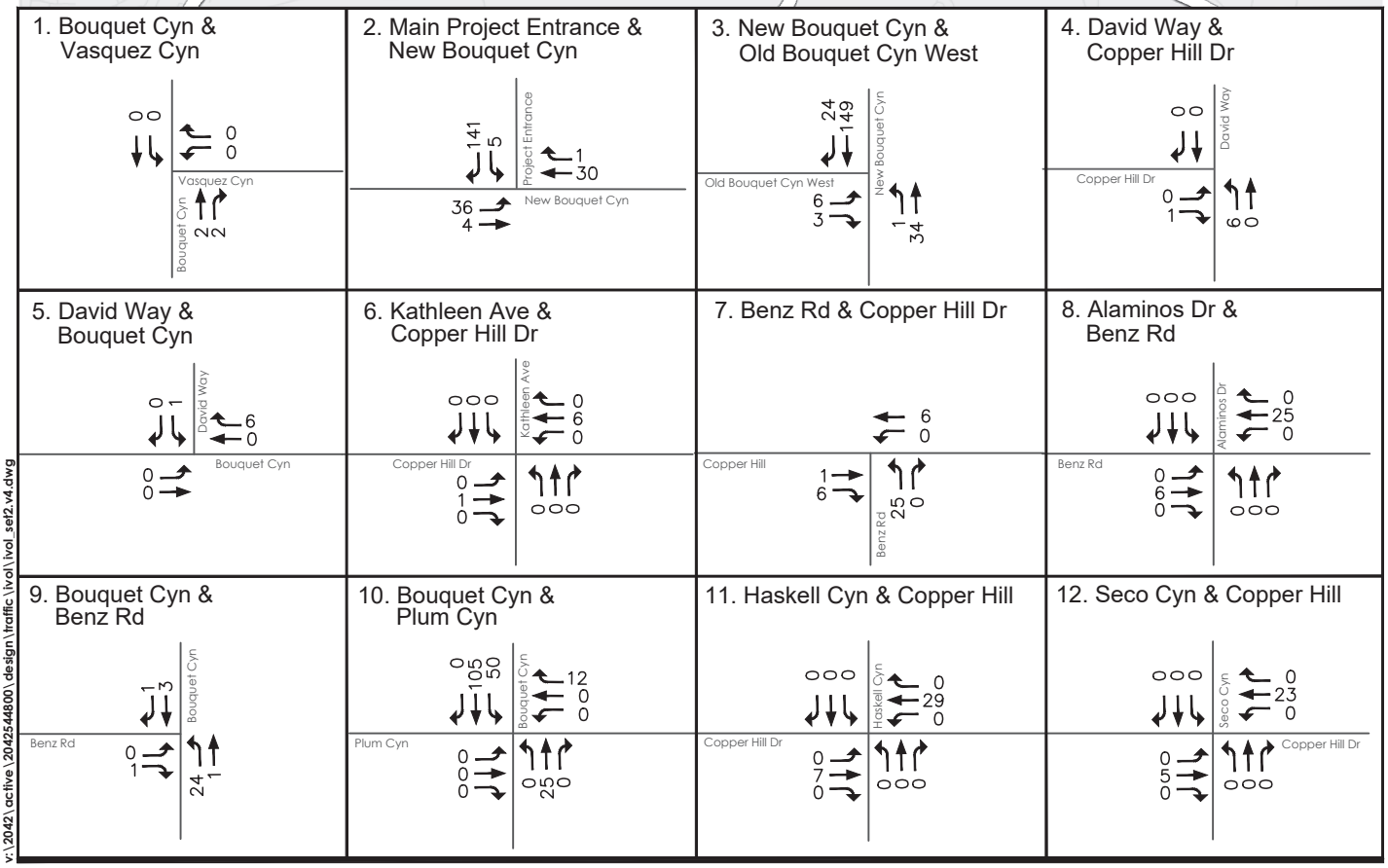


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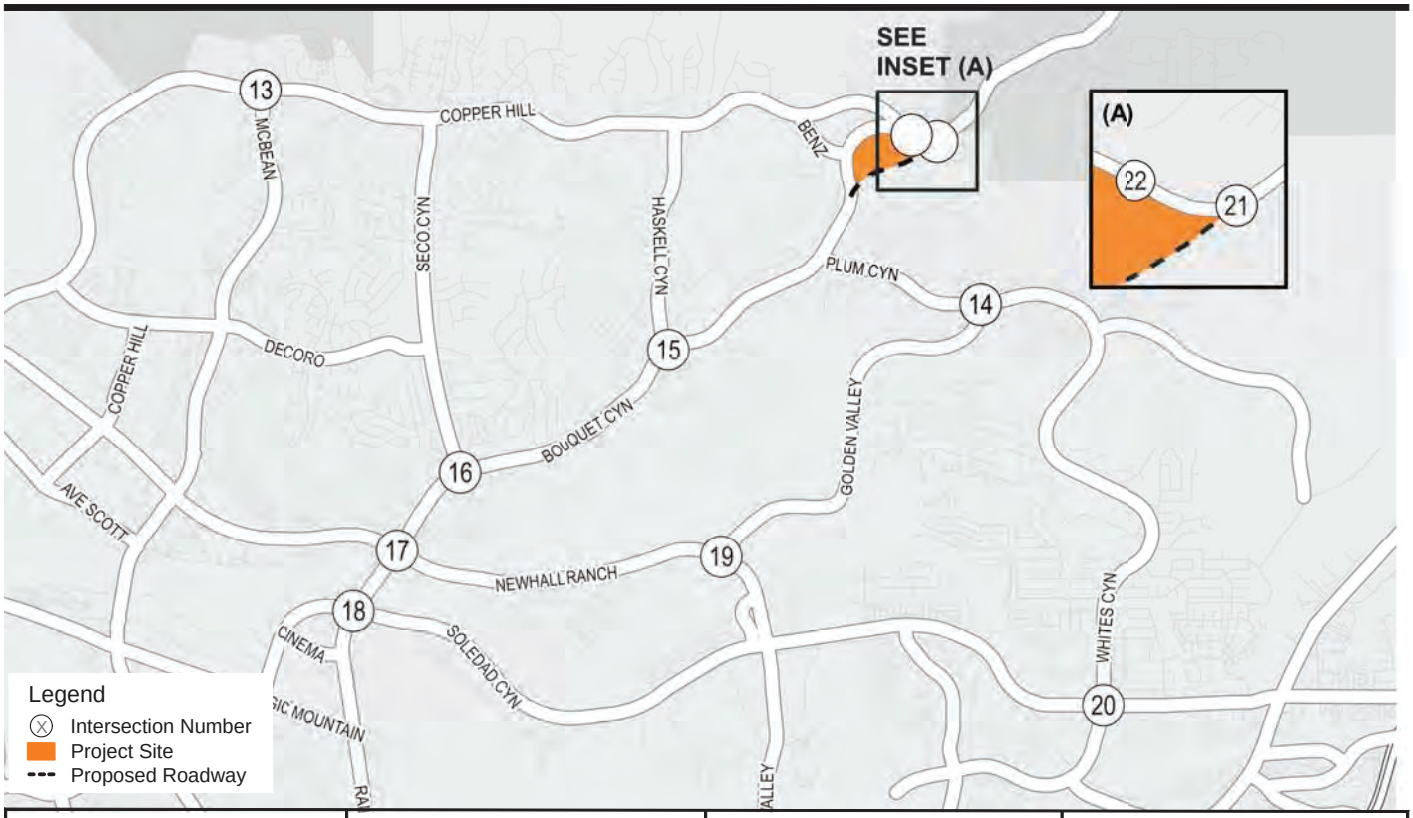
Figure 3-2

Project Only
AM Peak Hour Volumes - Intersections 1-12
3.4



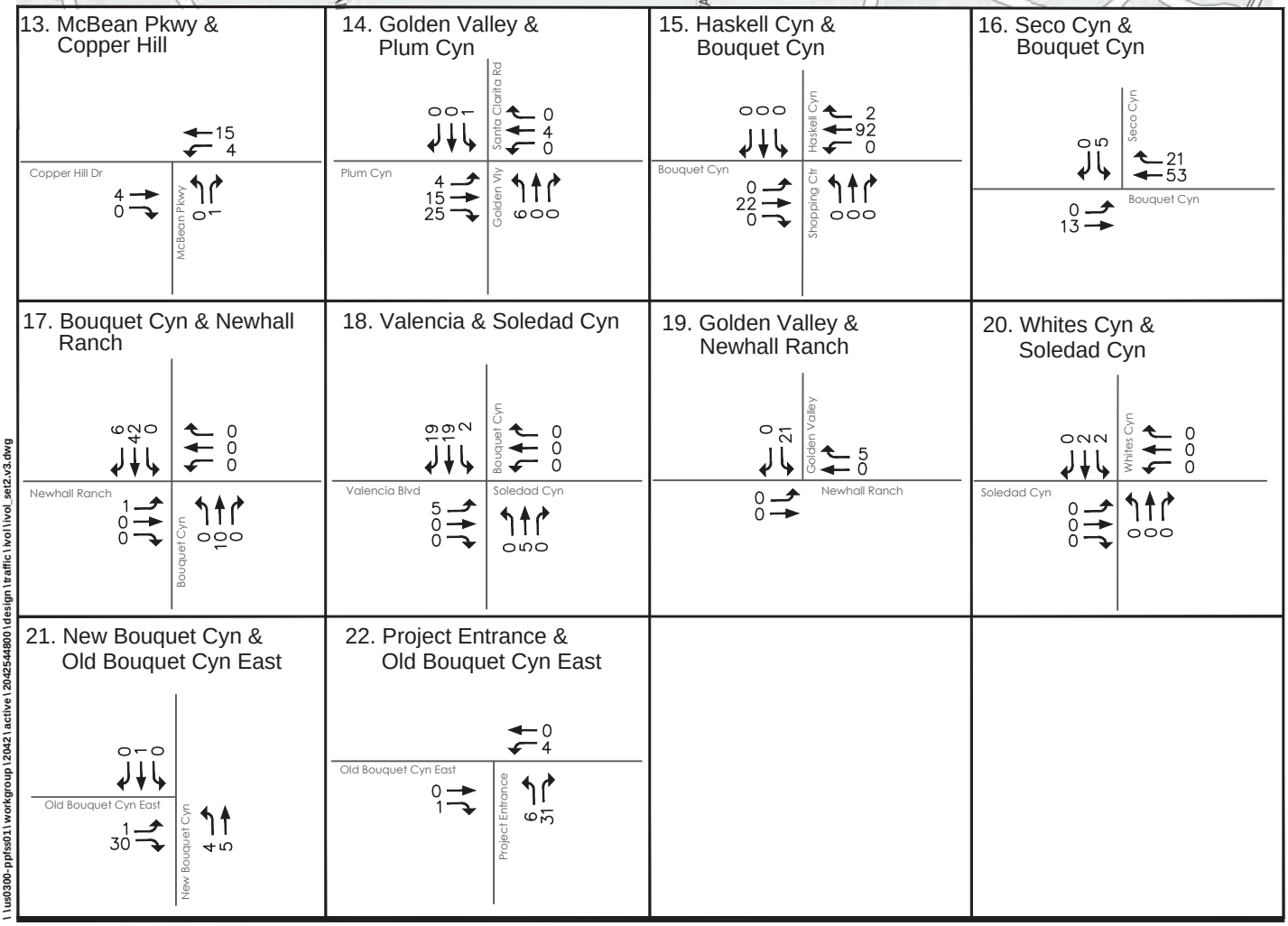


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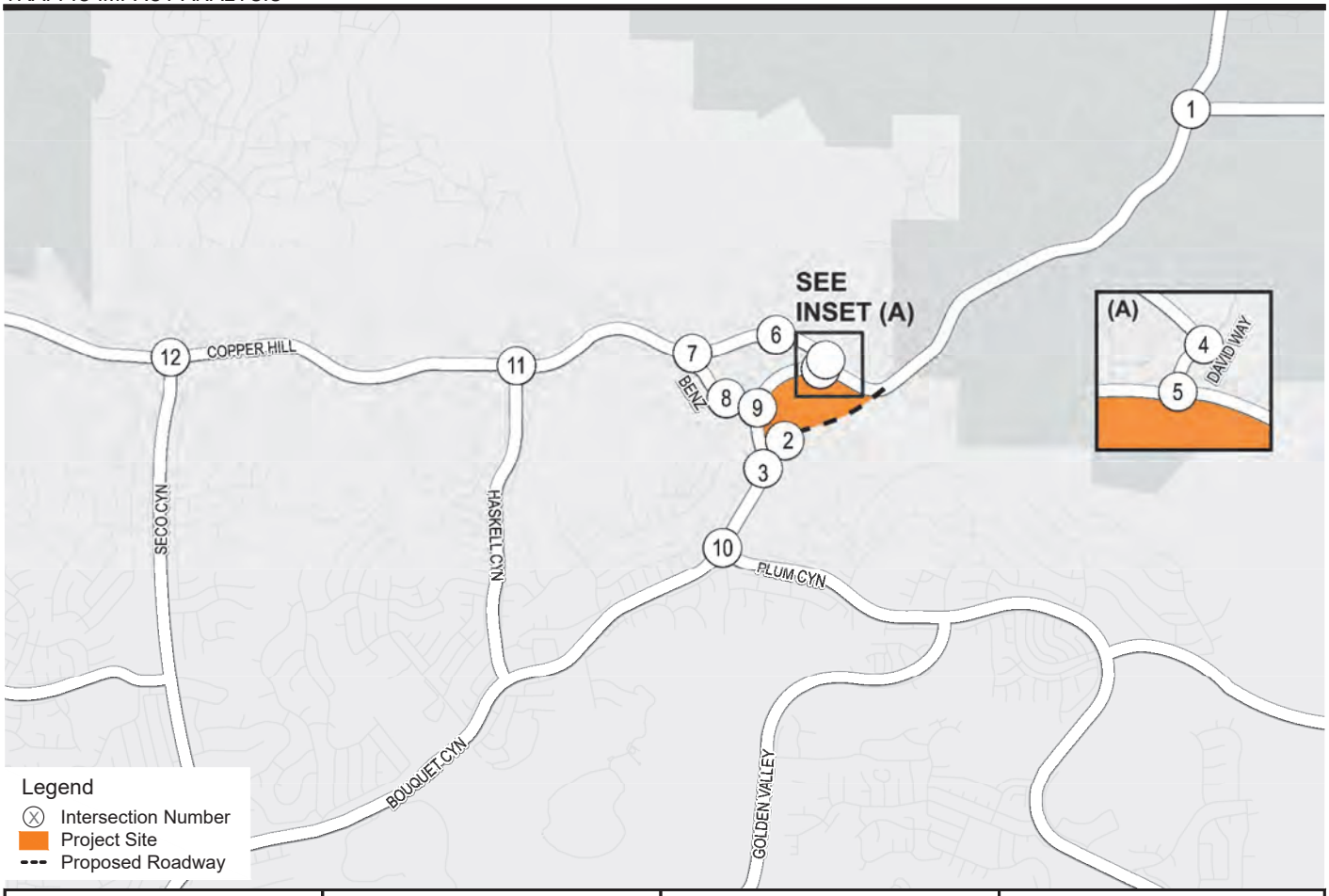
Figure 3-3
Project Only
AM Peak Hour Volumes - Intersections 13-22
3.5



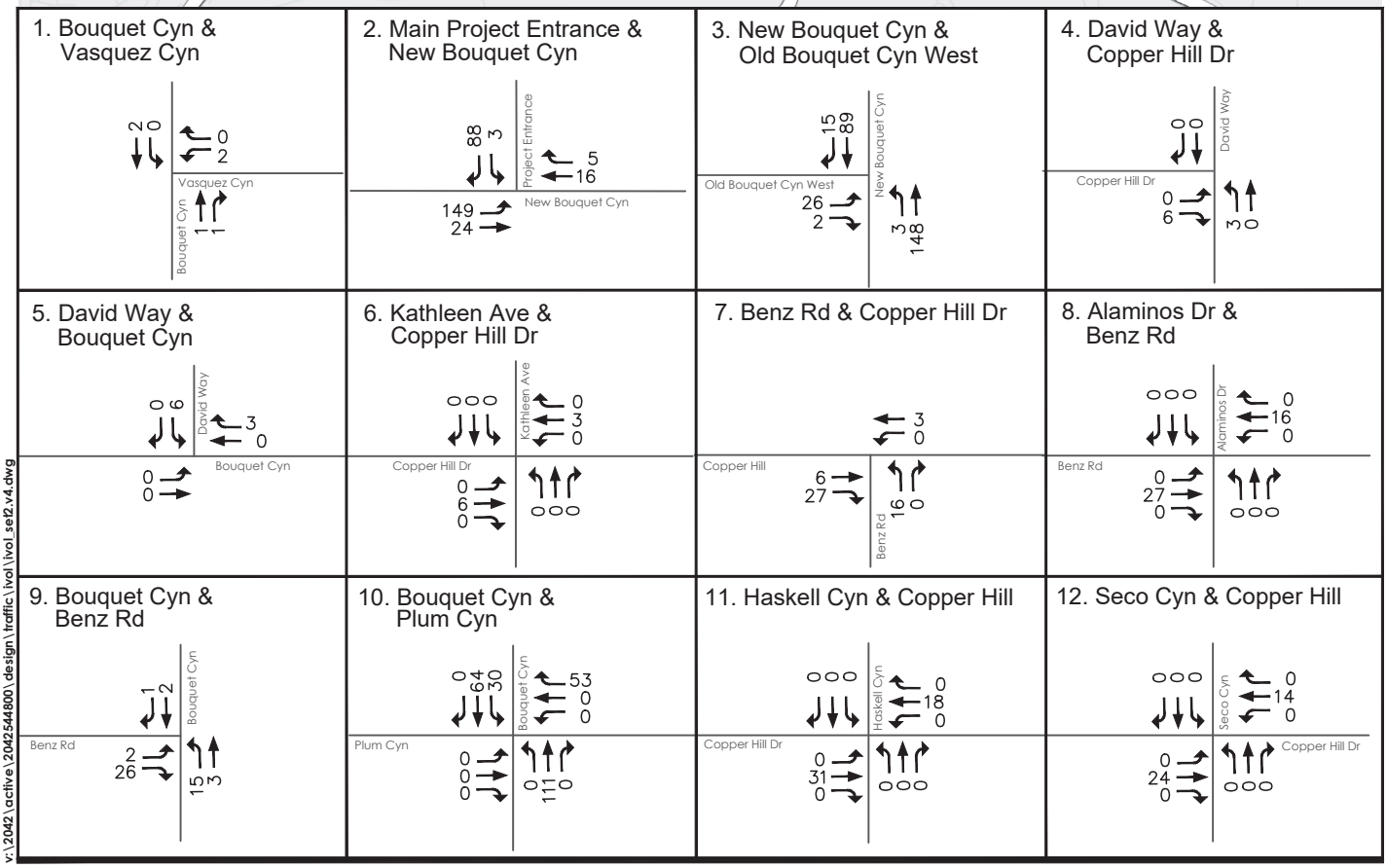


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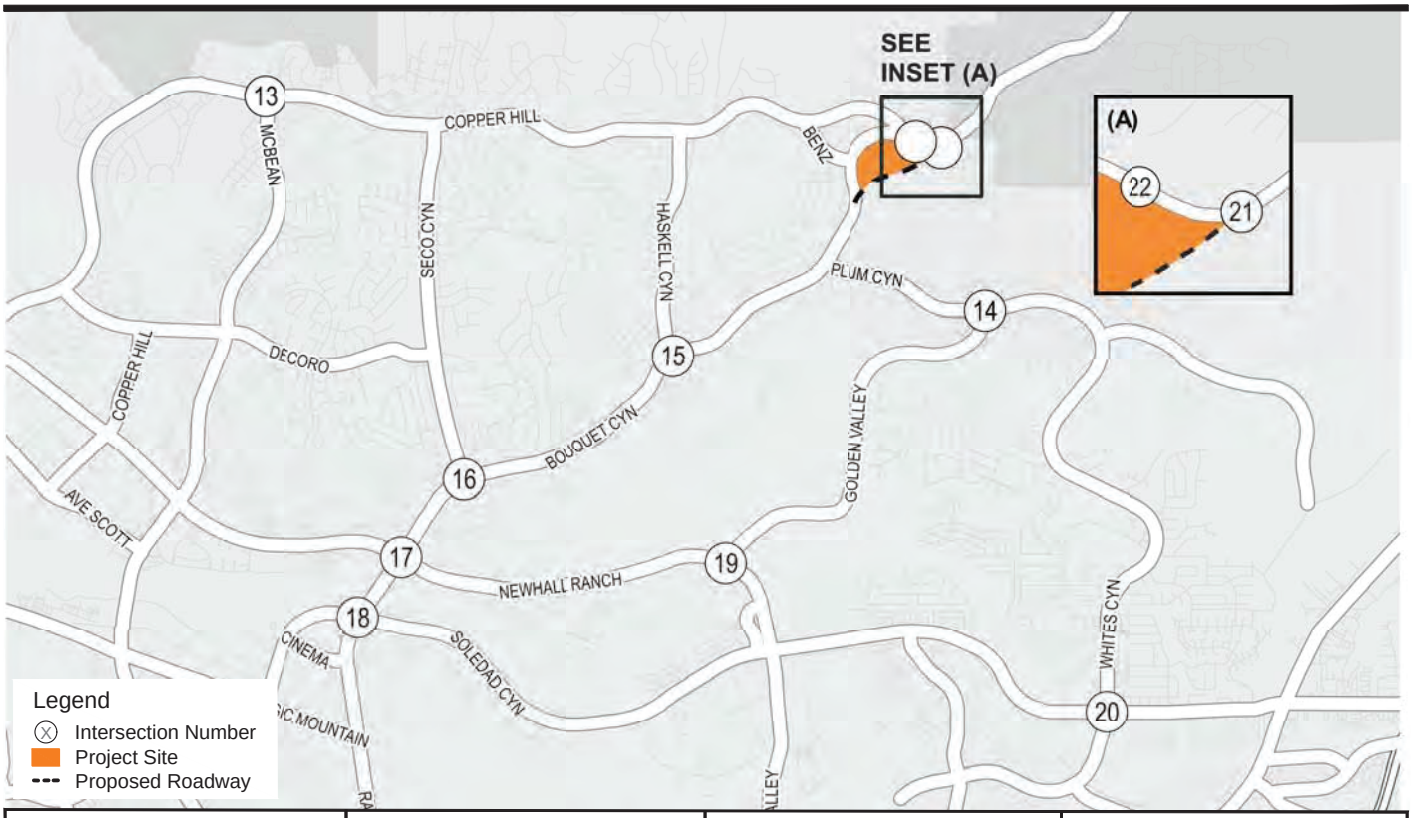
Figure 3-4

Project Only
PM Peak Hour Volumes - Intersections 1-12
3.6



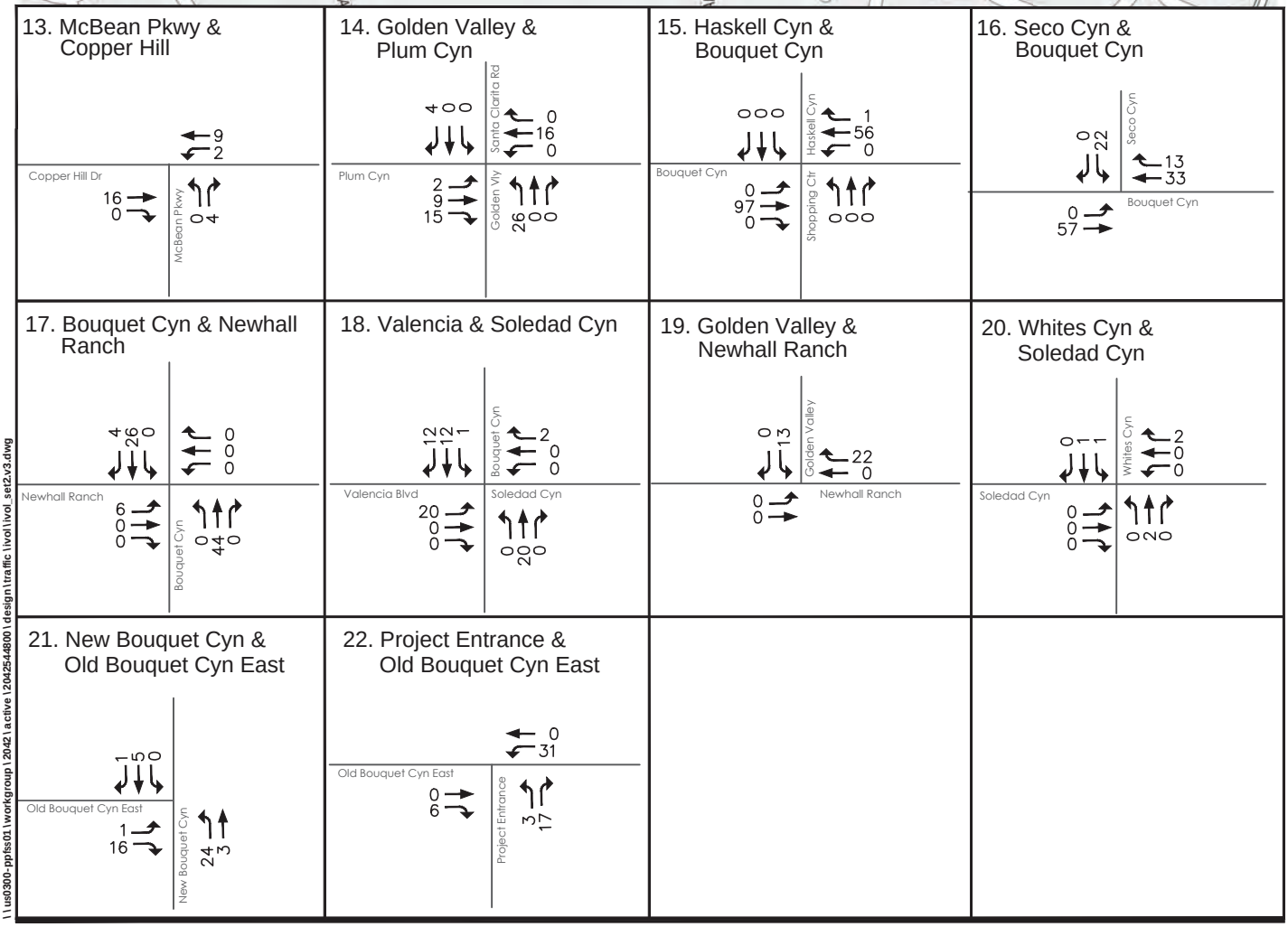


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Figure 3-5

Project Only
PM Peak Hour Volumes - Intersections 13-22
3.7

3.3 SITE ACCESS

The Project includes five proposed access points that are illustrated in **Figure 3-6**.

The Project includes a gated entry along the newly relocated Bouquet Canyon Drive that provides access to Planning Areas 1 through 3 in the western and central portions of the Project. This intersection will serve as the main access point into/out of the Project site and was evaluated for satisfaction of a traffic signal warrant (results of signal warrant evaluations are presented in **Chapter 5.0)**. A traffic signal at this intersection is warranted based on the estimated peak hour volumes.

The Project also includes a private street approximately a quarter mile north of the main Planning Area 1-3 access intersection described above. This driveway is primarily for trailhead parking but will also provide a connection into Planning Areas 1-3. The driveway will be under stop control and limited to right-turns in/out only.

An entrance along the eastern portion of Old Bouquet Canyon Road east of David Way that provides access to Planning Area 4 in the eastern portion of the site will also be provided. The private street will be under stop control.

A small portion of the Project with 12 single-family homes is located on the east side of Bouquet Canyon Road adjacent to Canyon Center commercial center. This portion of the Project will take access from Bouquet Canyon Road approximately 300 feet north of Steve Jon Street/Canyon Center driveway and approximately 250 feet south of the future Old Bouquet Canyon Road and New Bouquet Canyon Road intersection. The private street will be under stop control.

Another small portion of the Project with nine single-family homes is located on the east side of the Old Bouquet Canyon Road and access to that portion of the Project is provided via a gated entrance opposite of Pam Court.

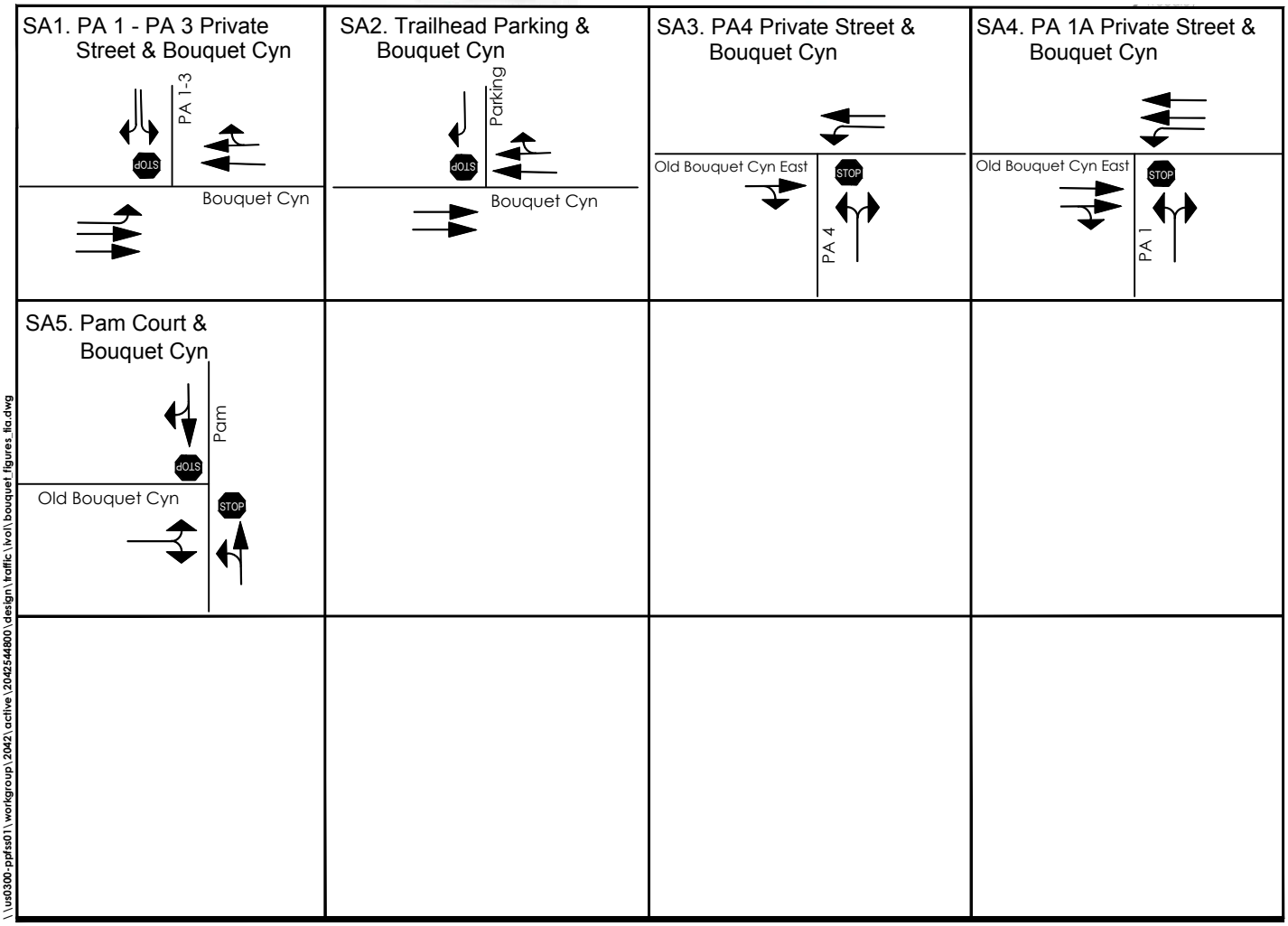

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Figure 3-6
Site Access

4.0 IMPACT ANALYSIS

This chapter presents an Existing plus Project analysis, in accordance with CEQA. It also presents the impact analysis for Cumulative Conditions under both without and with Project scenarios. Traffic impacts of the proposed Project are addressed using the criteria outlined in Chapter 1.0.

4.1 EXISTING PLUS PROJECT ANALYSIS

This section provides an analysis of Project traffic impacts by comparing pre-Project existing traffic conditions to existing plus Project traffic conditions. This CEQA impact analysis documents Project-related trips and their addition to the existing, observed traffic count data (i.e., existing conditions) in order to identify potential traffic impacts. This analysis is referred to as the Existing plus Project scenario. This scenario assumes full buildout of the entire Project. The analysis assumes existing lane configurations and existing signal timing settings.

Existing plus Project ADT volumes are illustrated in **Figure 4-1**. The Existing plus Project AM peak hour intersection turning movement volumes are illustrated in **Figure 4-2** and **Figure 4-3**. Similarly, PM Peak hour intersection turning movement volumes are illustrated in **Figure 4-4** and **Figure 4-5**.

4.1.1 Existing Plus Project Conditions Impact Analysis

A peak hour intersection LOS analysis was conducted, and the results are summarized in **Table 4-1**. This table indicates that under the Existing plus Project conditions, the following intersections are forecast to be significantly impacted by the Project:

5. David Way & Old Bouquet Canyon East
7. Benz Rd and Copper Hill Dr
21. New Bouquet Canyon & Old Bouquet Canyon East

Mitigation that addresses the above impact is presented in the following Section.

Four new study intersections will be created by the proposed Project and the realignment of Bouquet Canyon Road. These intersections are assumed be two-way stop controlled under Existing plus Project conditions, with the exception of the New Bouquet Canyon Road at Old Bouquet Canyon Road East intersection, which would operate at LOS F during the AM and PM peak hours with stop sign control. This future intersection satisfies the Peak Hour Signal Warrant and is assumed to be signalized.

4.1.2 Existing Plus Project Conditions Mitigation

Roadway improvements have been identified to mitigate the Project impact identified in the previous section. **Table 4-2** lists the identified mitigation measures to address Project impacts in the existing plus Project conditions setting.

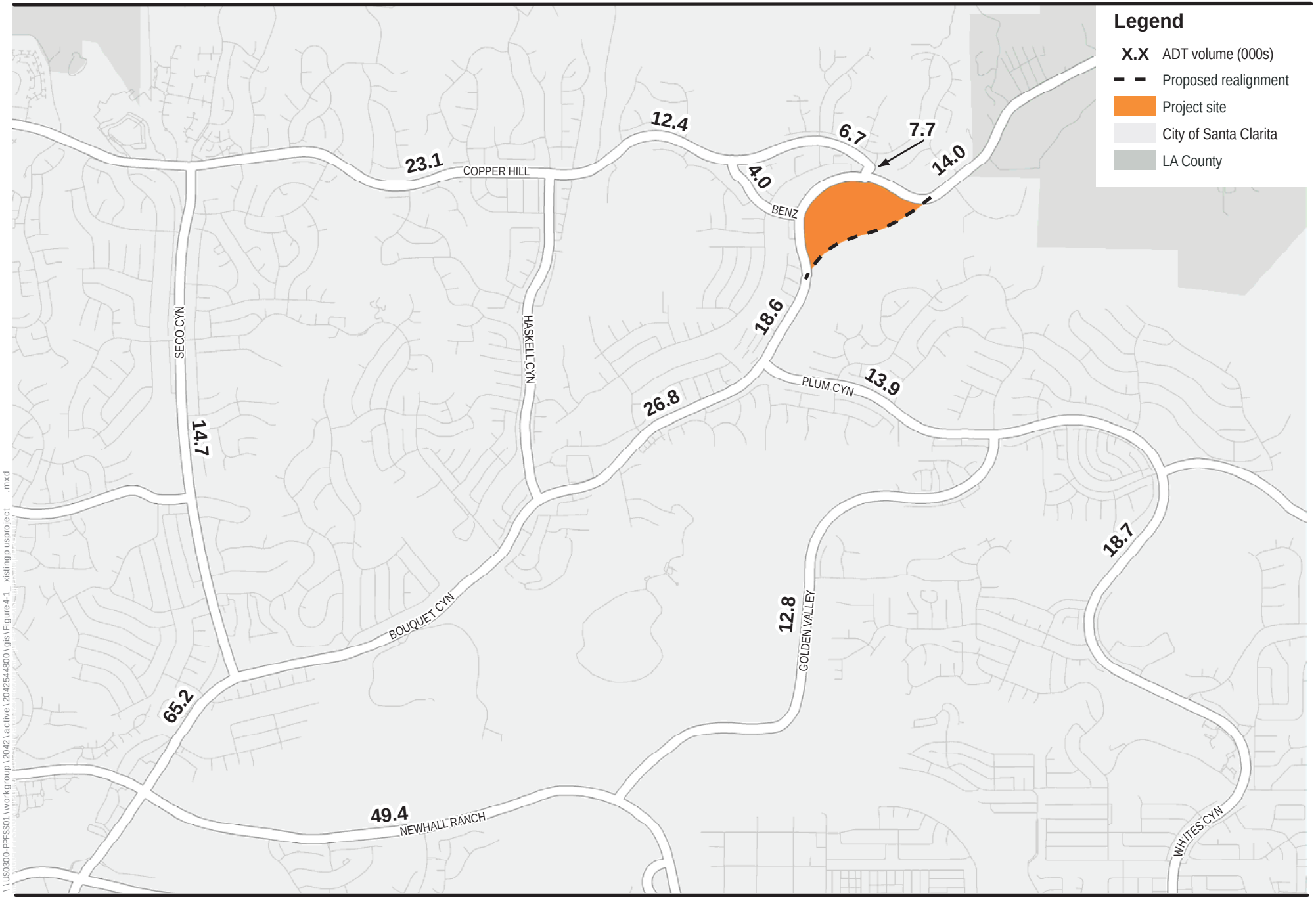

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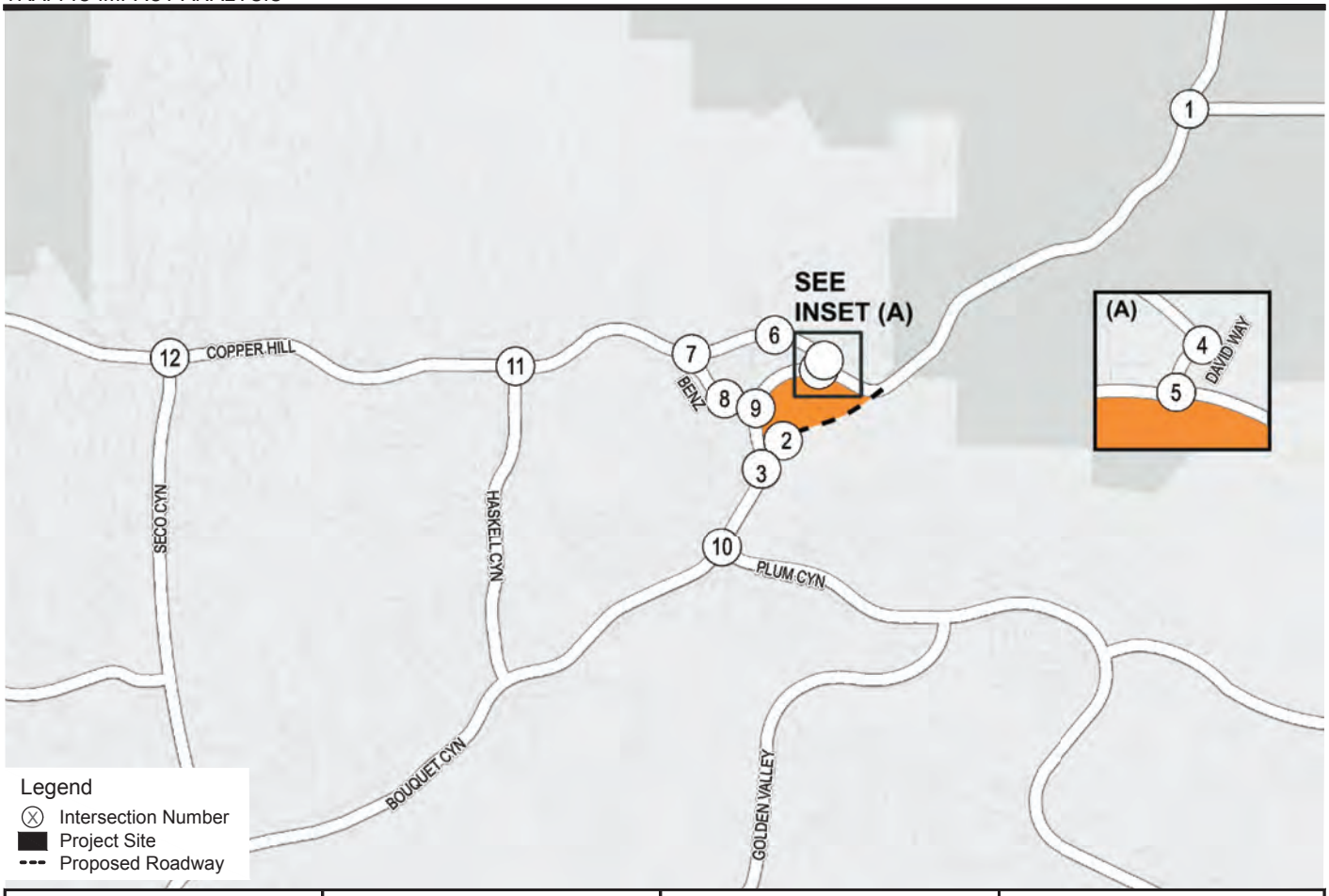
Figure 4-1
Existing Plus Project ADT Volumes
4.2



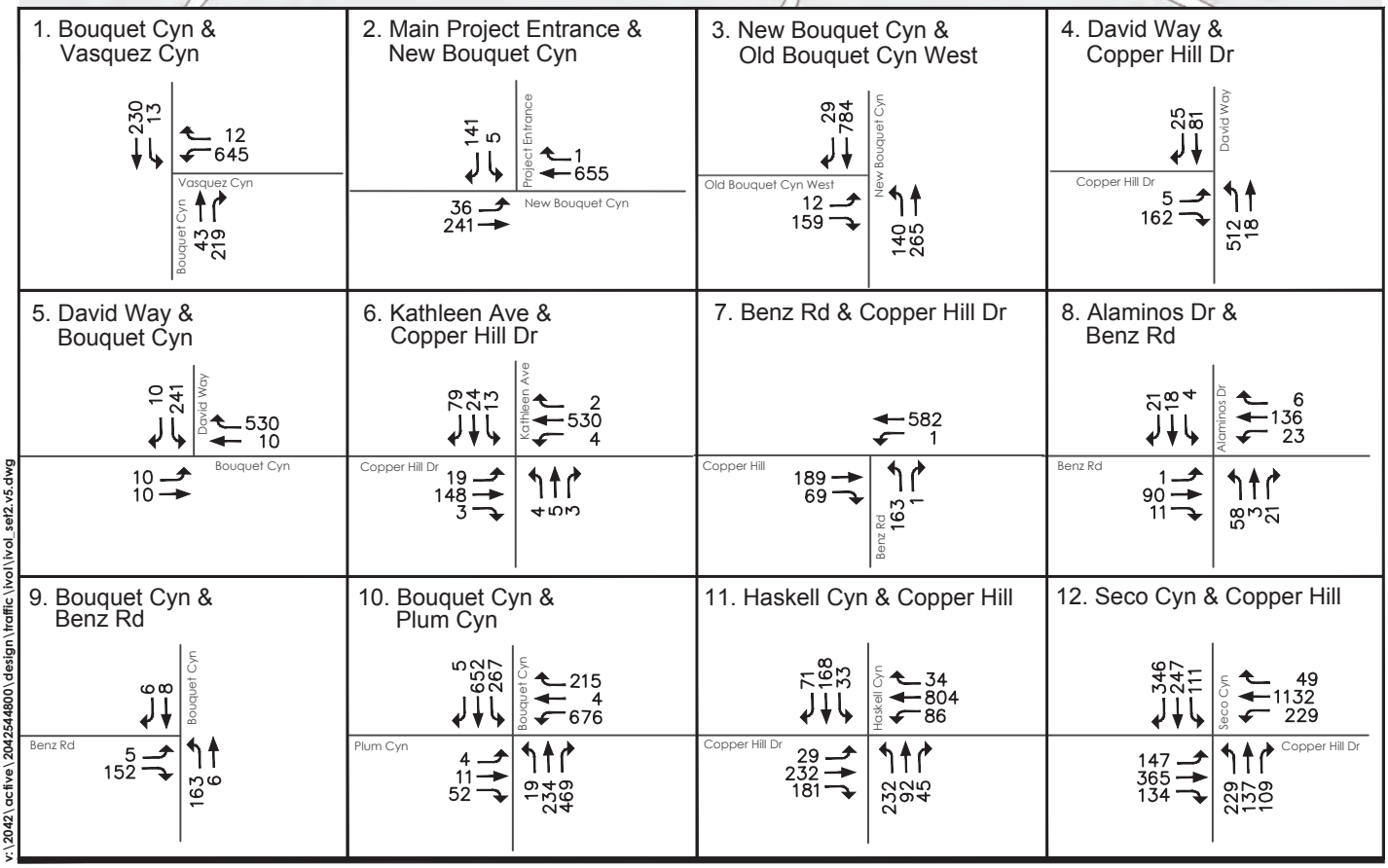


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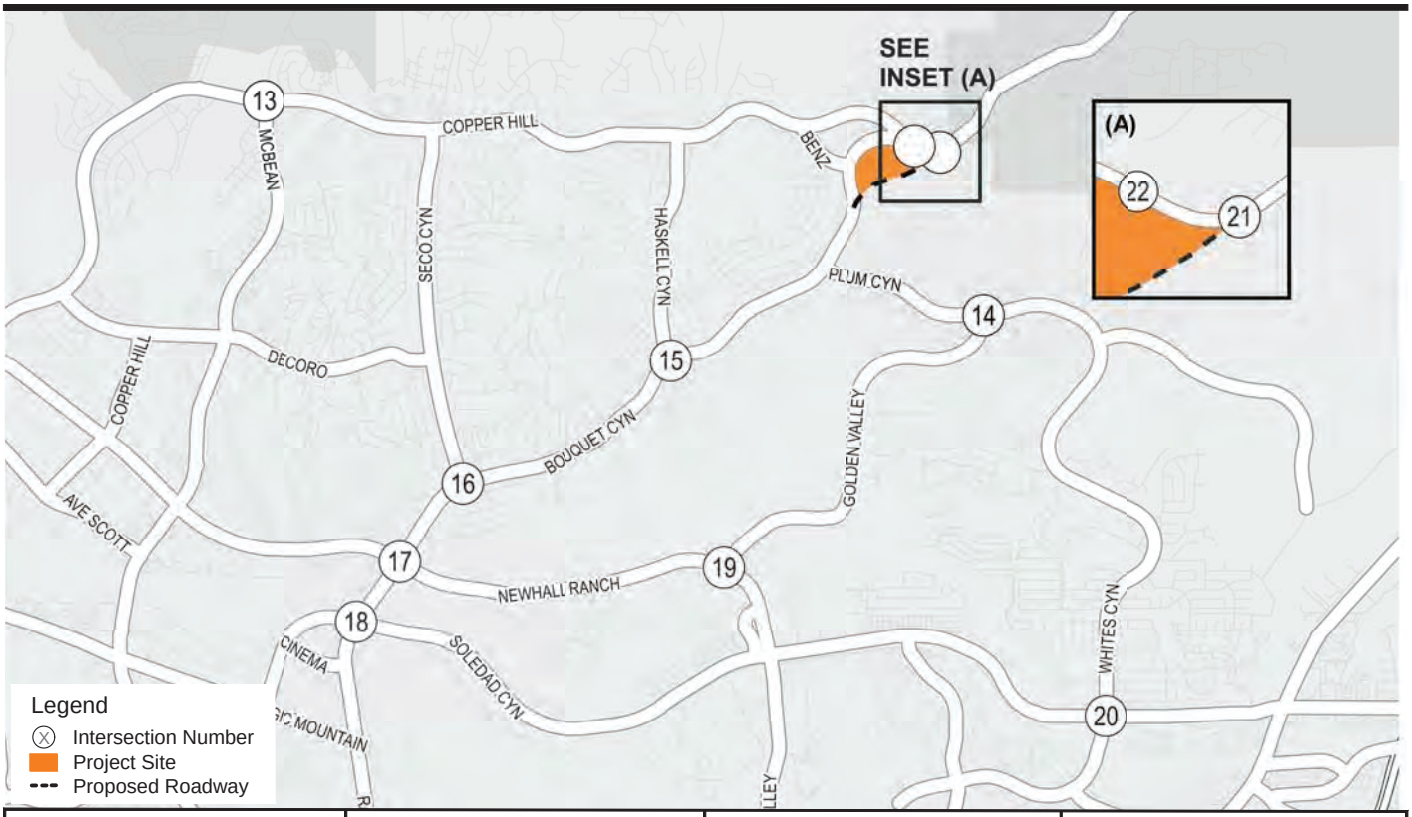
Figure 4-2

Existing plus Project
AM Peak Hour Volumes - Intersections 1-12



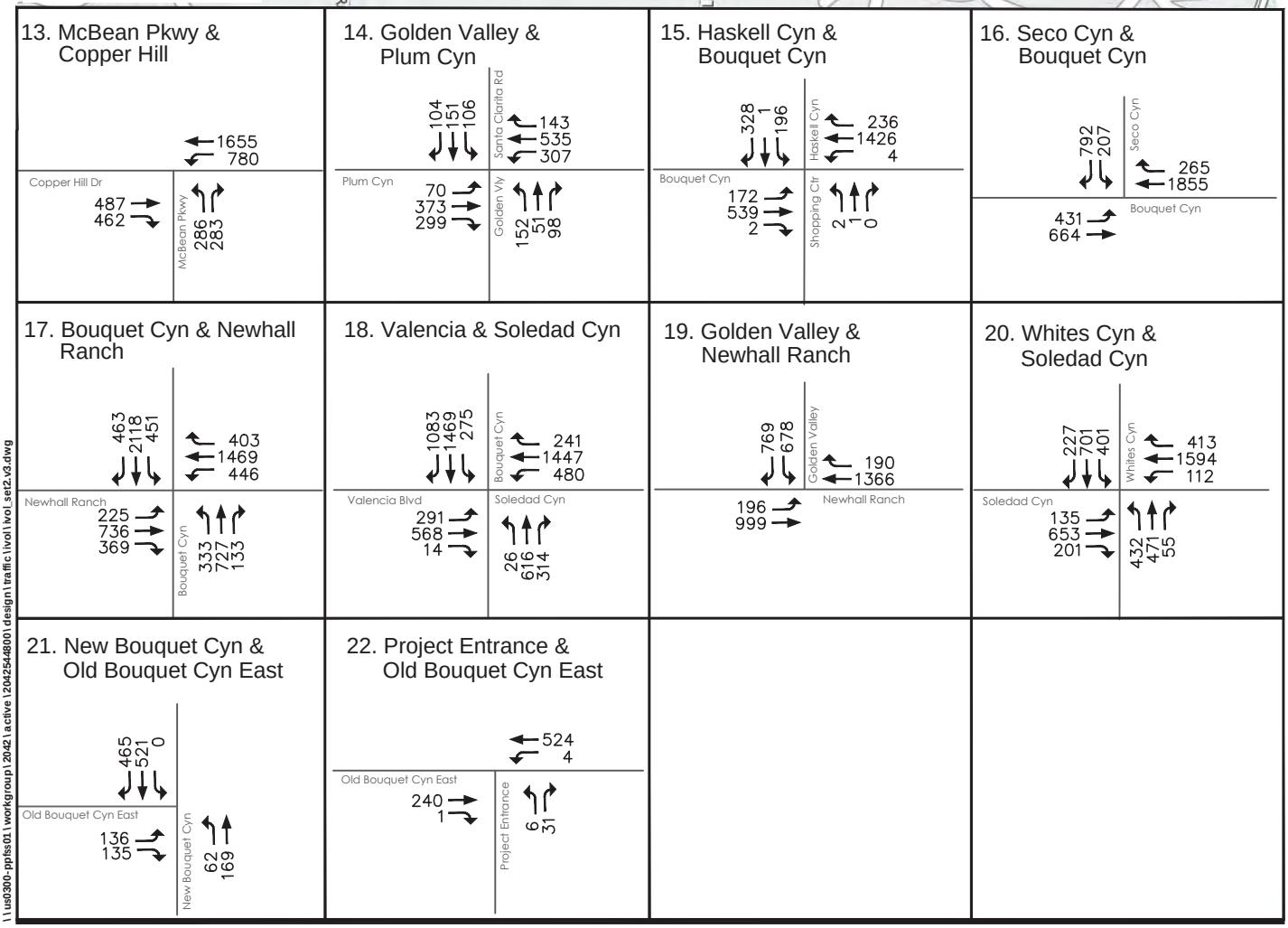


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Figure 4-3

Existing plus Project
AM Peak Hour Volumes - Intersections 13-22

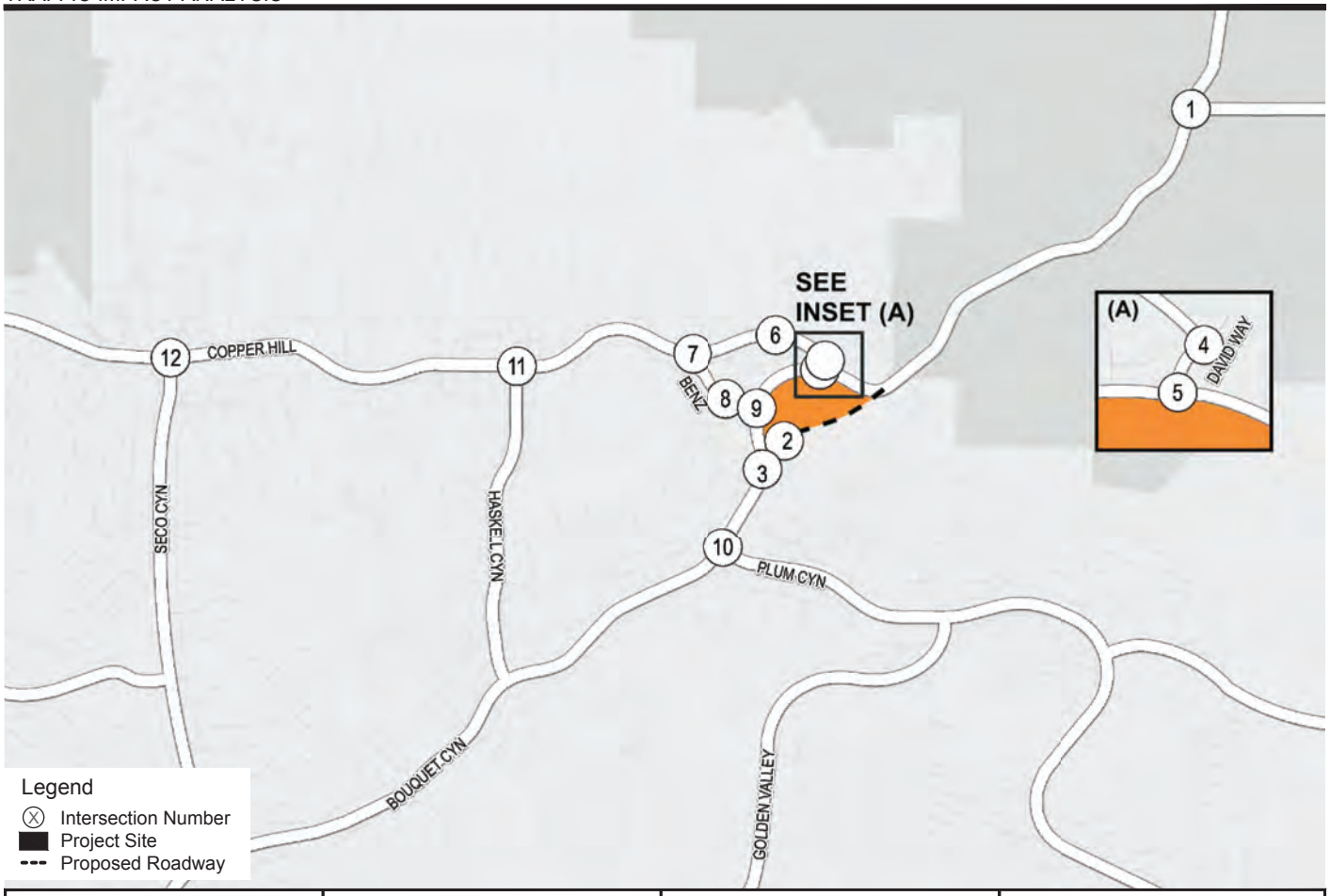

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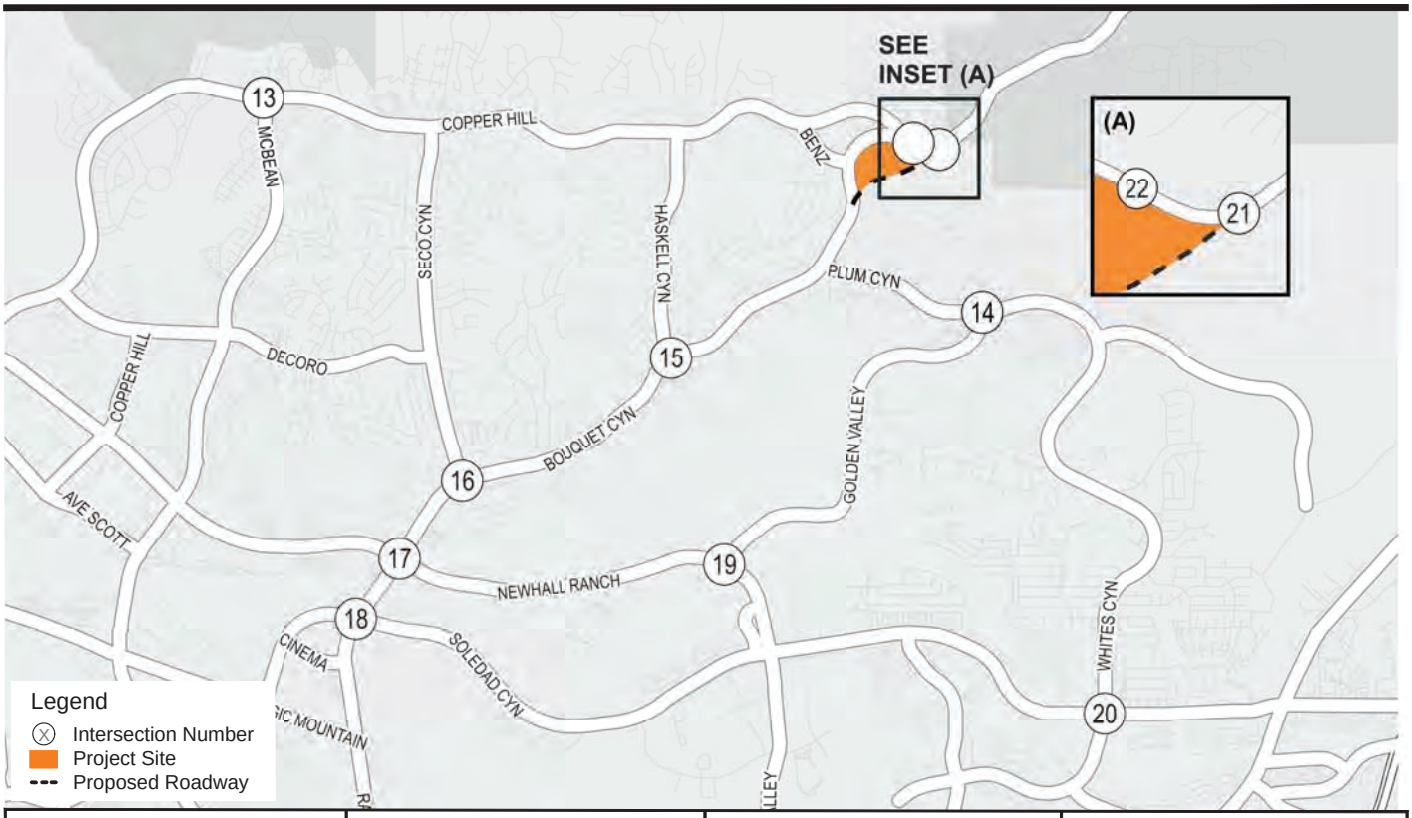
Figure 4-4
Existing plus Project
PM Peak Hour Volumes - Intersections 1-12



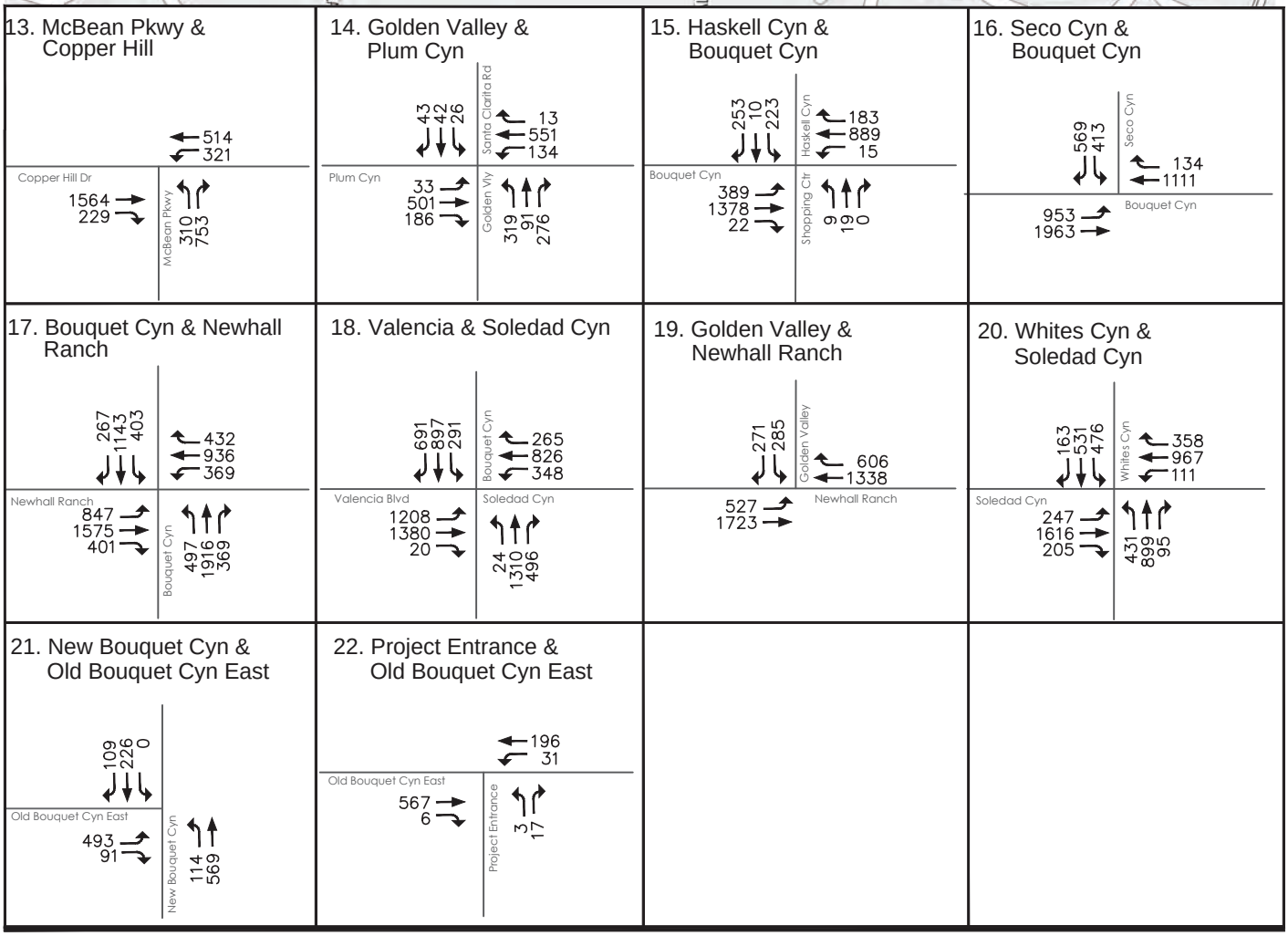


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Figure 4-5

Existing plus Project
PM Peak Hour Volumes - Intersections 13-22

Table 4-1 Intersection Delay and LOS Summary – Existing Plus Project Conditions

Intersection	Traffic Control	Existing (2018)				Existing Plus Project				Increase	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
		Delay (sec/veh)/ ICU	LOS	Delay (sec/veh)/ ICU	LOS	Delay (sec/veh)/ ICU	LOS	Delay (sec/veh)/ ICU	LOS	Delay (sec/veh)	Delay (sec/veh)
1. Bouquet Cyn & Vasquez Cyn[5]	Two-Way Stop [1]	0.68	B	0.87	D	0.68	B	0.87	D	0.0	0.0
2. Project Entrance & New Bouquet Cyn	Two-Way Stop [1]	n/a [3]	--	n/a [3]	--	12.6	B	10.3	B	12.6	10.3
3. New Bouquet Cyn & Old Bouquet Cyn West	Two-Way Stop [1]	n/a [3]	--	n/a [3]	--	15.9	C	15.8	C	15.9	15.8
4. David & Copper Hill	Two-Way Stop [1]	10.7	B	12.7	B	10.8	B	12.9	B	0.1	0.2
5. David & Old Bouquet Cyn East	Signal	31.9	C	119.4	F	8.6	A	255.4	F	-23.3	**136.0**
6. Kathleen & Copper Hill	All-Way Stop [2]	30.4	D	18.1	C	32.0	D	18.7	C	1.6	0.6
7. Benz & Copper Hill	Two-Way Stop [1]	28.9	D	19.9	C	34.9	D	21.4	C	**6.0**	1.5
8. Alaminos & Benz	All-Way Stop [2]	8.0	A	8.1	A	8.2	A	8.4	A	0.2	0.3
9. Old Bouquet Cyn West [4] & Benz	Two-Way Stop [1]	19.6	C	12.6	B	9.1	A	9.2	A	-10.5	-3.4
10. Bouquet Cyn & Plum Cyn	Signal	33.7	C	29.6	C	33.2	C	30.5	C	-0.5	0.9
11. Haskell Cyn & Copper Hill	Signal	292.3	B	217.8	F	290.9	F	217.0	C	-1.4	-0.8
12. Seco Cyn & Copper Hill	Signal	38.3	D	28.9	C	38.4	D	29.1	C	0.1	0.2
13. McBean & Copper Hill	Signal	22.5	C	24.6	C	22.6	C	24.8	C	0.1	0.2
14. Golden Valley & Plum Cyn	Signal	29.6	B	21.6	C	29.8	C	21.9	C	0.2	0.3
15. Haskell Cyn & Bouquet Cyn	Signal	54.7	D	53.6	D	54.0	D	52.7	D	-0.7	-0.9
16. Seco Cyn & Bouquet Cyn	Signal	22.7	C	35.7	D	23.0	C	37.2	D	0.3	-0.5
17. Bouquet Cyn & Newhall Ranch	Signal	44.2	D	58.4	E	45.3	D	59.4	E	1.1	1.0
18. Bouquet Cyn & Soledad Cyn	Signal	33.4	C	48.5	D	33.6	C	49.4	D	0.2	0.9
19. Golden Valley & Newhall Ranch	Signal	29.5	C	20.1	C	30.0	C	20.3	C	0.5	0.2
20. Whites Cyn Rd & Soledad Cyn Rd	Signal	45.8	D	49.7	D	45.9	D	49.8	D	0.1	0.1
21. New Bouquet Cyn & Old Bouquet Cyn East	Signal	n/a [3]	--	n/a [3]	--	16.1	B	19.9	B	**16.1[6]**	**19.9[6]**
22. Project Entrance & Old Bouquet Cyn East	Two-Way Stop [1]	n/a [3]	--	n/a [3]	--	11.0	B	13.5	C	11.0	13.5

Notes: Shaded cells indicate a significant impact; n/a = Not applicable (i.e., intersection does not exist under Existing conditions)
[1] Delay represents the highest stop-controlled approach
[2] Delay represents the average for the entire intersection
[3] Future intersection
[4] This section of Bouquet Canyon Road becomes Old Bouquet Canyon Road West with the realignment of the roadway
[5] ICU methodology per LA County guidelines
[6] Under stop control the intersection would operate at LOS F, a traffic signal was assumed as part of the Project

Table 4-2 Mitigation Measures for Project Impacts – Existing Plus Project Conditions

Location	Jurisdiction	Mitigation
5. David & Old Bouquet Cyn East	City	Remove existing traffic signal Close David Way between Old Bouquet Canyon Road and Copper Hill Drive (eliminates south leg of the David Way and Copper Hill Drive intersection) Construct new east leg at David Way at Copper Hill Drive intersection and connect to Old Bouquet Canyon Road At the David Way and Copper Hill Drive intersection, construct median island to restrict the left-turn movement (southbound left) from David Way to Copper Hill Drive and install stop sign at David Way
7. Benz & Copper Hill	City	Construct median island to restrict left-turn movement (northbound left) from Benz Road to Copper Hill Drive.
21. New Bouquet Cyn & Old Bouquet Cyn East	City	Installation of traffic signal

Table 4-3 Intersection Delay and LOS Summary – Existing Plus Project Conditions with Mitigation

	Existing without Project				Existing with Project and Mitigation				Net Change with Mitigation	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
Location	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Delay (sec/veh)
4. David & Copper Hill [2]	10.7	B	12.7	B	12.3	B	9.3	A	1.6	-3.4
5. David & Old Bouquet Cyn East	31.9	C	119.4	F	--[2]	--[2]	--[2]	--[2]	--	--
7. Benz & Copper Hill	28.9	D	19.9	C	9.5	A	11.3	B	-19.4	-8.6
21. New Bouquet Cyn & Old Bouquet Cyn East	n/a [1]	--	n/a [1]	--	25.9	C	17.9	B	--	--

[1] Future intersection
[2] David Way at Old Bouquet Canyon East intersection is removed and replaced with the improved David Way/Copper Hill intersection

The realignment of Bouquet Canyon Road will alter and improve circulation flow on Benz Road, Copper Hill Drive, Kathleen Avenue, David Way, and Bouquet Canyon Road. Mitigation measures that address the Project's significant impacts are part of a collective set of improvements for the immediate area.

To mitigate the Project's impact at the Benz Road and Copper Hill Drive intersection, mitigation includes the construction of a median island to restrict left-turn movements (northbound left) from Benz Road to westbound Copper Hill Drive. This modification will also reduce the amount on non-local cut-through traffic that currently utilized Benz Road. Access to Benz Road at Copper Hill Drive will be right/in-right/out and left-turn in, and the left-turn out will be prohibited. Vehicles may make a right-turn from Benz Road, followed by a U-turn at Kathleen Avenue to head westbound on Copper Hill Drive.

To mitigate the Project's impact at David Way at Old Bouquet Canyon Road, the traffic signal at this intersection will be removed and David Way between Old Bouquet Canyon Road and Copper Hill Drive will be closed. The roadway closure will eliminate the south leg of the David Way and Copper Hill Drive intersection and a new east leg will be constructed to connect with Old Bouquet Canyon Road. At the David Way and Copper Hill Drive intersection, a median island to restrict the left-turn movement (southbound left) from David Way to eastbound Copper Hill Drive will be constructed and David Way will be under stop control with right-in/right-out and left-in movements allowed (no left-turn out allowed).

At the New Bouquet Canyon Road at Old Bouquet Canyon Road intersection, a traffic signal will be installed.

Each of the identified improvements would fully mitigate the Project's significant impact, as shown in **Table 4-3.**

The following describes other improvements that will occur in the immediate area; however, these locations are not significantly impacted by the Project under Existing plus Project conditions but the Project will be responsible for its fair-share of the cost of these improvements (see discussion in Section 4.2.2).

The roadway segment between Benz Road and Kathleen Avenue will be widened from 2-lanes to 4-lanes (two lanes in each direction) and a traffic signal installed at Kathleen Avenue and Copper Hill Drive. The segment of Copper Hill Drive between Kathleen Avenue and the new realigned Bouquet Canyon Road will generally be 2 lanes (one lane in each direction), except for a short segment just east of Kathleen Avenue, which will be 3 lanes (2 lanes westbound and 1 lane eastbound).

Adjacent to the David Way at Old Bouquet Canyon Road intersection, Hob Court will terminate into a cul-de-sac (currently connects to Old Bouquet Canyon Road) and Pin Court will be removed (currently connects to Hob Court).

On the westerly side of the Project site, a median island at the Old Bouquet Canyon Road (West) and New Bouquet Canyon Road intersection will be constructed. The median island will restrict left-turn movements (southbound left) from Old Bouquet Canyon Road (West) to eastbound New Bouquet Canyon Road.

4.2 INTERIM YEAR CUMULATIVE CONDITIONS ANALYSIS

As previously discussed in **Section 2.2.1**, Cumulative Conditions traffic volumes presented in this analysis are derived by the SCVCTM. An interim horizon year of 2028 is utilized to encompass the broad range of Related Projects within the study area.

Interim Year cumulative conditions ADT volumes for the local Santa Clarita Valley area for the no-Project condition are illustrated in **Figure 4-6**. The corresponding no-Project AM peak hour turning movement volumes are illustrated in **Figure 4-7** and **Figure 4-8,** and the PM peak hour turning movement volumes are illustrated in **Figure 4-9** and **Figure 4-10**.

Interim Year cumulative conditions ADT volumes for the with-Project condition are provided in **Figure 4-11**. The corresponding with-Project AM peak hour turning movement volumes are illustrated in **Figure 4-12** and **Figure 4-13,** and the PM peak hour turning movement volumes are illustrated in **Figure 4-14** and **Figure 4-15**.

4.2.1 Interim Year Cumulative Conditions Impact Analysis

Peak hour intersection levels of service calculated from the Interim Year cumulative conditions traffic forecasts referenced above can be found in **Table 4-4**, which provides a comparison between the no-Project and the with-Project conditions. As discussed in Section 2.1.2, HCM delay methodology was used to analyze both the signalized intersections and the stop-controlled intersections.

For the Bouquet Canyon at Vasquez Canyon intersection, the ICU methodology was utilized per LA County guidelines. For this intersection, cumulative with Project conditions are compared to existing conditions.

For this analysis, existing lanes and existing signal timing settings were assumed for both no-Project and with-Project conditions. The table indicates that under cumulative conditions, the following nine intersections are forecast to be significantly impacted by the Project:

1. Bouquet Canyon Rd and Vasquez Canyon Rd
3. New Bouquet Canyon Rd and Old Bouquet Canyon Rd West
5. David Way and Old Bouquet Canyon Road East
6. Kathleen Ave and Copper Hill Dr
7. Benz Rd and Copper Hill Dr
14. Golden Valley Rd and Plum Canyon Rd
16. Seco Canyon Rd and Bouquet Canyon Rd
17. Bouquet Canyon Rd and Newhall Ranch Rd
19. Golden Valley Rd and Newhall Ranch Rd
21. New Bouquet Canyon Rd and Old Bouquet Canyon Rd East

Mitigation that addresses the above impacts is presented in the following Section.

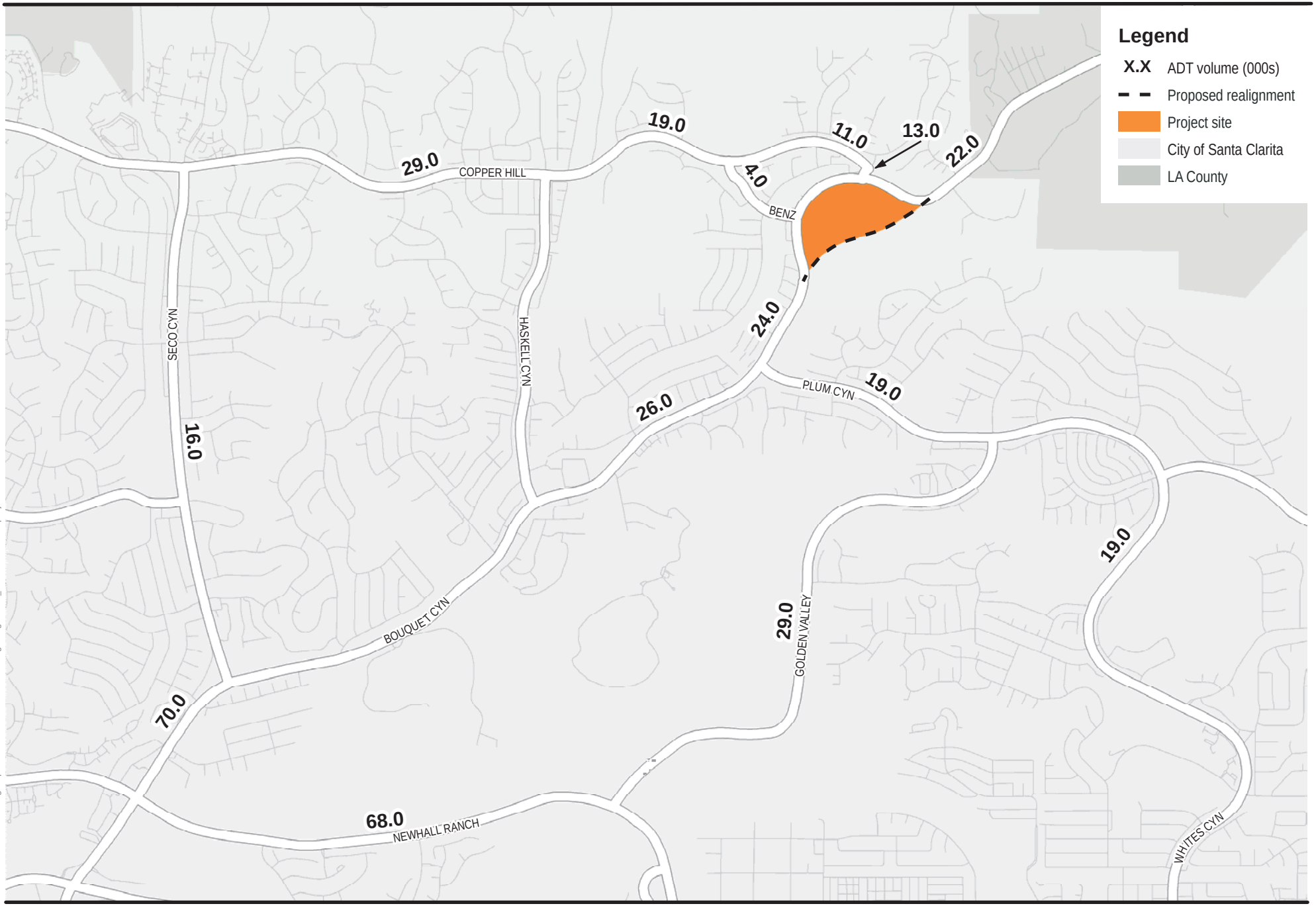

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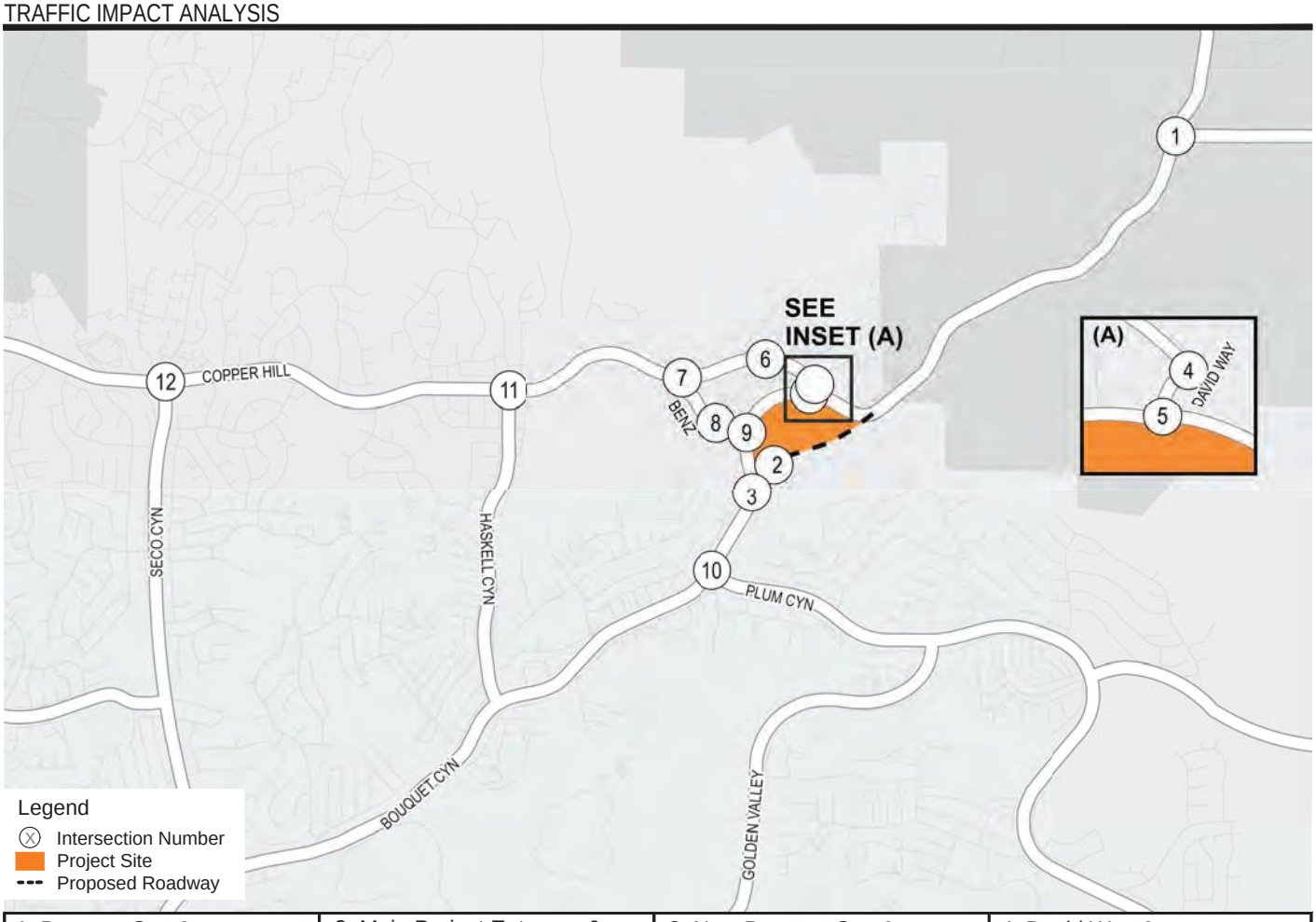
Figure 4-6
Interim Year Cumulative Without Project ADT Volumes



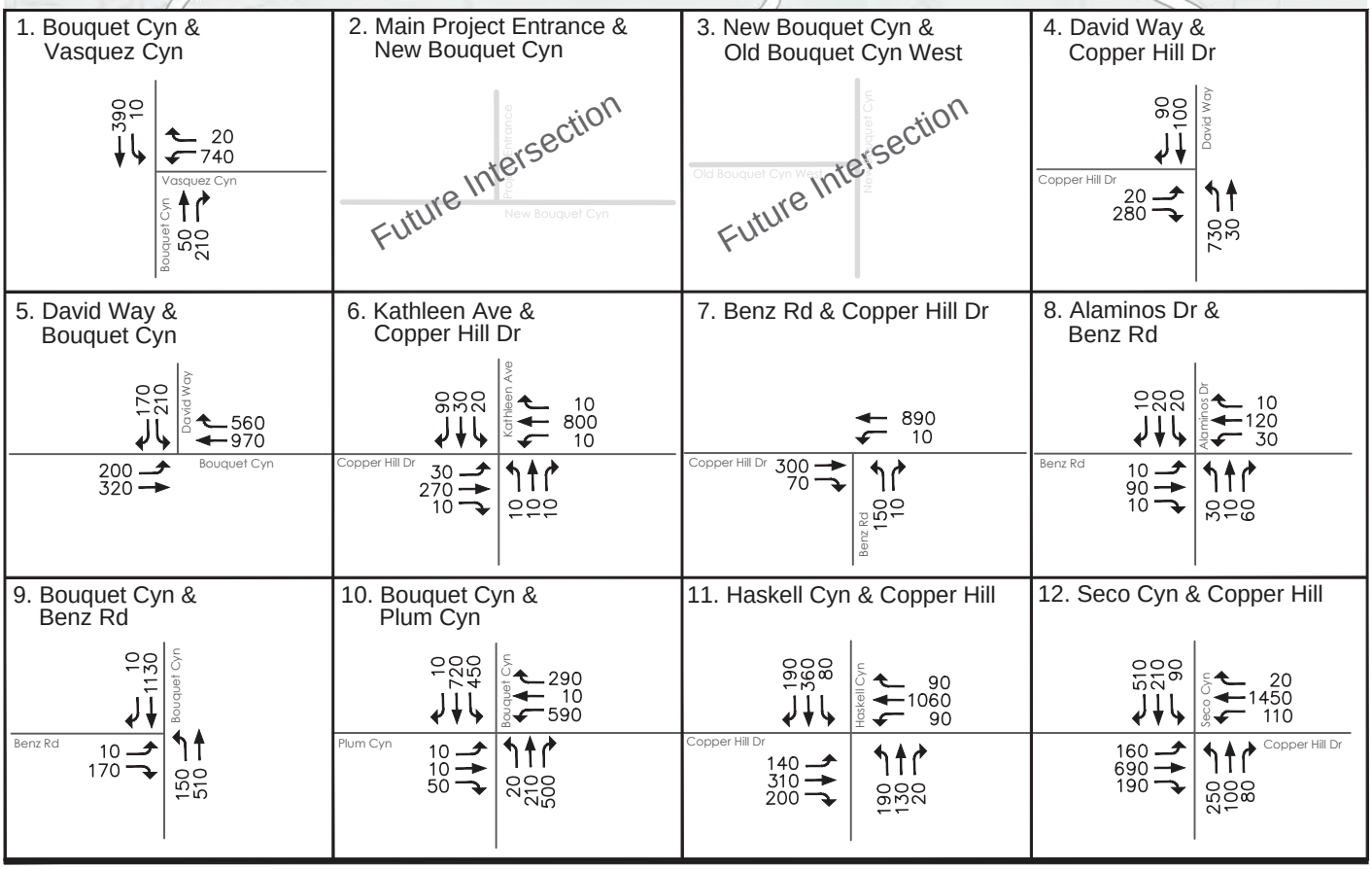


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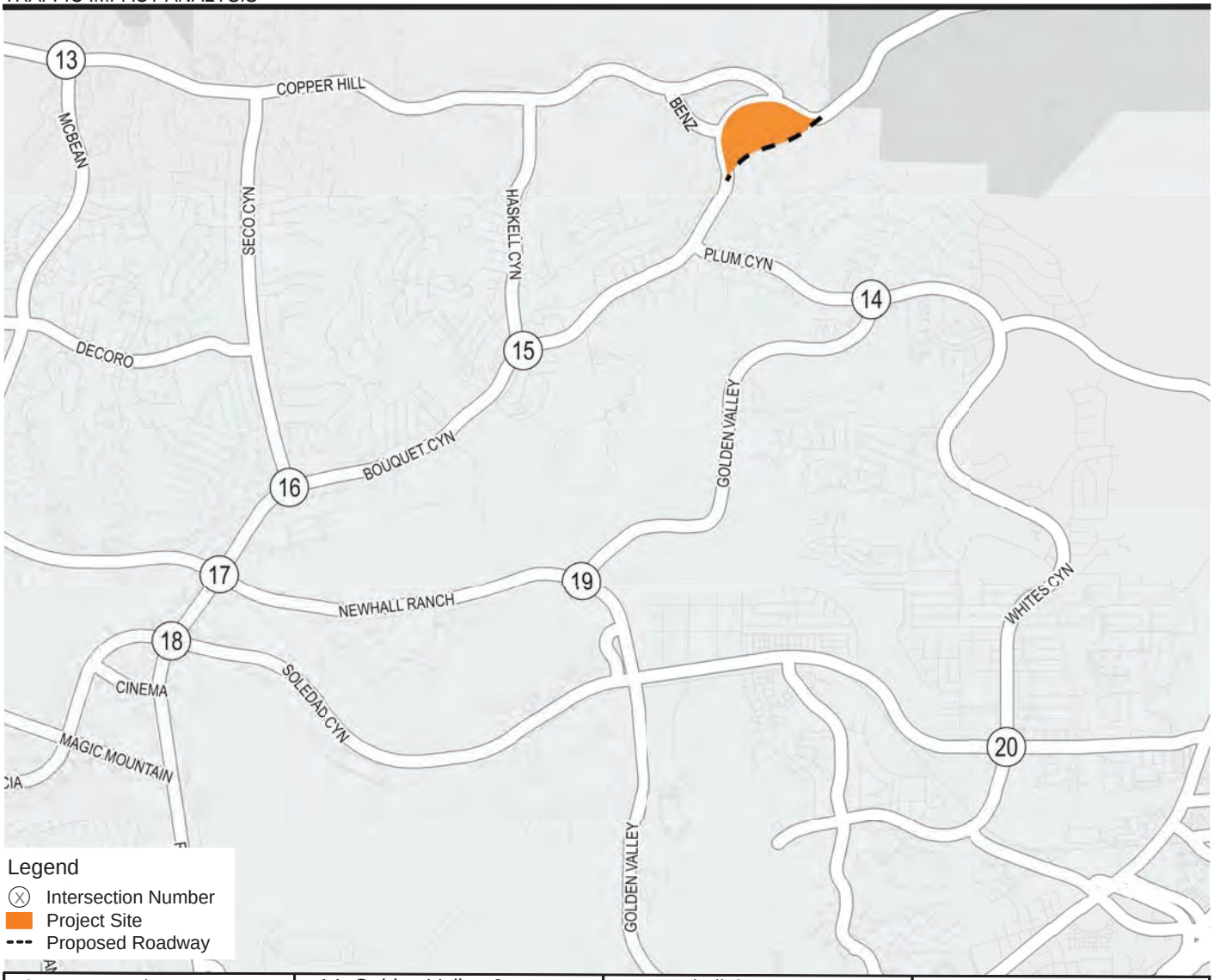
Figure 4-7

Interim Year Cumulative Without Project
AM Peak Hour Volumes - Intersections 1-12



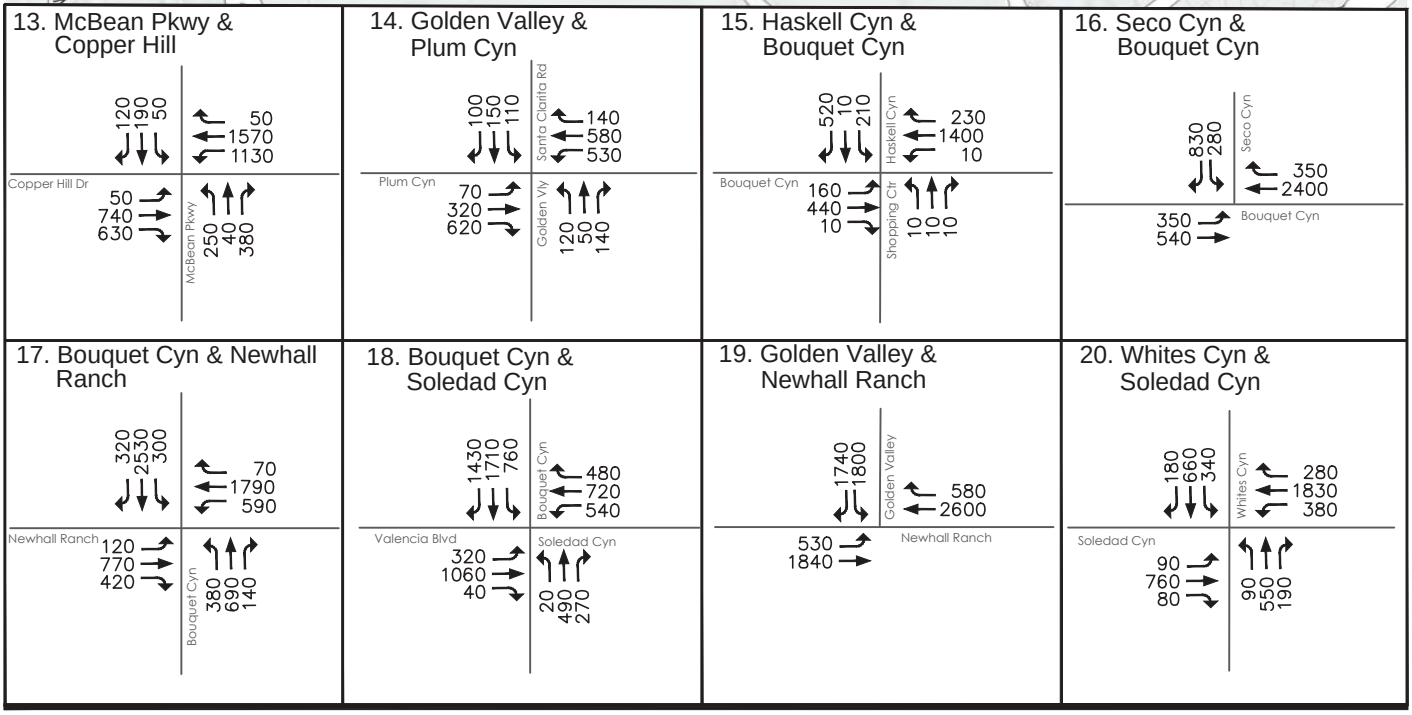


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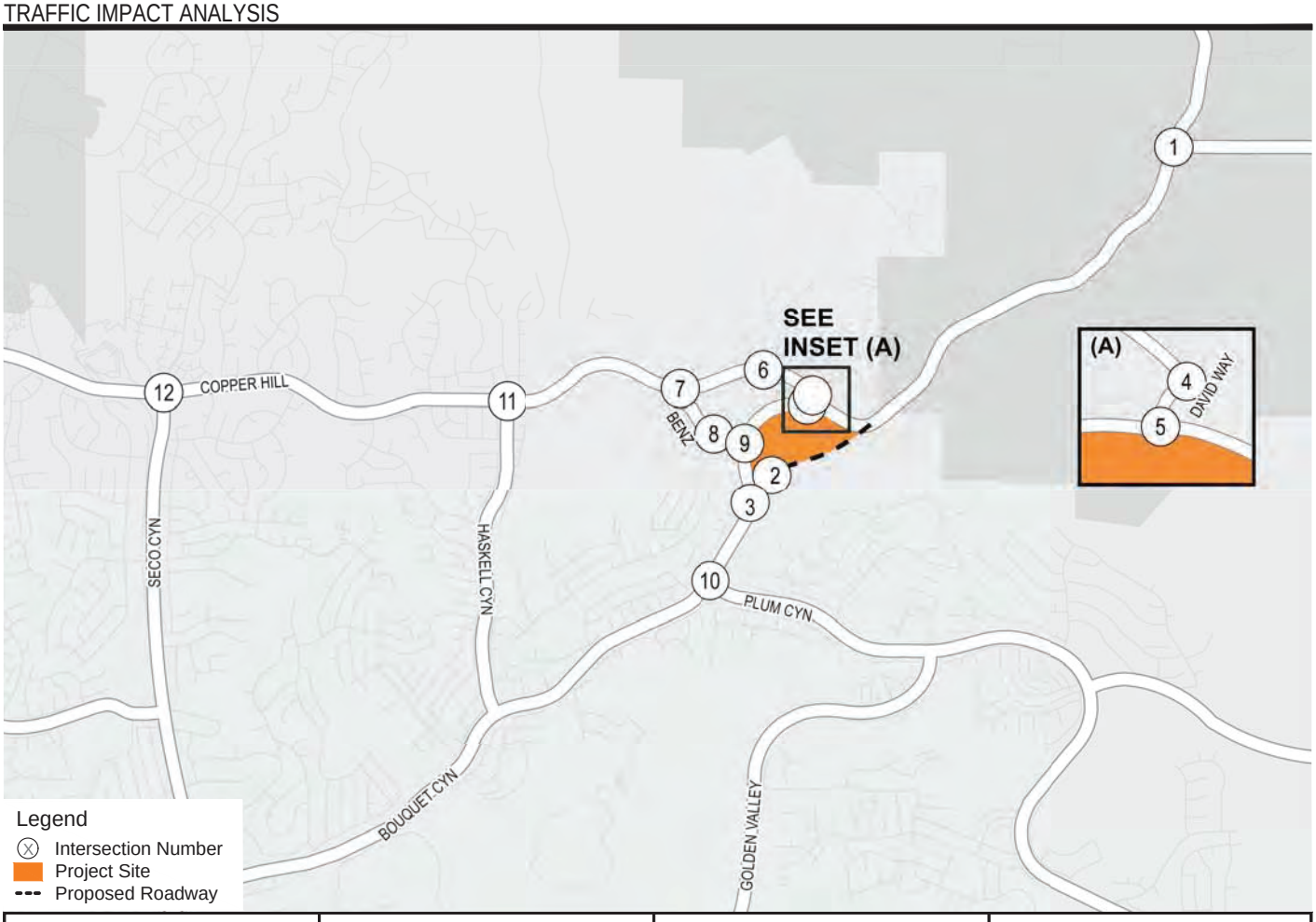
Figure 4-8
Interim Year Cumulative Without Project
AM Peak Hour Volumes - Intersections 13-20



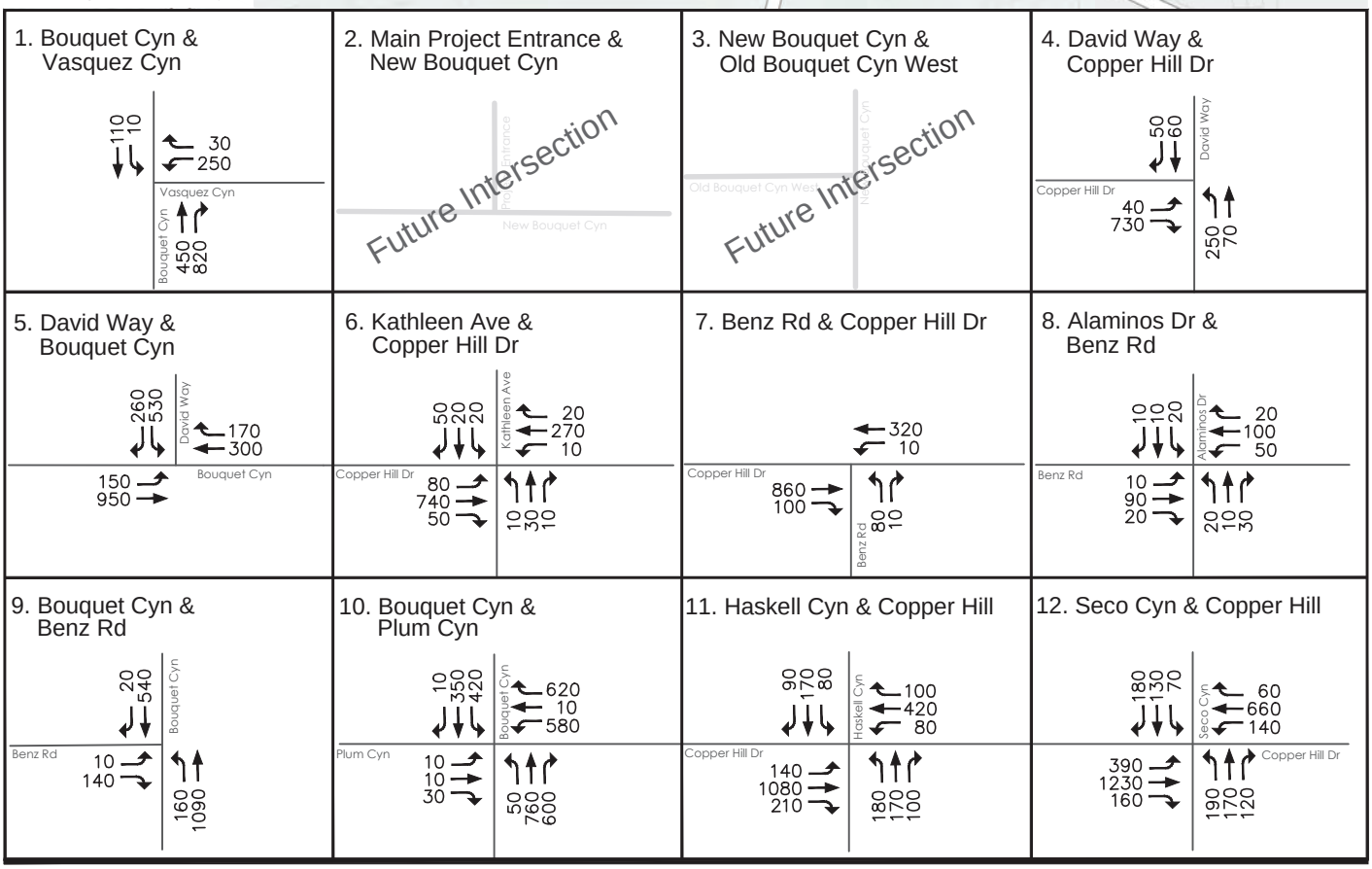


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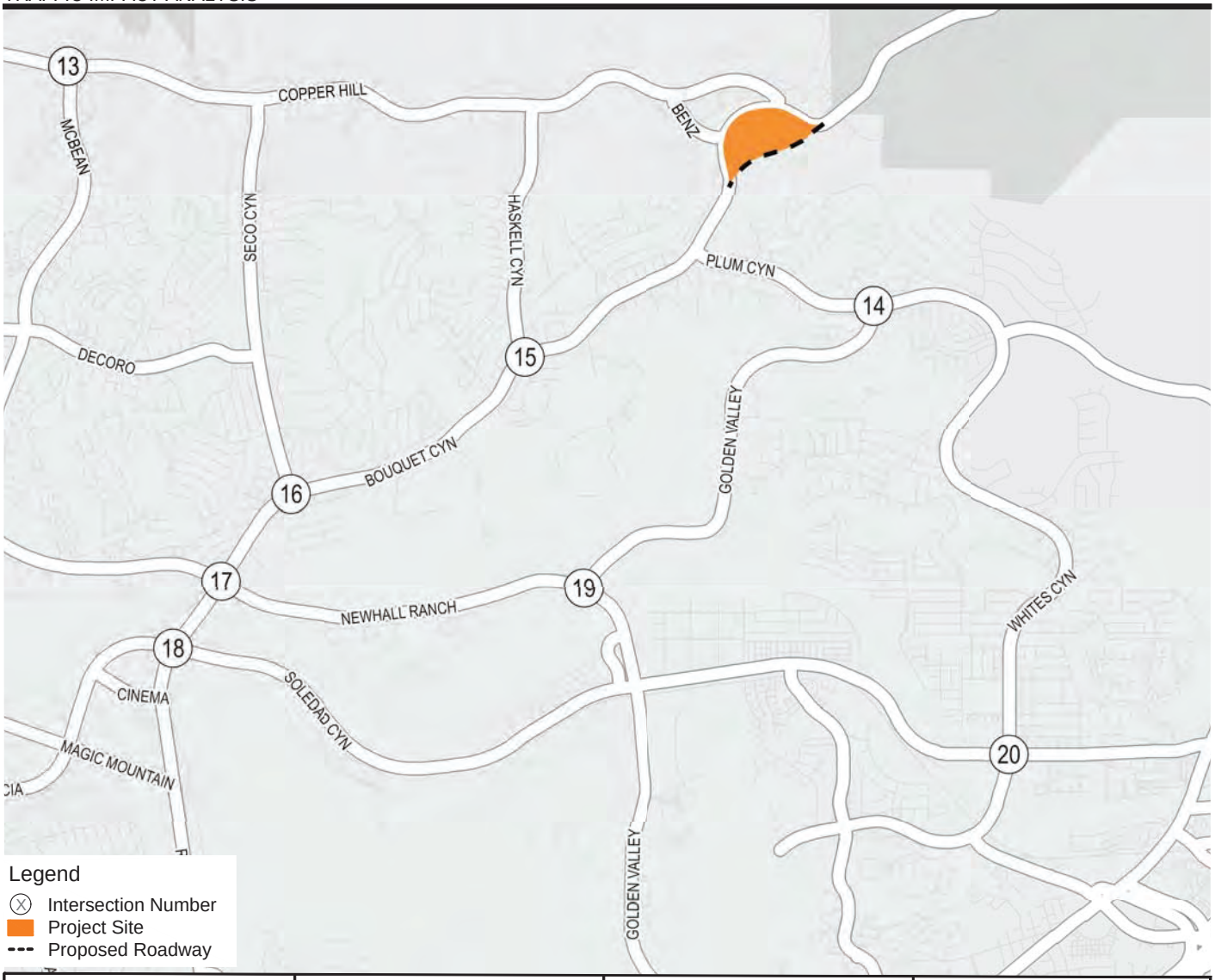
Figure 4-9

Interim Year Cumulative Without Project
PM Peak Hour Volumes - Intersections 1-12



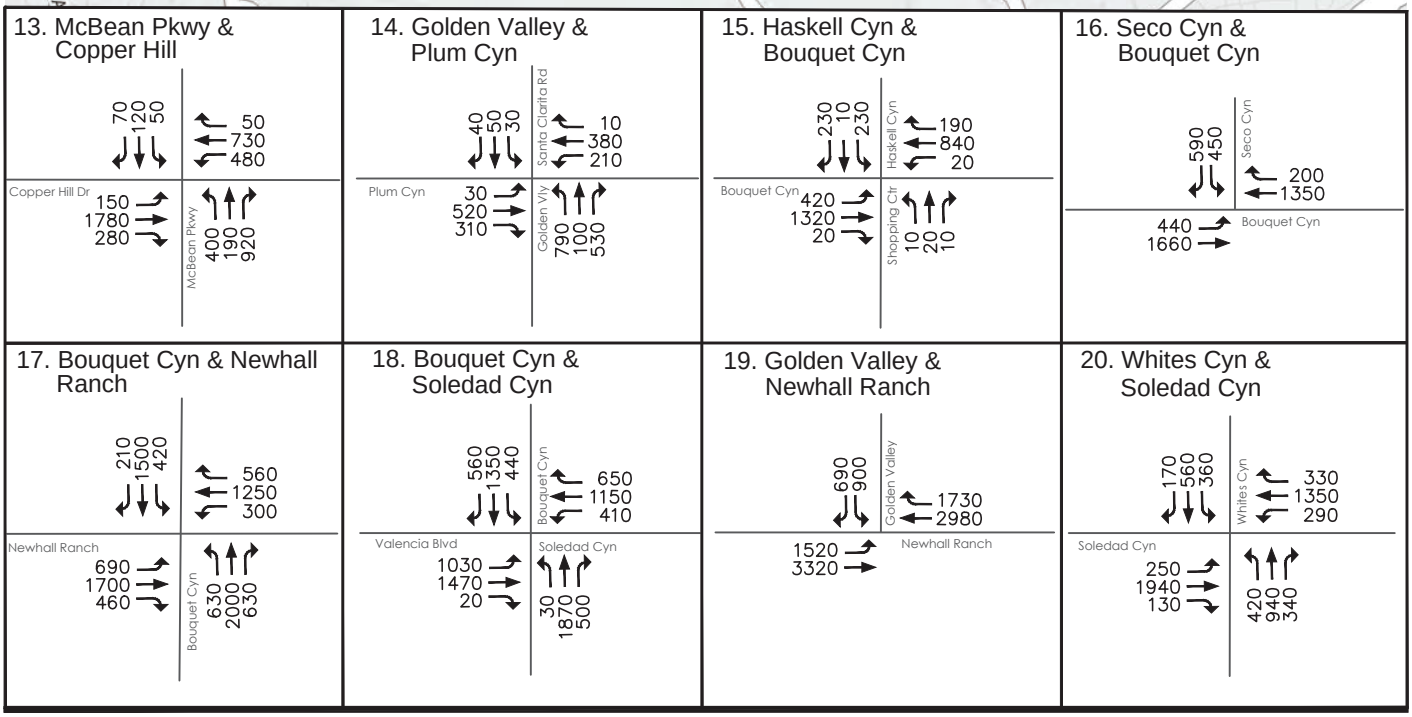


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Figure 4-10

Interim Year Cumulative Without Project
PM Peak Hour Volumes - Intersections 13-20

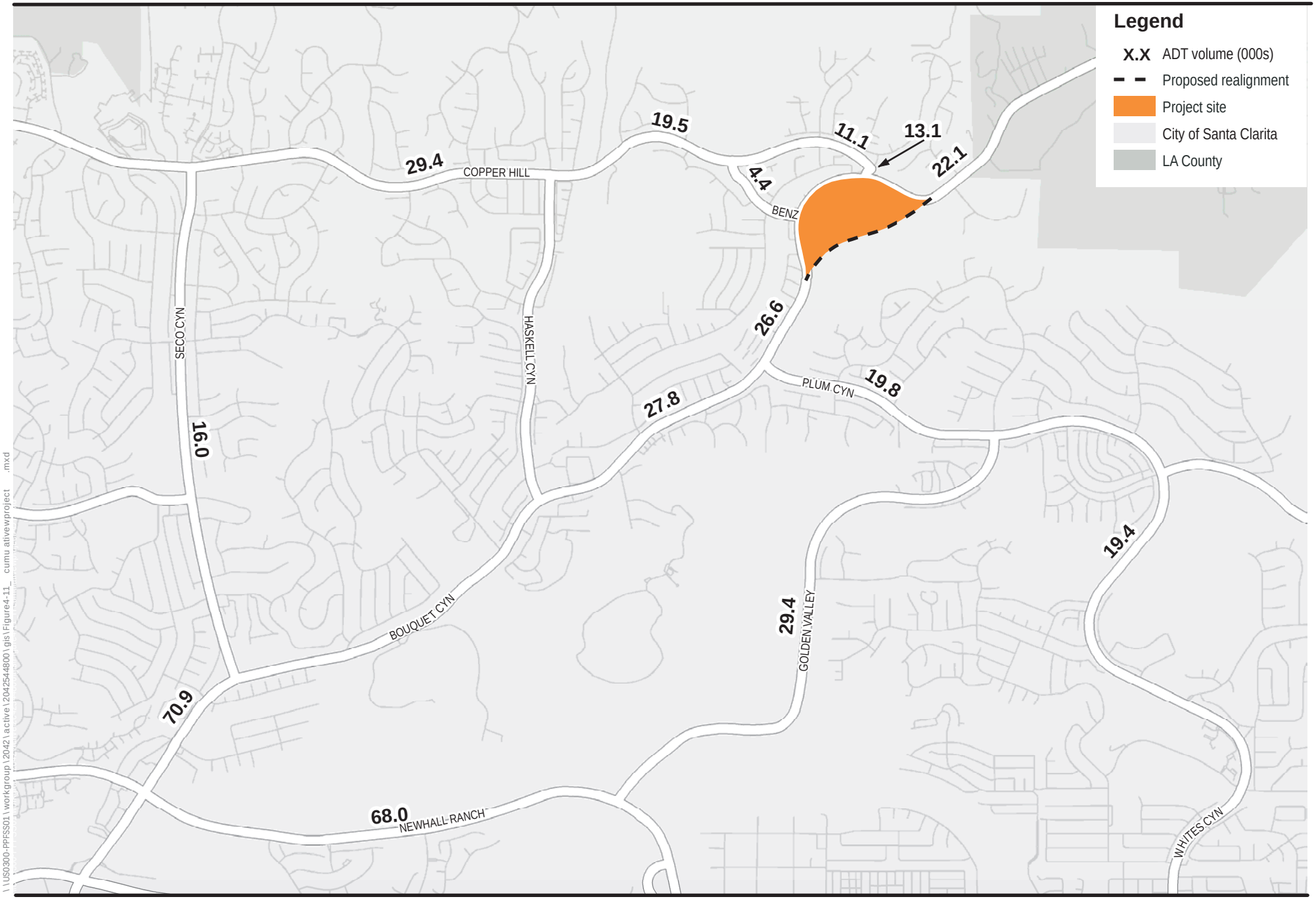

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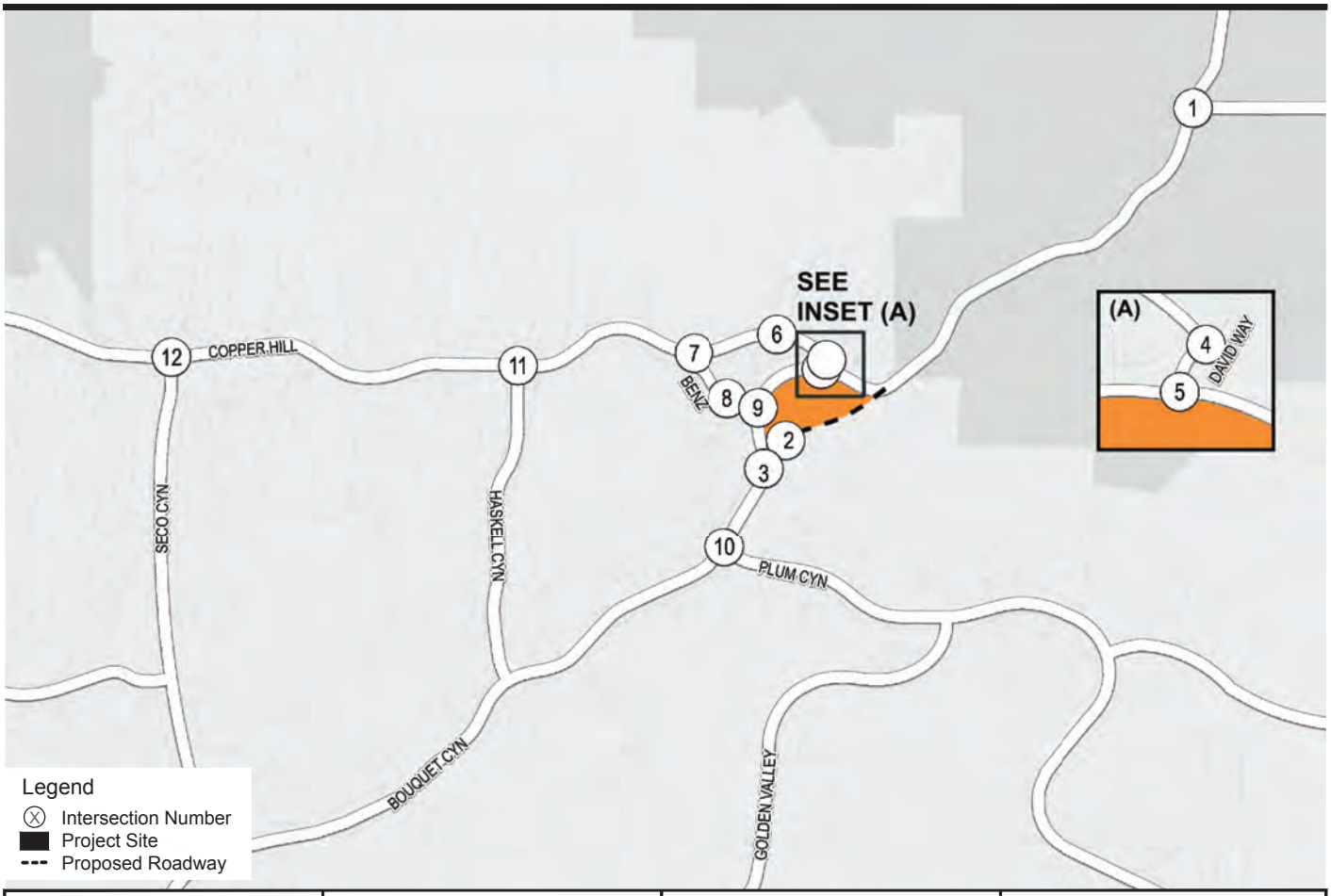
Figure 4-11
Interim Year Cumulative With Project ADT Volumes



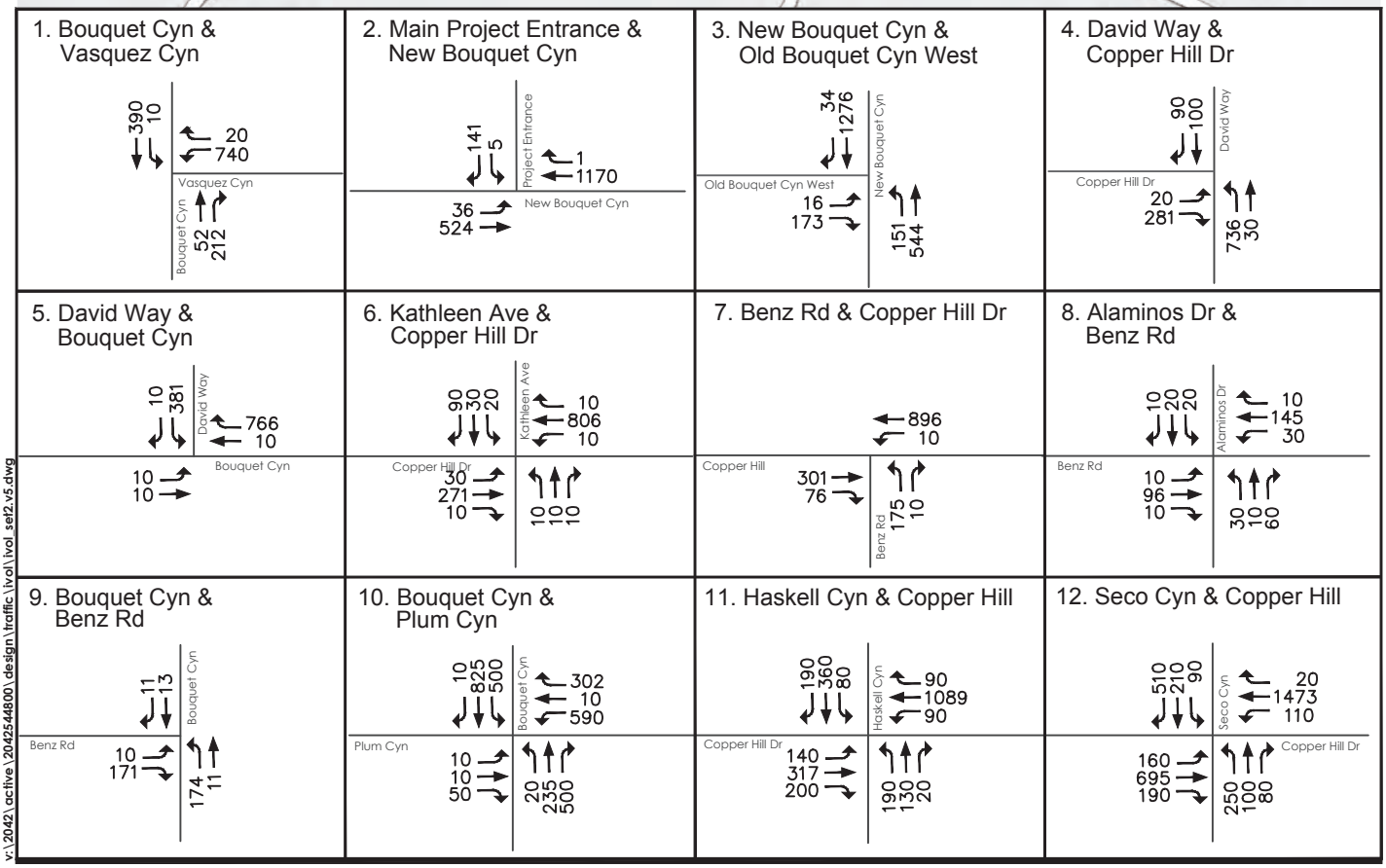


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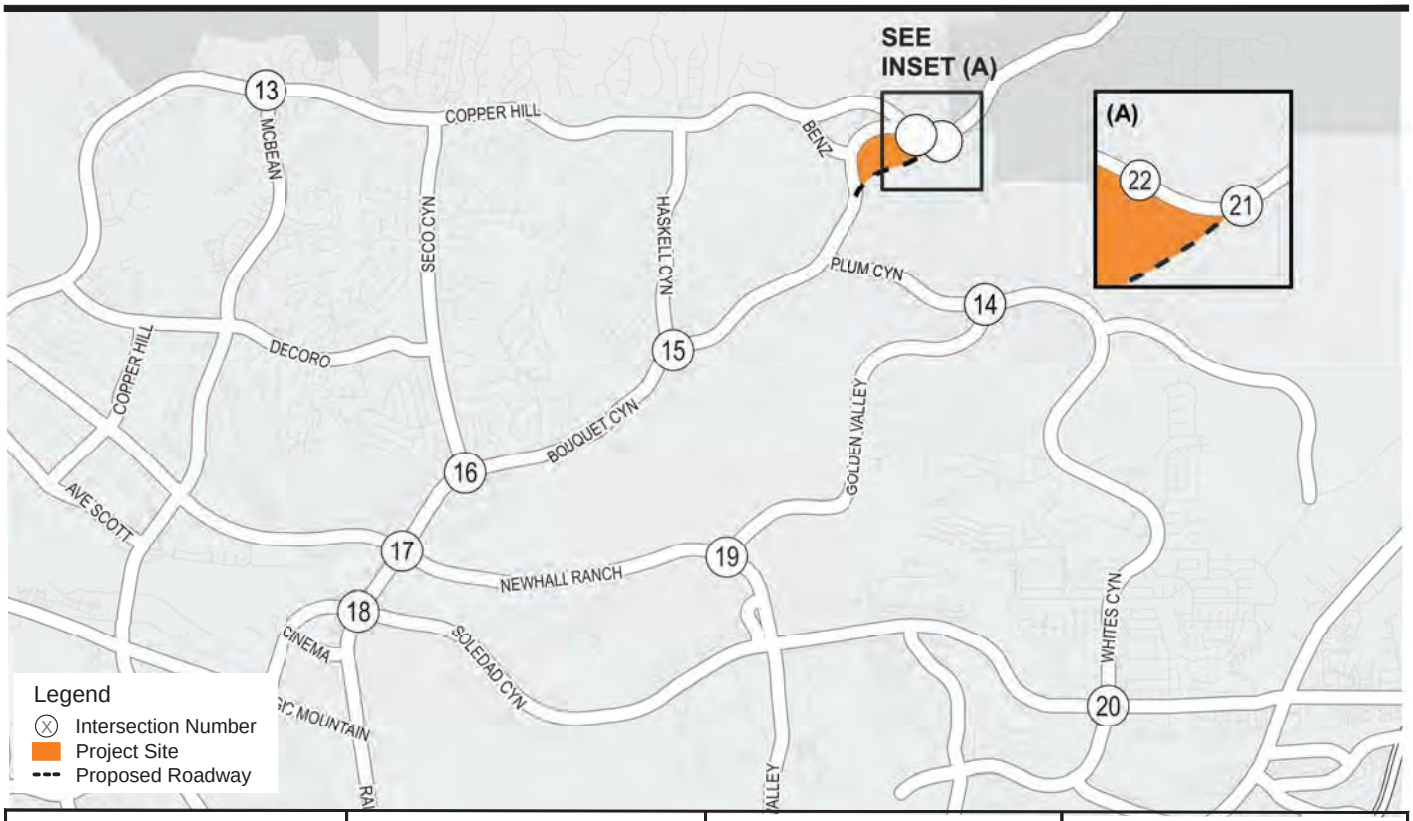
Figure 4-12

Interim Year Cumulative With Project
AM Peak Hour Volumes - Intersections 1-12



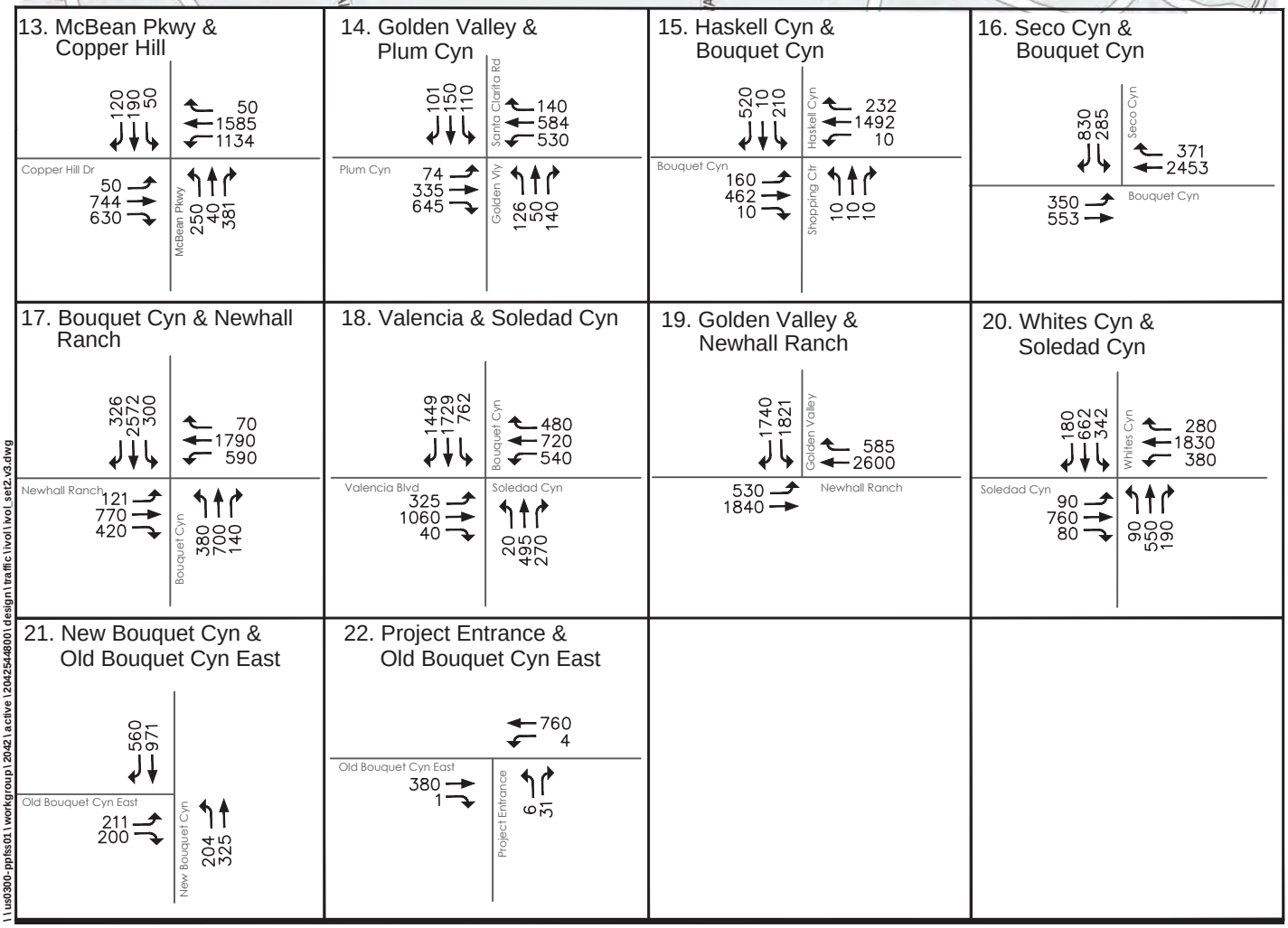


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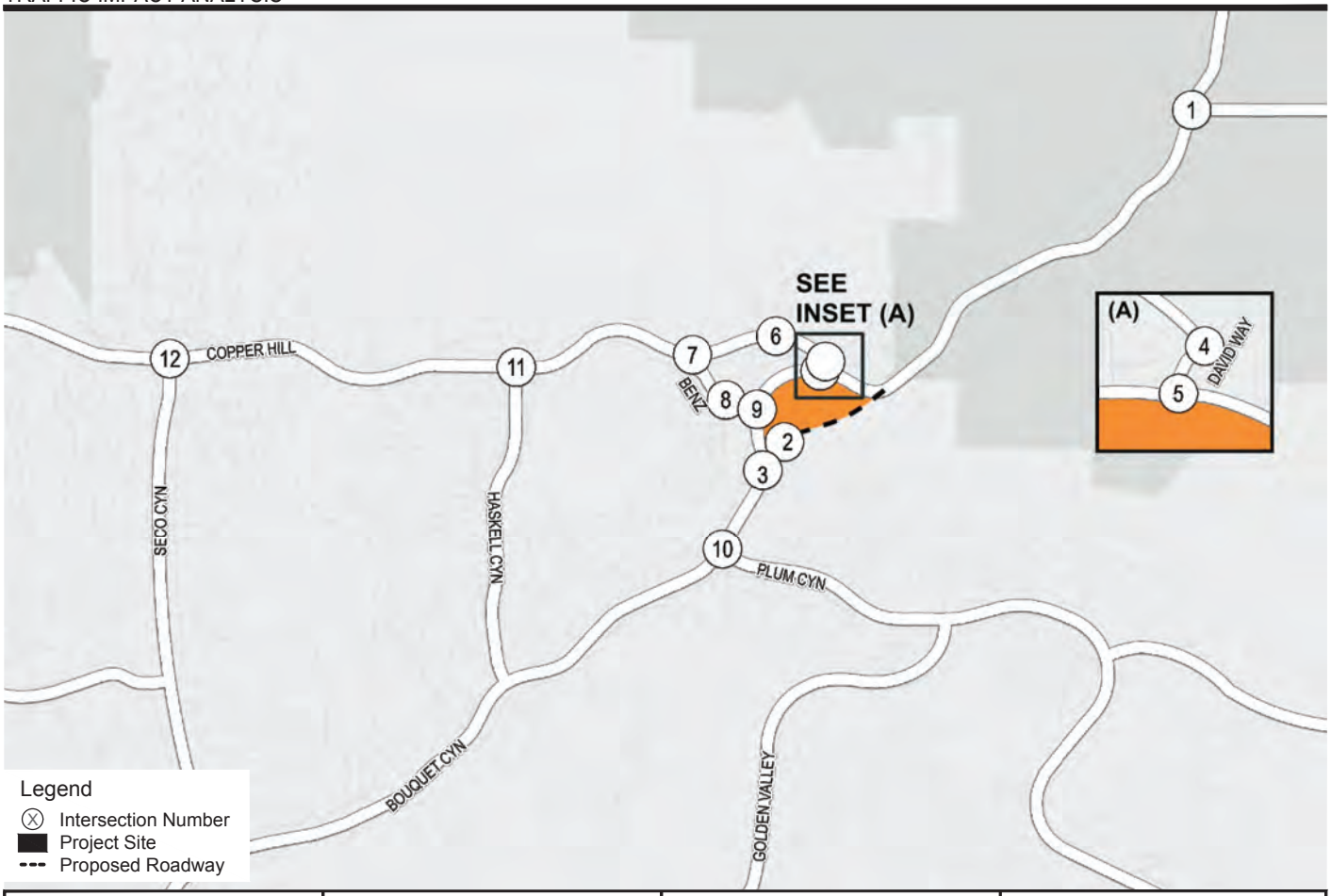
Figure 4-13

Interim Year Cumulative With Project
AM Peak Hour Volumes - Intersections 13-22



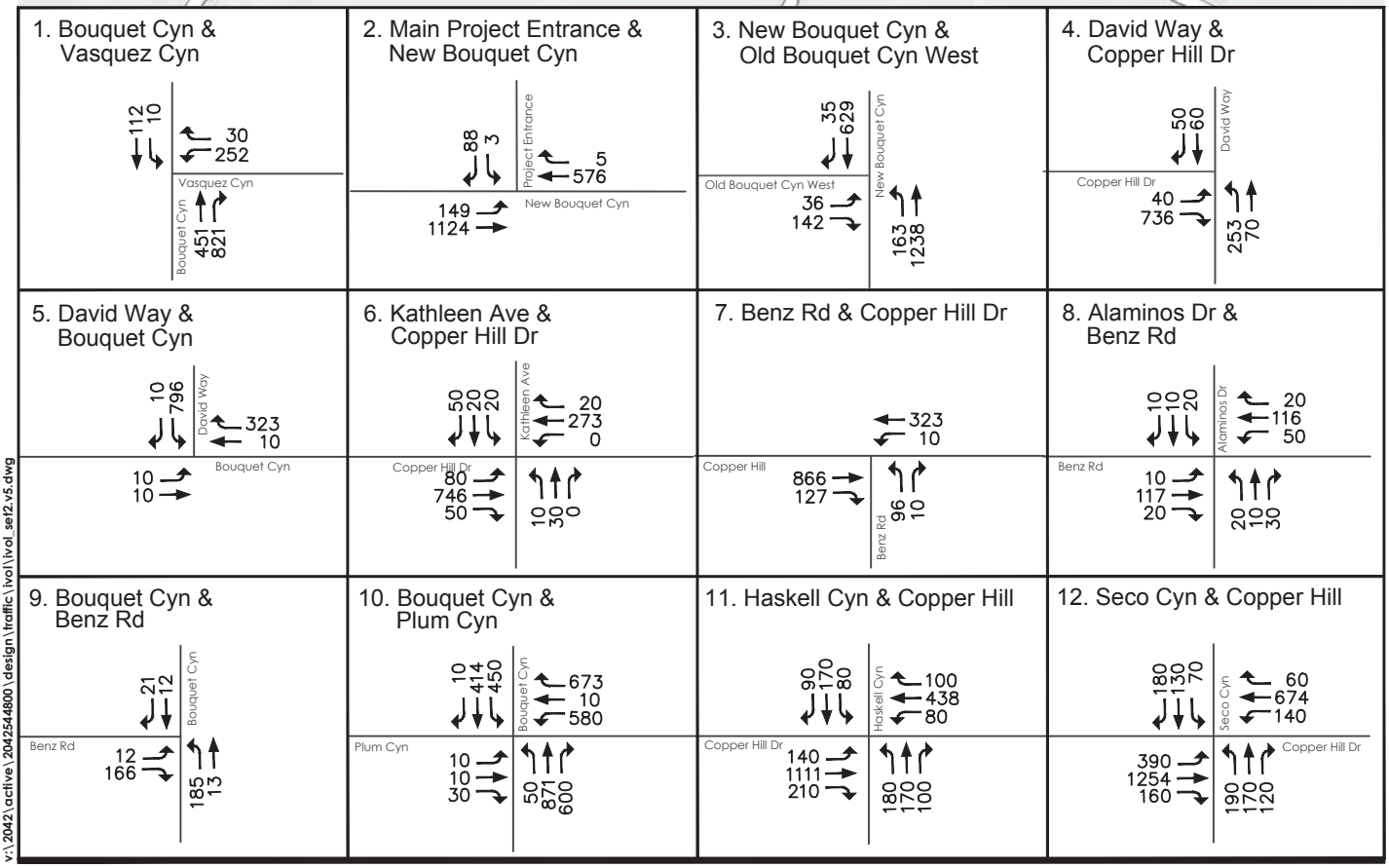


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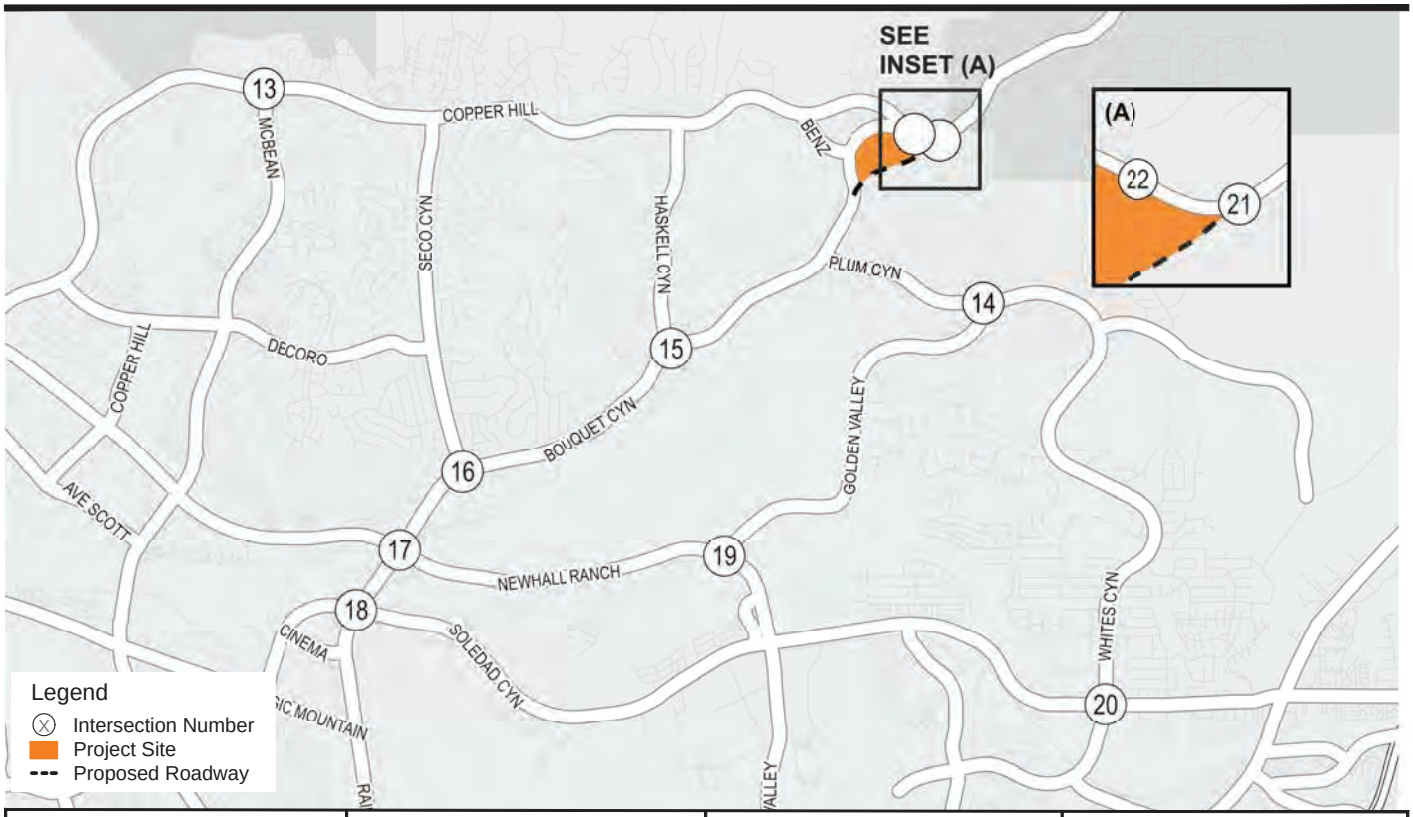
Figure 4-14

Interim Year Cumulative With Project
PM Peak Hour Volumes - Intersections 1-12



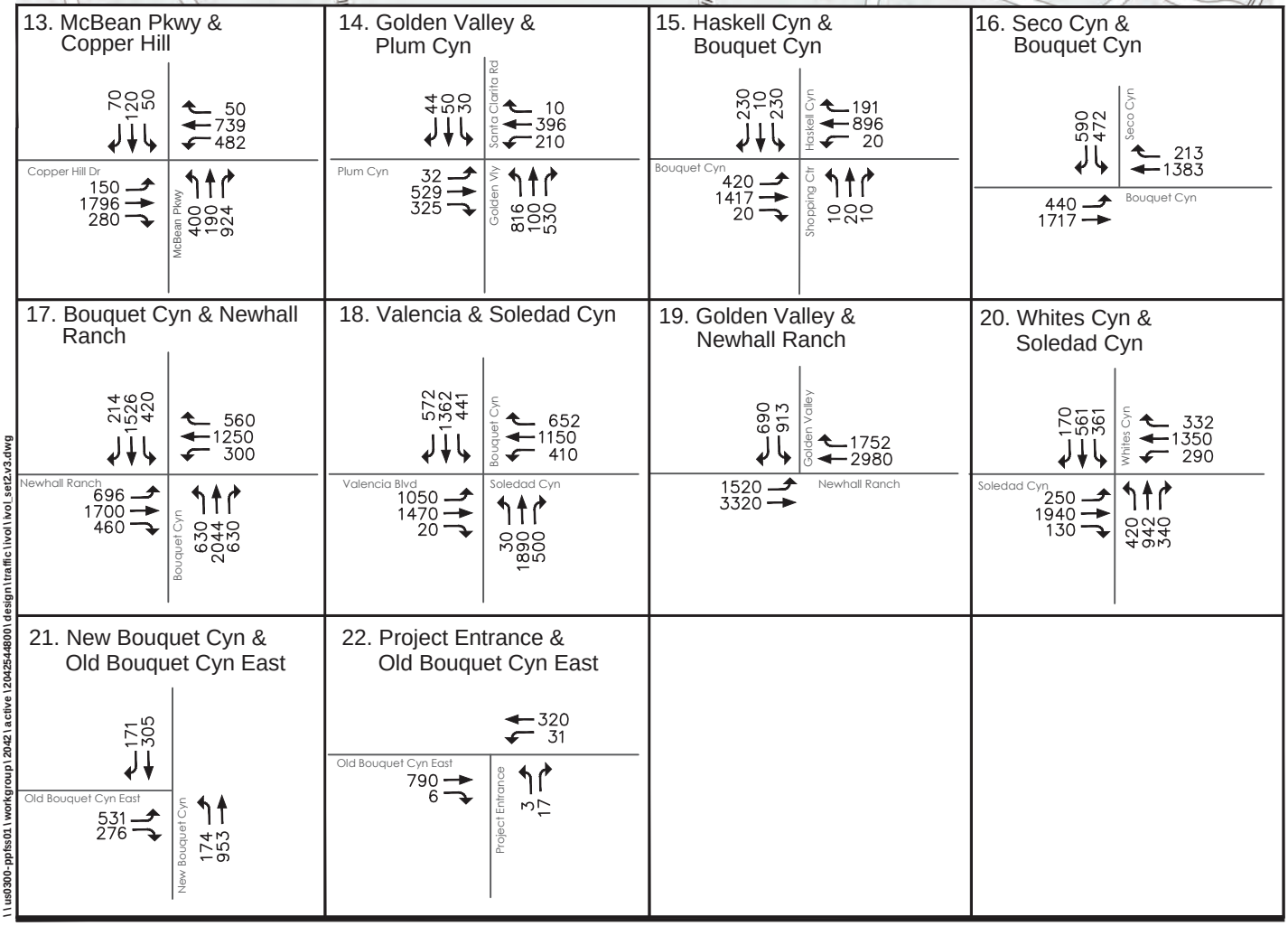


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Figure 4-15
Interim Year Cumulative With Project
PM Peak Hour Volumes - Intersections 13-22

Table 4-4 Intersection Delay and LOS Summary – Interim Year Cumulative (2028) Conditions

Intersection	Traffic Control	Without Project				With Project				Increase	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Delay (sec/veh)
1. Bouquet Cyn & Vasquez Cyn[5]	Two-Way Stop [1]	0.68	B	0.87	D	0.83	D	1.09	F	**0.15**	**0.22**
2. Project Entrance & New Bouquet Cyn	Two-Way Stop [1]	n/a [3]	--	n/a [3]	--	19.5	C	12.4	B	19.5	12.4
3. New Bouquet Cyn & Old Bouquet Cyn West	Two-Way Stop [1]	n/a [3]	--	n/a [3]	--	38.9	E	36.1	E	**38.9**	**36.1**
4. David & Copper Hill	Two-Way Stop [1]	33.2	D	21.1	C	34.5	D	21.5	C	1.3	0.4
5. David & Old Bouquet Cyn East	Signal	228.6	F	111.9	D	11.4	B	447.1	F	-217.2	**335.2**
6. Kathleen & Copper Hill	All-Way Stop [2]	174.3	F	94.4	F	177.9	F	97.0	F	**3.6**	**2.6**
7. Benz & Copper Hill	Two-Way Stop [1]	195.8	F	41.4	E	283.0	F	50.3	F	**87.2**	**8.9**
8. Alaminos & Benz	All-Way Stop [2]	8.4	A	8.3	A	8.5	A	8.5	A	0.1	0.2
9. Old Bouquet Cyn West [4] & Benz	Two-Way Stop [1]	148.6	F	28.2	D	9.5	A	9.6	A	-139.1	-18.6
10. Bouquet Cyn & Plum Cyn	Signal	34.6	C	36.0	D	37.5	D	39.1	D	2.9	3.1
11. Haskell Cyn & Copper Hill	Signal	195.6	F	151.4	F	194.1	F	150.0	C	-1.5	-1.4
12. Seco Cyn & Copper Hill	Signal	38.0	D	30.6	C	38.1	D	30.8	C	0.1	0.2
13. McBean & Copper Hill	Signal	54.3	D	53.5	D	54.6	D	52.5	D	0.3	-1.0
14. Golden Valley & Plum Cyn	Signal	33.5	C	44.4	D	34.5	C	48.4	D	1.0	**4.0**
15. Haskell Cyn & Bouquet Cyn	Signal	34.9	C	55.2	E	35.7	D	54.2	D	0.8	-1.0
16. Seco Cyn & Bouquet Cyn	Signal	50.1	D	36.5	D	58.7	E	38.9	D	**8.6**	2.4
17. Bouquet Cyn & Newhall Ranch	Signal	69.2	E	69.9	E	71.8	E	71.5	E	**2.6**	1.6
18. Bouquet Cyn & Soledad Cyn	Signal	75.2	E	104.6	F	75.4	E	105.9	F	0.2	1.3
19. Golden Valley & Newhall Ranch	Signal	294.0	F	371.3	F	296.9	F	372.4	F	**2.9**	1.1
20. Whites Cyn Rd & Soledad Cyn Rd	Signal	43.8	D	62.1	E	43.9	D	62.5	E	0.1	0.4
21. New Bouquet Cyn & Old Bouquet Cyn East	Signal	n/a [3]	--	n/a [3]	--	166.2	F	37.9	D	**166.2**	**37.9**
22. Project Entrance & Old Bouquet Cyn East	Two-Way Stop [1]	n/a [3]	--	n/a [3]	--	13.5	B	17.7	C	13.5	17.7

Notes:
[1] Delay represents the highest stop-controlled approach
[2] Delay represents the average for the entire intersection
[3] Future intersection
[4] This section of Bouquet Canyon Road becomes Old Bouquet Canyon Road West with the realignment of the roadway
[5] Per LA County guidelines the ICU methodology is utilize and cumulative with Project conditions are compared to existing without Project conditions
Shaded cells indicate a significant impact; n/a = Not applicable (i.e., intersection does not exist under Without Project conditions)

4.2.2 Interim Year Cumulative Conditions Mitigation

Table 4-5 lists the identified mitigation measures to address Project impacts in the Interim Year cumulative conditions setting. Results of the Peak Hour Signal Warrant analysis are summarized in **Chapter 5**.

The Project is located in the Bouquet Canyon Bridge and Major Thoroughfare (B&T) District and the following impacted intersections are identified in the Bouquet Canyon B&T Construction Fee Update Report:

- Bouquet Canyon & Vasquez Canyon
- Golden Valley & Plum Canyon
- Bouquet Canyon & Seco Canyon
- Golden Valley & Newhall Ranch
- Copper Hill Drive & Bouquet Canyon Road

The improvements identified in **Table 4-5** for the aforementioned intersections are consistent with the B&T District and B&T fees would cover the Project's mitigation obligation.

As previously discussed in Section 4.1.2, a collective set of improvements around the Project site would alter and improve traffic flow on Benz Road, Copper Hill Drive, Kathleen Avenue, David Way, and Bouquet Canyon Road. Each of these improvements are discussed in Section 4.1.2 and are the same improvements that are needed to mitigate the Project's cumulative impacts.

Other off-site intersection improvements are required to mitigate the cumulative impacts. Improvements at intersections not in the immediate vicinity of the Project site are described in the previously referenced Table 4-5.

Each of the identified improvements would fully mitigate the Project's significant impact, as shown in **Table 4-6.**

Table 4-5 Mitigation Measures for Project Impacts – Interim Year Cumulative (2028) Conditions

Location	Jurisdiction	Mitigation	Fair Share %
1. Bouquet Cyn & Vasquez Cyn	County	Add a northbound right-turn de-facto lane and add a dedicated westbound left-turn lane. Installation of traffic signal with northbound and southbound split-phasing	2%
3. New Bouquet Cyn & Old Bouquet Cyn West	City	Construct median island to restrict left-turn movement (southbound left) from Old Bouquet Canyon Road to eastbound New Bouquet Canyon Road.	25%
5. David Way & Old Bouquet Cyn East	City	Same as Existing Plus Project: Remove existing traffic signal at David Way & Old Bouquet Canyon East, Close David Way between Old Bouquet Canyon Road and Copper Hill Drive (eliminates south leg of the David Way and Copper Hill Drive intersection) Construct new east leg at David Way at Copper Hill Drive intersection and connect to Old Bouquet Canyon Road At the David Way and Copper Hill Drive intersection, construct median island to restrict the left-turn movement (southbound left) from David Way to Copper Hill Drive and install stop sign at David Way	2%
6. Kathleen & Copper Hill	City	Installation of traffic signal and widen Copper Hill Drive from 2 lanes to 4 lanes from Benz to Kathleen	2%
7. Benz & Copper Hill	City	Same as Existing Plus Project: Construct median island to restrict left-turn movement (northbound left) from Benz Road to Copper Hill Drive.	10%
14. Golden Valley & Plum Cyn	City	Update corridor signal timing coordination, as needed, due to future cumulative traffic volumes	8%
16. Seco Cyn & Bouquet Cyn	City	Add second southbound left-turn lane, add one eastbound right-turn lane, add third northbound through lane	42%
17. Bouquet Cyn & Newhall Ranch	City	Add third westbound left-turn lane	8%
19. Golden Valley & Newhall Ranch	City	Extend median pocket from 300 feet to 500 feet plus taper. Update corridor signal timing coordination, as needed, due to future cumulative traffic volumes	0.5%
21. New Bouquet Cyn & Old Bouquet Cyn East (Copper Hill)	City	Same as Existing Plus Project: Installation of traffic signal Additional mitigation: add 2nd northbound through lane, add 2nd southbound through lane	5%
See Appendix C for fair share calculations			

Table 4-6 Intersection Delay and LOS Summary – Interim Year Cumulative (2028) with Project Conditions with Mitigation

	Without Project				With Project and Mitigation				Net Change with Mitigation	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
Location	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Delay (sec/veh)
1. Bouquet Cyn & Vasquez Cyn	0.68	B	0.87	D	0.62	B	0.71	C	-.06	0.16
3. New Bouquet Cyn & Old Bouquet Cyn	n/a	--	n/a	--	24.7	C	12.8	B	--	--
4. David & Copper Hill	33.2	D	21.1	C	18.2	C	10.4	B	-15.0	-10.7
5. David & Old Bouquet Cyn East	228.6	F	111.9	D	--[1]	--[1]	--[1]	--[1]	--	--
6. Kathleen & Copper Hill	174.3	F	94.4	F	39.1	D	30.7	C	-135.2	-63.7
7. Benz & Copper Hill	195.8	F	41.4	E	10.2	B	13.0	B	-185.6	-28.4
14. Golden Valley & Plum Cyn	33.5	C	44.4	D	34.5	C	28.5	C	-1.0	-15.9
16. Seco Cyn & Bouquet Cyn	50.1	D	36.5	D	21.8	C	25.8	C	-28.3	-10.7
17. Bouquet Cyn & Newhall Ranch	69.2	E	69.9	E	66.0	E	68.2	E	-3.2	-1.7
19. Golden Valley & Newhall Ranch	294.0	F	371.3	F	284.6	F	370.6	F	-9.4	-0.7
21. New Bouquet Cyn & Old Bouquet Cyn East	n/a	--	n/a	--	31.1	C	25.5	C	--	--

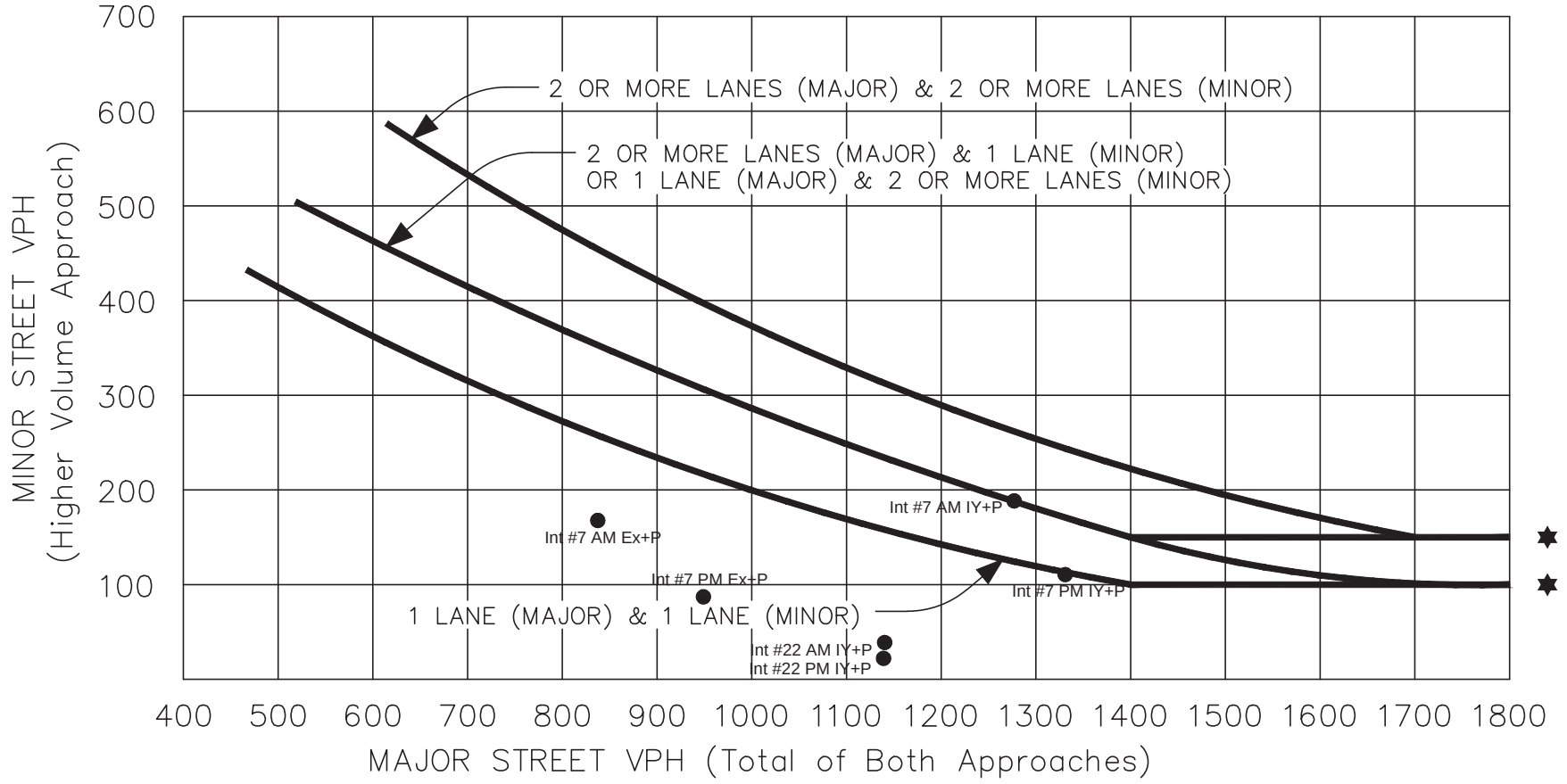
[1] David Way at Old Bouquet Canyon East intersection is removed and replaced with the improved David Way/Copper Hill intersection
Note: The Interim Year with Project and Mitigation delay and LOS shown above assume the installation of a traffic signal at intersections 6, and 21.
For the Bouquet Canyon & Vasquez Canyon intersection, the ICU methodology was used and assumes installation of traffic signal.

5.0 SUPPLEMENTAL ANALYSIS

This chapter presents the results of the signal warrant analysis.

5.1 SIGNAL WARRANT ANALYSIS RESULTS

Figure 5-1 illustrates the Peak Hour Signal Warrant chart from the California Manual on Uniform Traffic Control Devices (CA MUTCD), and **Figure 5-2** illustrates the Peak Hour Signal Warrant (70% Factor) chart. The plot of the peak hour volumes of the major street (both directions) and minor street (higher approach volume) must fall above the line representing the number of approach lanes for a signal to be warranted. **Table 5-1** summarizes the results of the signal warrant analysis under Existing plus Project and Interim Year Cumulative with Project conditions. It should be noted that satisfaction of a traffic signal warrant alone shall not require the installation of a traffic signal; other factors are taken into consideration such as overall safety and operation of the intersection. Each of these intersections would operate at LOS E or F without signalization, except for the project entrance along the realigned Bouquet Canyon Road, which operates at LOS B and LOS C during the AM peak hour and PM peak hour, respectively. Therefore, a traffic signal is recommended only for those locations that would operate at LOS E or F without signalization and that also meet the warrant criteria.



○ AM peak hour Major Street Volume, Minor Street Volume

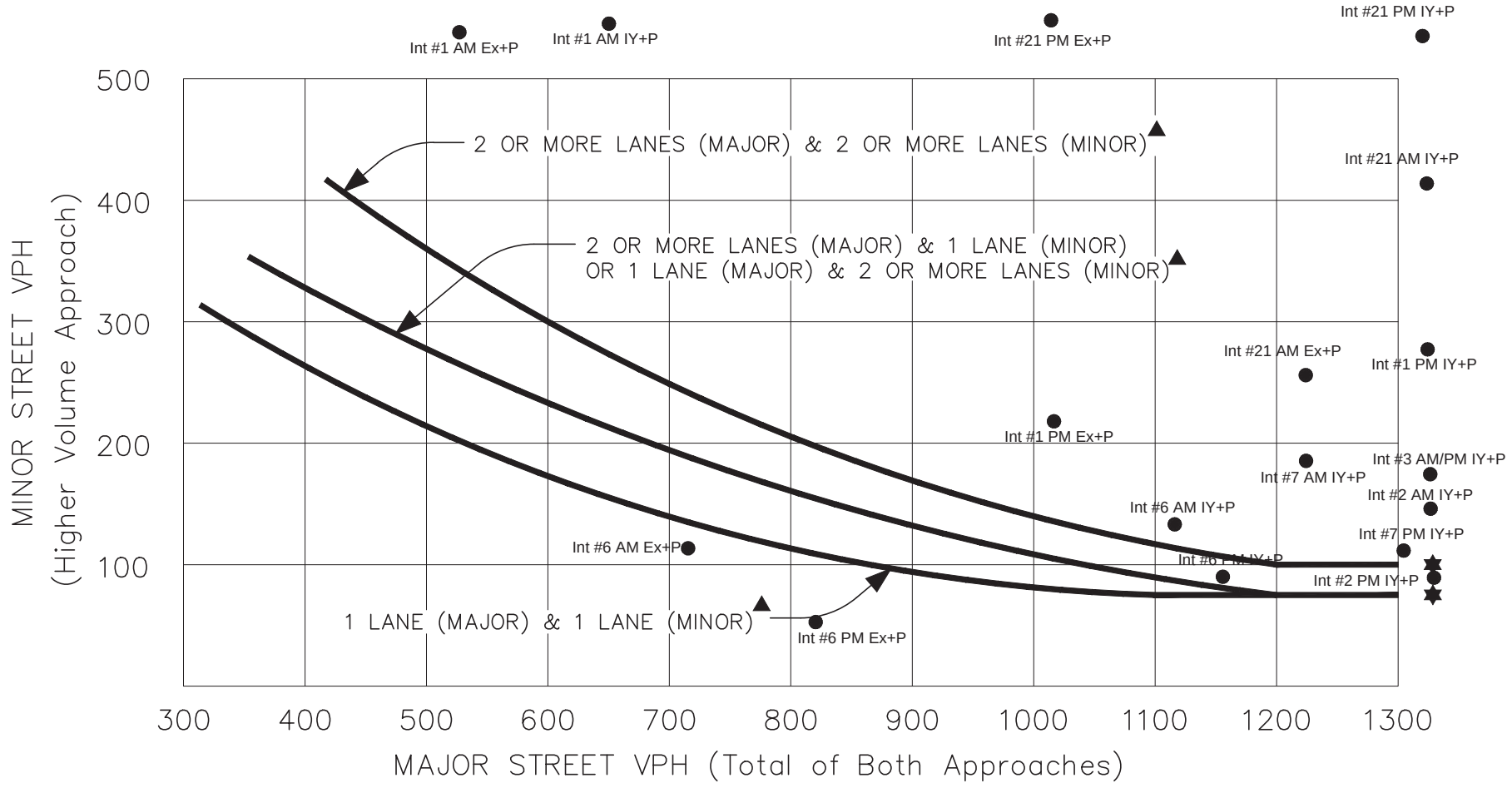
● PM peak hour Major Street Volume, Minor Street Volume

★ Note: 150 vph applies as the lower threshold volume for a minor–street approach with two or more lanes, and 100vph applies as the lower threshold volume for a minor–street approach with one lane.

Source: MUTCD – Figure 4C–3

\\us0300-ppfss01\workgroup\2042\active\2042544800\design\traffic\signal_warrant\figure5-1_v2.dwg

Figure 5-1
Warrant 3, Peak Hour
5.2



○ AM peak hour Major Street Volume, Minor Street Volume
● PM peak hour Major Street Volume, Minor Street Volume

▲ Note: These curves are recommended for use in community less than 10,000 population or above 40 MPH on Major Street.

★ Note: 100 vph applies as the lower threshold volume for a minor–street approach with two or more lanes, and 75 vph applies as the lower threshold volume for a minor–street approach with one lane.

Source: MUTCD – Figure 4C–4

\\us0300-ppfss01\workgroup\2042\active\2042544800\design\traffic\signal_warrant\figure5-1_v2.dwg

Figure 5-2
Warrant 3, Peak Hour (70% Factor)
5.3

Table 5-1 Peak Hour Signal Warrant Analysis Summary

Location	Major Street Speed (mph)	Approach Lanes		AM Peak Hour		PM Peak Hour		Warrant Satisfied?
		Major Street	Minor Street	Major Street Volume	Minor Street Volume	Major Street Volume	Minor Street Volume	
Existing Plus Project								
2. Project Entrance & New Bouquet Cyn	45	2	1	933	146	1,180	91	Yes
6. Kathleen & Copper Hill	45	1	1	706	116	812	58	No
21. New Bouquet Cyn & Old Bouquet Cyn East	45	1	1	1,217	271	1,018	584	Yes
22. Project Entrance & Old Bouquet Cyn East	40	1	1	769	37	800	20	No
Interim Year Plus Project								
1. Bouquet Cyn & Vasquez Cyn	50	1	1	664	760	1,394	282	Yes
2. Project Entrance & New Bouquet Cyn	45	2	1	1,731	146	1,854	91	Yes
6. Kathleen & Copper Hill	45	1	1	1,137	140	1,169	90	Yes
21. New Bouquet Cyn & Old Bouquet Cyn East (Copper Hill)	45	2	1	2,060	411	1,603	807	Yes
22. Project Entrance & Old Bouquet Cyn East	40	1	1	1,145	37	1,147	20	No

6.0 CONCLUSIONS

This traffic study was conducted to evaluate Project impacts associated with the development of the property with a residential community. Two horizon year scenarios were analyzed for conditions both with and without the Project, and the findings of each scenario were presented.

The realignment of Bouquet Canyon Road will alter and improve circulation flow on Benz Road, Copper Hill Drive, Kathleen Avenue, David Way, and Bouquet Canyon Road. Mitigation measures that address the Project's significant impacts are part of a collective set of improvements for the area in the immediate vicinity of the Project site. The following is a description of the collective set of improvements, some of which the Project is responsible for, and some the Project will be responsible for its fair-share of the cost of these improvements.

At the Benz Road and Copper Hill Drive intersection, a median island will be constructed to restrict left-turn movements (northbound left) from Benz Road to westbound Copper Hill Drive. This modification will also reduce the amount of non-local cut-through traffic that currently utilized Benz Road. Access to Benz Road at Copper Hill Drive will be right/in-right/out and left-turn in, and the left-turn out will be prohibited. Vehicles may make a right-turn from Benz Road, followed by a U-turn at Kathleen Avenue to head westbound on Copper Hill Drive.

The roadway segment between Benz Road and Kathleen Avenue will be widened from 2-lanes to 4-lanes (two lanes in each direction) and a traffic signal installed at Kathleen Avenue and Copper Hill Drive. The segment of Copper Hill Drive between Kathleen Avenue to David Way will be 3 lanes (2 lanes westbound and 1 lane eastbound) just east of the Kathleen Avenue/Copper Hill Drive intersection and tapers to 2 lanes (one lane in each direction) west of the David Way/Copper Hill Drive intersection.

At David Way and Old Bouquet Canyon Road intersection, the traffic signal at this intersection will be removed and David Way between Old Bouquet Canyon Road and Copper Hill Drive will be closed. The roadway closure will eliminate the south leg of the David Way and Copper Hill Drive intersection and a new east leg will be constructed to connect with Old Bouquet Canyon Road. At the David Way and Copper Hill Drive intersection, a median island to restrict the left-turn movement (southbound left) from David Way to eastbound Copper Hill Drive will be constructed and David Way will be under stop control with right-in/right-out and left-in movements allowed (no left-turn out allowed).

Adjacent to the David Way at Old Bouquet Canyon Road intersection, Hob Court will terminate into a cul-de-sac (currently connects to Old Bouquet Canyon Road) and Pin Court will be removed (currently connects to Hob Court).

Old Bouquet Canyon Road (Copper Hill extension) will generally be 2 lanes (one lane in each direction) and terminate as a "T" intersection at New Bouquet Canyon Road. At the New Bouquet Canyon at Old Bouquet Canyon (future Copper Hill extension) intersection, a traffic signal will be installed. In the cumulative setting, a second northbound through lane and a second southbound through lane is needed.

On the westerly side of the Project site, a median island at the Old Bouquet Canyon Road (West) and New Bouquet Canyon Road intersection will be constructed. The median island will restrict left-turn movements (southbound left) from Old Bouquet Canyon Road (West) to eastbound New Bouquet Canyon Road .

The aforementioned improvements would mitigate the Project's three significantly impacted intersections under the Existing Plus Project scenario. Under the cumulative setting, additional mitigation at five intersections that are further from the Project site is required and mitigation identified in this analysis would result in impacts less than significant.

Since these impacts are under cumulative conditions, the project would contribute its pro rata share of the improvement cost and the improvement would be implemented when necessary as determined by the City given the anticipated growth in future traffic volumes. The project does not result in a direct impact on the freeway ramps or mainline.

Table 6-1 summarizes the mitigation and improvements identified by the traffic study.

Table 6-1 Mitigation and Improvement Summary

Location	Jurisdiction	Mitigation	Fair Share %
Existing Plus Project			
5. David Way & Old Bouquet Cyn East	City	Remove existing traffic signal Close David Way between Old Bouquet Canyon Road and Copper Hill Drive (eliminates south leg of the David Way and Copper Hill Drive intersection) Construct new east leg at David Way at Copper Hill Drive intersection and connect to Old Bouquet Canyon Road At the David Way and Copper Hill Drive intersection, construct median island to restrict the left-turn movement (southbound left) from David Way to Copper Hill Drive and install stop sign at David Way	100%
7. Benz & Copper Hill	City	Construct median island to restrict left-turn movement (northbound left) from Benz Road to Copper Hill Drive	
21. New Bouquet Cyn & Old Bouquet Cyn East	City	Installation of traffic signal	
Interim Year Cumulative Conditions			
1. Bouquet Cyn & Vasquez Cyn[1]	County	Add a northbound right-turn de-facto lane and add a dedicated westbound left-turn lane. Installation of traffic signal with northbound and southbound split-phasing	2%
3. New Bouquet Cyn & Old Bouquet Cyn West	City	Construct median island to restrict left-turn movement (southbound left) from Old Bouquet Canyon Road to eastbound New Bouquet Canyon Road.	25%
5. David Way & Old Bouquet Cyn East	City	Same as Existing Plus Project: Remove existing traffic signal at David Way & Old Bouquet Canyon East, Close David Way between Old Bouquet Canyon Road and Copper Hill Drive (eliminates south leg of the David Way and Copper Hill Drive intersection) Construct new east leg at David Way at Copper Hill Drive intersection and connect to Old Bouquet Canyon Road At the David Way and Copper Hill Drive intersection, construct median island to restrict the left-turn movement (southbound left) from David Way to Copper Hill Drive and install stop sign at David Way	2%
6. Kathleen & Copper Hill	City	Installation of traffic signal and widen Copper Hill Drive from 2 lanes to 4 lanes from Benz to Kathleen	2%
7. Benz & Copper Hill	City	Same as Existing Plus Project: Construct median island to restrict left-turn movement (northbound left) from Benz Road to westbound Copper Hill Drive.	10%
14. Golden Valley & Plum Cyn[1]	City	Update corridor signal timing coordination, as needed, due to future cumulative traffic volumes	8%

Table 6-1 Mitigation and Improvement Summary (Continued)

Location	Jurisdiction	Mitigation	Fair Share %
Existing Plus Project			
16. Seco Cyn & Bouquet Cyn[1]	City	Add second southbound left-turn lane, add one eastbound right-turn lane, add third northbound through lane	42%
17. Bouquet Cyn & Newhall Ranch	City	Add third westbound left-turn lane	8%
19. Golden Valley & Newhall Ranch[1]	City	Extend median pocket from 300 feet to 500 feet plus taper. Update corridor signal timing coordination, as needed, due to future traffic volumes	0.5%
21. New Bouquet Cyn & Old Bouquet Cyn East[1]	City	Same as Existing Plus Project: Installation of traffic signal Additional mitigation: add 2nd northbound through lane, add 2nd southbound through lane	5%
[1] Intersection identified for improvements in the Bouquet Canyon B&T Construction Fee District Report			

7.0 REFERENCES

1. Institute of Transportation Engineers. 2018. *Trip Generation 10th Edition*.
2. Transportation Research Board. 2018. *Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis*.
3. City of Santa Clarita. August 1990. *Preliminary Traffic Impact Report Guidelines*.
4. County of Los Angeles Department of Public Works. January 1997. *Traffic Impact Analysis Report Guidelines*.
5. Los Angeles County Metropolitan Transportation Authority. 2010. "Guidelines for CMP Transportation Impact Analysis" from *2010 Congestion Management Program for Los Angeles County.*
6. Austin-Foust Associates, Inc. June 2010. *One Valley One Vision Valley-Wide Traffic Study*.
7. Los Angeles County Department of Public Works. May 2002. *Bouquet Canyon Bridge and Major Thoroughfare Construction Fee District Update Report*.

Appendix A INTERSECTION COUNT WORKSHEETS

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

Prepared by: Field Data Services of Arizona

ADT1 Bouquet Canyon south of Shadow Valley Lane. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		13		9			12:00	0		0		55		58		
0:15	0		0		7		5			12:15	0		0		65		60		
0:30	0		0		14		3			12:30	0		0		71		64		
0:45	0	0	0	0	6	40	3	20	60	12:45	0	0	0	0	77	268	50	232	500
1:00	0		0		10		1			13:00	0		0		78		68		
1:15	0		0		4		4			13:15	0		0		73		86		
1:30	0		0		4		0			13:30	0		0		86		95		
1:45	0	0	0	0	7	25	3	8	33	13:45	0	0	0	0	108	345	75	324	669
2:00	0		0		1		5			14:00	0		0		108		91		
2:15	0		0		4		4			14:15	0		0		115		66		
2:30	0		0		3		2			14:30	0		0		129		72		
2:45	0	0	0	0	3	11	4	15	26	14:45	0	0	0	0	156	508	89	318	826
3:00	0		0		8		3			15:00	0		0		131		82		
3:15	0		0		1		4			15:15	0		0		170		87		
3:30	0		0		2		5			15:30	0		0		182		88		
3:45	0	0	0	0	4	15	6	18	33	15:45	0	0	0	0	226	709	98	355	1064
4:00	0		0		2		19			16:00	0		0		225		81		
4:15	0		0		4		24			16:15	0		0		249		89		
4:30	0		0		8		47			16:30	0		0		254		82		
4:45	0	0	0	0	7	21	76	166	187	16:45	0	0	0	0	279	1007	85	337	1344
5:00	0		0		16		93			17:00	0		0		253		78		
5:15	0		0		21		130			17:15	0		0		272		84		
5:30	0		0		12		222			17:30	0		0		223		90		
5:45	0	0	0	0	28	77	224	669	746	17:45	0	0	0	0	200	948	79	331	1279
6:00	0		0		25		163			18:00	0		0		206		62		
6:15	0		0		39		223			18:15	0		0		174		51		
6:30	0		0		35		222			18:30	0		0		144		66		
6:45	0	0	0	0	57	156	250	858	1014	18:45	0	0	0	0	123	647	65	244	891
7:00	0		0		62		224			19:00	0		0		109		42		
7:15	0		0		57		259			19:15	0		0		80		52		
7:30	0		0		81		278			19:30	0		0		71		49		
7:45	0	0	0	0	99	299	224	985	1284	19:45	0	0	0	0	65	325	35	178	503
8:00	0		0		87		150			20:00	0		0		70		34		
8:15	0		0		76		148			20:15	0		0		70		25		
8:30	0		0		72		164			20:30	0		0		56		28		
8:45	0	0	0	0	75	310	116	578	888	20:45	0	0	0	0	52	248	28	115	363
9:00	0		0		79		88			21:00	0		0		46		30		
9:15	0		0		52		95			21:15	0		0		63		22		
9:30	0		0		65		80			21:30	0		0		47		28		
9:45	0	0	0	0	89	285	81	344	629	21:45	0	0	0	0	43	199	13	93	292
10:00	0		0		56		68			22:00	0		0		34		11		
10:15	0		0		46		78			22:15	0		0		30		12		
10:30	0		0		38		78			22:30	0		0		28		9		
10:45	0	0	0	0	58	198	70	294	492	22:45	0	0	0	0	22	114	12	44	158
11:00	0		0		53		72			23:00	0		0		17		11		
11:15	0		0		65		70			23:15	0		0		21		6		
11:30	0		0		50		89			23:30	0		0		10		11		
11:45	0	0	0	0	55	223	62	293	516	23:45	0	0	0	0	23	71	8	36	107
Total Vol.					1660		4248		**5908**						5389		2607		**7996**

Daily Totals

NB	SB	EB	WB	Combined
		7049	6855	**13904**

	AM			PM		
Split %	28.1%	71.9%	**42.5%**	67.4%	32.6%	**57.5%**
Peak Hour	7:30	6:45	**7:00**	16:30	15:30	**16:30**
Volume	343	1011	**1284**	1058	356	**1387**
P.H.F.	0.87	0.91	**0.89**	0.95	0.91	**0.95**

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

ADT2 Bouquet Canyon east of Plum Canyon. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		16		15			12:00	0		0		89		81		
0:15	0		0		9		9			12:15	0		0		87		96		
0:30	0		0		17		9			12:30	0		0		95		86		
0:45	0	0	0	0	11	53	7	40	93	12:45	0	0	0	0	114	385	99	362	747
1:00	0		0		12		3			13:00	0		0		106		115		
1:15	0		0		6		6			13:15	0		0		116		129		
1:30	0		0		10		0			13:30	0		0		119		109		
1:45	0	0	0	0	2	30	4	13	43	13:45	0	0	0	0	127	468	121	474	942
2:00	0		0		3		3			14:00	0		0		136		129		
2:15	0		0		3		5			14:15	0		0		125		102		
2:30	0		0		2		1			14:30	0		0		161		107		
2:45	0	0	0	0	5	13	6	15	28	14:45	0	0	0	0	140	562	127	465	1027
3:00	0		0		4		6			15:00	0		0		155		106		
3:15	0		0		2		3			15:15	0		0		177		117		
3:30	0		0		2		9			15:30	0		0		171		115		
3:45	0	0	0	0	3	11	3	21	32	15:45	0	0	0	0	191	694	125	463	1157
4:00	0		0		3		15			16:00	0		0		214		107		
4:15	0		0		2		26			16:15	0		0		218		102		
4:30	0		0		3		34			16:30	0		0		191		114		
4:45	0	0	0	0	7	15	58	133	148	16:45	0	0	0	0	221	844	121	444	1288
5:00	0		0		15		64			17:00	0		0		234		121		
5:15	0		0		13		101			17:15	0		0		230		129		
5:30	0		0		13		126			17:30	0		0		228		117		
5:45	0	0	0	0	18	59	135	426	485	17:45	0	0	0	0	207	899	148	515	1414
6:00	0		0		21		141			18:00	0		0		204		120		
6:15	0		0		23		162			18:15	0		0		176		131		
6:30	0		0		39		183			18:30	0		0		180		103		
6:45	0	0	0	0	46	129	199	685	814	18:45	0	0	0	0	154	714	112	466	1180
7:00	0		0		68		193			19:00	0		0		148		103		
7:15	0		0		65		216			19:15	0		0		154		67		
7:30	0		0		105		228			19:30	0		0		116		73		
7:45	0	0	0	0	120	358	212	849	1207	19:45	0	0	0	0	118	536	73	316	852
8:00	0		0		102		186			20:00	0		0		96		67		
8:15	0		0		89		143			20:15	0		0		119		68		
8:30	0		0		83		129			20:30	0		0		81		56		
8:45	0	0	0	0	88	362	140	598	960	20:45	0	0	0	0	69	365	45	236	601
9:00	0		0		83		123			21:00	0		0		78		36		
9:15	0		0		69		107			21:15	0		0		77		50		
9:30	0		0		65		100			21:30	0		0		72		48		
9:45	0	0	0	0	78	295	99	429	724	21:45	0	0	0	0	51	278	32	166	444
10:00	0		0		78		102			22:00	0		0		54		36		
10:15	0		0		61		94			22:15	0		0		41		30		
10:30	0		0		62		107			22:30	0		0		37		19		
10:45	0	0	0	0	69	270	99	402	672	22:45	0	0	0	0	26	158	20	105	263
11:00	0		0		69		100			23:00	0		0		28		15		
11:15	0		0		92		96			23:15	0		0		22		13		
11:30	0		0		73		104			23:30	0		0		19		15		
11:45	0	0	0	0	81	315	90	390	705	23:45	0	0	0	0	27	96	14	57	153

Total Vol.					1910		4001	**5911**							5999		4069	**10068**	
															Daily Totals				
											NB		SB		EB		WB	**Combined**	
															7909		8070	**15979**	
					AM										**PM**				
Split %					32.3%		67.7%	**37.0%**							59.6%		40.4%	**63.0%**	
Peak Hour					7:30		7:00	**7:15**							16:45		17:30	**17:00**	
Volume					416		849	**1234**							913		516	**1414**	
P.H.F.					0.87		0.93	**0.93**							0.98		0.87	**0.98**	

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

ADT3 Bouquet Canyon west of Plum Canyon. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		23		20			12:00	0		0		144		127		
0:15	0		0		19		15			12:15	0		0		149		140		
0:30	0		0		20		10			12:30	0		0		143		151		
0:45	0	0	0	0	23	85	9	54	139	12:45	0	0	0	0	168	604	160	578	1182
1:00	0		0		18		13			13:00	0		0		197		167		
1:15	0		0		8		6			13:15	0		0		174		190		
1:30	0		0		13		2			13:30	0		0		186		198		
1:45	0	0	0	0	9	48	6	27	75	13:45	0	0	0	0	201	758	171	726	1484
2:00	0		0		7		6			14:00	0		0		247		208		
2:15	0		0		9		5			14:15	0		0		229		181		
2:30	0		0		7		2			14:30	0		0		269		177		
2:45	0	0	0	0	8	31	5	18	49	14:45	0	0	0	0	238	983	214	780	1763
3:00	0		0		5		4			15:00	0		0		220		178		
3:15	0		0		5		7			15:15	0		0		289		184		
3:30	0		0		5		6			15:30	0		0		237		191		
3:45	0	0	0	0	8	23	6	23	46	15:45	0	0	0	0	236	982	208	761	1743
4:00	0		0		7		15			16:00	0		0		289		172		
4:15	0		0		5		23			16:15	0		0		311		191		
4:30	0		0		14		26			16:30	0		0		311		202		
4:45	0	0	0	0	15	41	65	129	170	16:45	0	0	0	0	295	1206	220	785	1991
5:00	0		0		28		68			17:00	0		0		340		210		
5:15	0		0		27		94			17:15	0		0		328		217		
5:30	0		0		22		119			17:30	0		0		319		234		
5:45	0	0	0	0	38	115	152	433	548	17:45	0	0	0	0	304	1291	239	900	2191
6:00	0		0		31		147			18:00	0		0		354		212		
6:15	0		0		50		198			18:15	0		0		255		204		
6:30	0		0		74		227			18:30	0		0		290		185		
6:45	0	0	0	0	90	245	231	803	1048	18:45	0	0	0	0	265	1164	186	787	1951
7:00	0		0		96		254			19:00	0		0		265		144		
7:15	0		0		124		270			19:15	0		0		225		127		
7:30	0		0		145		335			19:30	0		0		186		110		
7:45	0	0	0	0	181	546	332	1191	1737	19:45	0	0	0	0	185	861	118	499	1360
8:00	0		0		195		314			20:00	0		0		184		120		
8:15	0		0		176		294			20:15	0		0		196		98		
8:30	0		0		169		260			20:30	0		0		109		92		
8:45	0	0	0	0	184	724	208	1076	1800	20:45	0	0	0	0	109	598	78	388	986
9:00	0		0		152		195			21:00	0		0		117		69		
9:15	0		0		124		222			21:15	0		0		114		79		
9:30	0		0		161		178			21:30	0		0		93		60		
9:45	0	0	0	0	138	575	131	726	1301	21:45	0	0	0	0	76	400	51	259	659
10:00	0		0		117		113			22:00	0		0		85		37		
10:15	0		0		113		126			22:15	0		0		74		31		
10:30	0		0		103		175			22:30	0		0		67		37		
10:45	0	0	0	0	110	443	131	545	988	22:45	0	0	0	0	39	265	26	131	396
11:00	0		0		131		142			23:00	0		0		42		16		
11:15	0		0		136		127			23:15	0		0		44		12		
11:30	0		0		138		142			23:30	0		0		31		23		
11:45	0	0	0	0	132	537	152	563	1100	23:45	0	0	0	0	47	164	25	76	240
Total Vol.					3413		5588	**9001**							9276		6670	**15946**	

Daily Totals

NB	SB	EB	WB	Combined
		12689	12258	**24947**

	AM			PM		
Split %	37.9%	62.1%	**36.1%**	58.2%	41.8%	**63.9%**
Peak Hour	8:00	7:30	**7:30**	17:15	17:15	**17:15**
Volume	724	1275	**1972**	1305	902	**2207**
P.H.F.	0.93	0.95	**0.96**	0.92	0.94	**0.97**

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

Prepared by: Field Data Services of Arizona

ADT4 Bouquet Canyon south of Seco Canyon. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	80		25		0		0			12:00	427		413		0		0		
0:15	76		24		0		0			12:15	464		478		0		0		
0:30	57		27		0		0			12:30	548		419		0		0		
0:45	63	276	13	89	0	0	0	0	365	12:45	509	1948	420	1730	0	0	0	0	3678
1:00	65		17		0		0			13:00	524		476		0		0		
1:15	44		18		0		0			13:15	638		454		0		0		
1:30	34		20		0		0			13:30	580		411		0		0		
1:45	37	180	19	74	0	0	0	0	254	13:45	568	2310	525	1866	0	0	0	0	4176
2:00	29		16		0		0			14:00	533		591		0		0		
2:15	15		23		0		0			14:15	559		570		0		0		
2:30	20		15		0		0			14:30	501		545		0		0		
2:45	13	77	22	76	0	0	0	0	153	14:45	545	2138	426	2132	0	0	0	0	4270
3:00	26		16		0		0			15:00	556		479		0		0		
3:15	18		26		0		0			15:15	612		483		0		0		
3:30	14		35		0		0			15:30	641		484		0		0		
3:45	6	64	57	134	0	0	0	0	198	15:45	673	2482	442	1888	0	0	0	0	4370
4:00	15		55		0		0			16:00	648		419		0		0		
4:15	10		97		0		0			16:15	703		408		0		0		
4:30	12		166		0		0			16:30	689		439		0		0		
4:45	26	63	210	528	0	0	0	0	591	16:45	776	2816	473	1739	0	0	0	0	4555
5:00	29		287		0		0			17:00	786		449		0		0		
5:15	22		372		0		0			17:15	794		435		0		0		
5:30	37		391		0		0			17:30	795		426		0		0		
5:45	55	143	498	1548	0	0	0	0	1691	17:45	835	3210	479	1789	0	0	0	0	4999
6:00	63		456		0		0			18:00	816		538		0		0		
6:15	104		523		0		0			18:15	822		484		0		0		
6:30	112		545		0		0			18:30	750		439		0		0		
6:45	124	403	514	2038	0	0	0	0	2441	18:45	695	3083	462	1923	0	0	0	0	5006
7:00	178		558		0		0			19:00	583		474		0		0		
7:15	207		609		0		0			19:15	637		409		0		0		
7:30	395		724		0		0			19:30	533		356		0		0		
7:45	392	1172	789	2680	0	0	0	0	3852	19:45	559	2312	433	1672	0	0	0	0	3984
8:00	282		757		0		0			20:00	477		389		0		0		
8:15	276		714		0		0			20:15	481		332		0		0		
8:30	258		563		0		0			20:30	397		221		0		0		
8:45	264	1080	606	2640	0	0	0	0	3720	20:45	382	1737	197	1139	0	0	0	0	2876
9:00	272		599		0		0			21:00	366		211		0		0		
9:15	291		499		0		0			21:15	336		219		0		0		
9:30	262		462		0		0			21:30	260		159		0		0		
9:45	338	1163	545	2105	0	0	0	0	3268	21:45	250	1212	112	701	0	0	0	0	1913
10:00	323		407		0		0			22:00	186		123		0		0		
10:15	324		441		0		0			22:15	206		145		0		0		
10:30	310		407		0		0			22:30	156		90		0		0		
10:45	344	1301	425	1680	0	0	0	0	2981	22:45	136	684	61	419	0	0	0	0	1103
11:00	392		389		0		0			23:00	112		68		0		0		
11:15	360		440		0		0			23:15	104		36		0		0		
11:30	381		417		0		0			23:30	79		37		0		0		
11:45	455	1588	485	1731	0	0	0	0	3319	23:45	75	370	28	169	0	0	0	0	539
Total Vol.		7510		15323					**22833**			24302		17167					**41469**

Daily Totals

NB	SB	EB	WB	Combined
31812	32490			**64302**

	AM			PM		
Split %	32.9%	67.1%	**35.5%**	58.6%	41.4%	**64.5%**
Peak Hour	11:45	7:30	**7:30**	17:30	13:45	**17:30**
Volume	1894	2984	**4329**	3268	2231	**5195**
P.H.F.	0.86	0.95	**0.92**	0.98	0.94	**0.96**

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Wednesday, October 17, 2018 | CITY: Santa Clarita | PROJECT: SC1841

ADT5 Copper Hill west of David Way. | Prepared by: Field Data Services of Arizona | **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		6		3			12:00	0		0		26		23		
0:15	0		0		3		2			12:15	0		0		31		24		
0:30	0		0		4		1			12:30	0		0		32		21		
0:45	0	0	0	0	3	16	3	9	25	12:45	0	0	0	0	29	118	23	91	209
1:00	0		0		4		1			13:00	0		0		24		29		
1:15	0		0		2		1			13:15	0		0		22		37		
1:30	0		0		1		1			13:30	0		0		37		43		
1:45	0	0	0	0	3	10	3	6	16	13:45	0	0	0	0	41	124	36	145	269
2:00	0		0		0		1			14:00	0		0		49		36		
2:15	0		0		2		1			14:15	0		0		52		29		
2:30	0		0		2		2			14:30	0		0		46		38		
2:45	0	0	0	0	3	7	0	4	11	14:45	0	0	0	0	94	241	37	140	381
3:00	0		0		5		2			15:00	0		0		49		45		
3:15	0		0		0		1			15:15	0		0		69		43		
3:30	0		0		2		2			15:30	0		0		81		37		
3:45	0	0	0	0	3	10	6	11	21	15:45	0	0	0	0	118	317	46	171	488
4:00	0		0		2		6			16:00	0		0		113		38		
4:15	0		0		3		12			16:15	0		0		105		53		
4:30	0		0		11		28			16:30	0		0		143		46		
4:45	0	0	0	0	3	19	42	88	107	16:45	0	0	0	0	139	500	37	174	674
5:00	0		0		12		46			17:00	0		0		123		42		
5:15	0		0		15		70			17:15	0		0		125		29		
5:30	0		0		9		138			17:30	0		0		94		40		
5:45	0	0	0	0	7	43	113	367	410	17:45	0	0	0	0	108	450	39	150	600
6:00	0		0		21		64			18:00	0		0		107		43		
6:15	0		0		18		126			18:15	0		0		82		55		
6:30	0		0		23		103			18:30	0		0		68		41		
6:45	0	0	0	0	30	92	107	400	492	18:45	0	0	0	0	54	311	29	168	479
7:00	0		0		39		125			19:00	0		0		33		14		
7:15	0		0		35		125			19:15	0		0		23		27		
7:30	0		0		44		157			19:30	0		0		26		23		
7:45	0	0	0	0	48	166	124	531	697	19:45	0	0	0	0	20	102	16	80	182
8:00	0		0		49		68			20:00	0		0		28		15		
8:15	0		0		30		77			20:15	0		0		28		22		
8:30	0		0		38		83			20:30	0		0		25		24		
8:45	0	0	0	0	29	146	56	284	430	20:45	0	0	0	0	18	99	15	76	175
9:00	0		0		29		32			21:00	0		0		6		11		
9:15	0		0		22		54			21:15	0		0		14		6		
9:30	0		0		34		37			21:30	0		0		22		16		
9:45	0	0	0	0	43	128	33	156	284	21:45	0	0	0	0	8	50	12	45	95
10:00	0		0		28		26			22:00	0		0		9		7		
10:15	0		0		22		26			22:15	0		0		14		8		
10:30	0		0		21		24			22:30	0		0		8		7		
10:45	0	0	0	0	27	98	25	101	199	22:45	0	0	0	0	6	37	5	27	64
11:00	0		0		21		24			23:00	0		0		5		4		
11:15	0		0		25		32			23:15	0		0		3		4		
11:30	0		0		25		37			23:30	0		0		5		7		
11:45	0	0	0	0	23	94	28	121	215	23:45	0	0	0	0	4	17	1	16	33

Total Vol.					829		2078	**2907**							2366		1283	**3649**	

Daily Totals

NB	SB	EB	WB	**Combined**
		3195	3361	**6556**

	AM			**PM**		
Split %	28.5%	71.5%	**44.3%**	64.8%	35.2%	**55.7%**
Peak Hour	7:15	7:00	**7:00**	16:30	15:45	**16:15**
Volume	176	531	**697**	530	183	**688**
P.H.F.	0.90	0.85	**0.87**	0.93	0.86	**0.91**

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Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

ADT6 David Way south of Copper Hill. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	6		7		0		0			12:00	34		36		0		0		
0:15	3		3		0		0			12:15	34		32		0		0		
0:30	1		4		0		0			12:30	28		41		0		0		
0:45	5	15	4	18	0	0	0	0	33	12:45	28	124	36	145	0	0	0	0	269
1:00	2		3		0		0			13:00	33		28		0		0		
1:15	1		3		0		0			13:15	46		37		0		0		
1:30	2		1		0		0			13:30	45		46		0		0		
1:45	3	8	3	10	0	0	0	0	18	13:45	39	163	53	164	0	0	0	0	327
2:00	1		0		0		0			14:00	47		59		0		0		
2:15	1		2		0		0			14:15	33		60		0		0		
2:30	2		2		0		0			14:30	49		57		0		0		
2:45	1	5	4	8	0	0	0	0	13	14:45	53	182	107	283	0	0	0	0	465
3:00	2		5		0		0			15:00	50		55		0		0		
3:15	1		0		0		0			15:15	58		79		0		0		
3:30	2		4		0		0			15:30	43		87		0		0		
3:45	6	11	3	12	0	0	0	0	23	15:45	55	206	121	342	0	0	0	0	548
4:00	6		3		0		0			16:00	54		117		0		0		
4:15	12		6		0		0			16:15	61		114		0		0		
4:30	28		15		0		0			16:30	53		149		0		0		
4:45	42	88	6	30	0	0	0	0	118	16:45	46	214	150	530	0	0	0	0	744
5:00	46		17		0		0			17:00	53		137		0		0		
5:15	69		27		0		0			17:15	44		132		0		0		
5:30	139		19		0		0			17:30	53		98		0		0		
5:45	113	367	13	76	0	0	0	0	443	17:45	44	194	119	486	0	0	0	0	680
6:00	64		30		0		0			18:00	49		121		0		0		
6:15	122		25		0		0			18:15	69		87		0		0		
6:30	99		41		0		0			18:30	56		69		0		0		
6:45	107	392	47	143	0	0	0	0	535	18:45	39	213	59	336	0	0	0	0	549
7:00	123		49		0		0			19:00	34		33		0		0		
7:15	123		47		0		0			19:15	41		29		0		0		
7:30	151		68		0		0			19:30	36		31		0		0		
7:45	127	524	78	242	0	0	0	0	766	19:45	25	136	28	121	0	0	0	0	257
8:00	70		60		0		0			20:00	21		28		0		0		
8:15	84		42		0		0			20:15	26		32		0		0		
8:30	87		51		0		0			20:30	35		26		0		0		
8:45	56	297	36	189	0	0	0	0	486	20:45	22	104	23	109	0	0	0	0	213
9:00	32		45		0		0			21:00	15		8		0		0		
9:15	58		30		0		0			21:15	12		13		0		0		
9:30	37		43		0		0			21:30	19		27		0		0		
9:45	37	164	51	169	0	0	0	0	333	21:45	15	61	10	58	0	0	0	0	119
10:00	30		40		0		0			22:00	9		9		0		0		
10:15	30		28		0		0			22:15	13		15		0		0		
10:30	30		29		0		0			22:30	13		9		0		0		
10:45	30	120	34	131	0	0	0	0	251	22:45	8	43	8	41	0	0	0	0	84
11:00	32		29		0		0			23:00	5		5		0		0		
11:15	38		39		0		0			23:15	6		4		0		0		
11:30	41		33		0		0			23:30	9		5		0		0		
11:45	32	143	36	137	0	0	0	0	280	23:45	1	21	5	19	0	0	0	0	40

Total Vol.	2134		1165						**3299**		1661		2634						**4295**

Daily Totals

NB	SB	EB	WB	**Combined**
3795	3799			**7594**

	AM				**PM**			
Split %	64.7%	35.3%		**43.4%**	38.7%	61.3%		**56.6%**
Peak Hour	7:00	7:15		**7:00**	15:45	16:30		**16:30**
Volume	524	253		**766**	223	568		**764**
P.H.F.	0.87	0.81		**0.87**	0.95	0.95		**0.95**

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Wednesday, October 17, 2018 | CITY: Santa Clarita | PROJECT: SC1841

ADT7 Benz north of Bouquet Canyon. | Prepared by: Field Data Services of Arizona | **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	5		2		0		0			12:00	20		13		0		0		
0:15	3		3		0		0			12:15	14		27		0		0		
0:30	2		3		0		0			12:30	18		23		0		0		
0:45	8	18	4	12	0	0	0	0	30	12:45	26	78	22	85	0	0	0	0	163
1:00	1		0		0		0			13:00	29		29		0		0		
1:15	2		1		0		0			13:15	22		34		0		0		
1:30	0		0		0		0			13:30	22		30		0		0		
1:45	2	5	2	3	0	0	0	0	8	13:45	27	100	30	123	0	0	0	0	223
2:00	1		1		0		0			14:00	33		27		0		0		
2:15	1		2		0		0			14:15	31		19		0		0		
2:30	0		0		0		0			14:30	25		31		0		0		
2:45	0	2	2	5	0	0	0	0	7	14:45	34	123	31	108	0	0	0	0	231
3:00	2		0		0		0			15:00	27		28		0		0		
3:15	1		0		0		0			15:15	35		40		0		0		
3:30	0		2		0		0			15:30	44		24		0		0		
3:45	2	5	1	3	0	0	0	0	8	15:45	29	135	28	120	0	0	0	0	255
4:00	1		2		0		0			16:00	48		26		0		0		
4:15	3		5		0		0			16:15	38		27		0		0		
4:30	0		4		0		0			16:30	40		27		0		0		
4:45	0	4	8	19	0	0	0	0	23	16:45	39	165	42	122	0	0	0	0	287
5:00	2		13		0		0			17:00	34		43		0		0		
5:15	2		17		0		0			17:15	45		29		0		0		
5:30	2		16		0		0			17:30	45		24		0		0		
5:45	4	10	20	66	0	0	0	0	76	17:45	42	166	40	136	0	0	0	0	302
6:00	4		24		0		0			18:00	41		35		0		0		
6:15	6		19		0		0			18:15	34		30		0		0		
6:30	11		24		0		0			18:30	35		37		0		0		
6:45	11	32	24	91	0	0	0	0	123	18:45	32	142	37	139	0	0	0	0	281
7:00	15		23		0		0			19:00	39		32		0		0		
7:15	31		37		0		0			19:15	32		15		0		0		
7:30	39		49		0		0			19:30	36		21		0		0		
7:45	42	127	36	145	0	0	0	0	272	19:45	38	145	19	87	0	0	0	0	232
8:00	32		40		0		0			20:00	35		24		0		0		
8:15	23		34		0		0			20:15	33		20		0		0		
8:30	21		27		0		0			20:30	38		16		0		0		
8:45	16	92	29	130	0	0	0	0	222	20:45	20	126	9	69	0	0	0	0	195
9:00	12		27		0		0			21:00	29		7		0		0		
9:15	16		22		0		0			21:15	17		12		0		0		
9:30	21		24		0		0			21:30	18		8		0		0		
9:45	13	62	23	96	0	0	0	0	158	21:45	17	81	8	35	0	0	0	0	116
10:00	20		22		0		0			22:00	10		6		0		0		
10:15	19		19		0		0			22:15	11		7		0		0		
10:30	14		18		0		0			22:30	9		8		0		0		
10:45	14	67	20	79	0	0	0	0	146	22:45	6	36	5	26	0	0	0	0	62
11:00	9		25		0		0			23:00	5		3		0		0		
11:15	21		24		0		0			23:15	5		3		0		0		
11:30	19		22		0		0			23:30	4		3		0		0		
11:45	26	75	16	87	0	0	0	0	162	23:45	2	16	2	11	0	0	0	0	27
Total Vol.		499		736					**1235**			1313		1061					**2374**

Daily Totals

NB	SB	EB	WB	**Combined**
1812	1797			**3609**

	AM				**PM**			
Split %	40.4%	59.6%		**34.2%**	55.3%	44.7%		**65.8%**
Peak Hour	7:15	7:15		**7:15**	17:15	17:45		**17:00**
Volume	144	162		**306**	173	142		**302**
P.H.F.	0.86	0.83		**0.87**	0.97	0.89		**0.92**

cs@aimtd.com Tell. 714 253 7888

Wednesday, October 17, 2018 | CITY: Santa Clarita | PROJECT: SC1841

ADT8 Copper Hill west of Benz. | Prepared by: Field Data Services of Arizon | **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		12		10			12:00	0		0		56		46		
0:30	0		0		8		3			12:30	0		0		57		46		
0:45	0	0	0	0	11	43	3	21	64	12:45	0	0	0	0	58	238	68	216	454
1:00	0		0		8		2			13:00	0		0		71		64		
1:15	0		0		3		1			13:15	0		0		76		92		
1:30	0		0		2		3			13:30	0		0		68		80		
1:45	0	0	0	0	3	16	3	9	25	13:45	0	0	0	0	109	324	94	330	654
2:00	0		0		1		2			14:00	0		0		104		74		
2:15	0		0		4		1			14:15	0		0		102		64		
2:30	0		0		2		2			14:30	0		0		122		73		
2:45	0	0	0	0	4	11	3	8	19	14:45	0	0	0	0	149	477	70	281	758
3:00	0		0		7		3			15:00	0		0		116		71		
3:15	0		0		2		1			15:15	0		0		141		82		
3:30	0		0		1		4			15:30	0		0		127		71		
3:45	0	0	0	0	3	13	9	17	30	15:45	0	0	0	0	195	579	77	301	880
4:00	0		0		2		10			16:00	0		0		139		78		
4:15	0		0		4		19			16:15	0		0		186		91		
4:30	0		0		7		35			16:30	0		0		212		85		
4:45	0	0	0	0	9	22	54	118	140	16:45	0	0	0	0	222	759	82	336	1095
5:00	0		0		8		62			17:00	0		0		190		94		
5:15	0		0		16		86			17:15	0		0		201		79		
5:30	0		0		13		137			17:30	0		0		153		78		
5:45	0	0	0	0	15	52	155	440	492	17:45	0	0	0	0	166	710	68	319	1029
6:00	0		0		25		101			18:00	0		0		181		72		
6:15	0		0		29		125			18:15	0		0		147		81		
6:30	0		0		27		152			18:30	0		0		150		78		
6:45	0	0	0	0	32	113	158	536	649	18:45	0	0	0	0	123	601	61	292	893
7:00	0		0		48		150			19:00	0		0		90		50		
7:15	0		0		58		238			19:15	0		0		77		44		
7:30	0		0		64		279			19:30	0		0		95		52		
7:45	0	0	0	0	99	269	217	884	1153	19:45	0	0	0	0	65	327	46	192	519
8:00	0		0		82		161			20:00	0		0		73		40		
8:15	0		0		80		149			20:15	0		0		70		31		
8:30	0		0		75		137			20:30	0		0		62		35		
8:45	0	0	0	0	68	305	123	570	875	20:45	0	0	0	0	46	251	20	126	377
9:00	0		0		53		68			21:00	0		0		40		28		
9:15	0		0		50		103			21:15	0		0		42		21		
9:30	0		0		27		31			21:30	0		0		41		24		
9:45	0	0	0	0	71	201	61	263	464	21:45	0	0	0	0	31	154	16	89	243
10:00	0		0		48		63			22:00	0		0		30		16		
10:15	0		0		40		60			22:15	0		0		25		8		
10:30	0		0		42		55			22:30	0		0		19		11		
10:45	0	0	0	0	37	167	46	224	391	22:45	0	0	0	0	19	93	12	47	140
11:00	0		0		65		42			23:00	0		0		16		5		
11:15	0		0		58		35			23:15	0		0		17		7		
11:30	0		0		54		75			23:30	0		0		12		6		
11:45	0	0	0	0	48	225	64	216	441	23:45	0	0	0	0	11	56	1	19	75
Total Vol.						1437		3306	**4743**							4569		2548	**7117**

Daily Totals

NB	SB	EB	WB	Combined
		6006	5854	**11860**

	AM			PM		
Split %	30.3%	69.7%	**40.0%**	64.2%	35.8%	**60.0%**
Peak Hour	7:45	7:15	**7:15**	16:30	16:15	**16:30**
Volume	336	895	**1198**	825	352	**1165**
P.H.F.	0.85	0.80	**0.87**	0.93	0.94	**0.96**

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

ADT9 Copper Hill west of Haskell Canyon. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		16		9			12:00	0		0		146		112		
0:15	0		0		15		8			12:15	0		0		141		104		
0:30	0		0		14		6			12:30	0		0		126		114		
0:45	0	0	0	0	27	72	6	29	101	12:45	0	0	0	0	145	558	134	464	1022
1:00	0		0		16		2			13:00	0		0		156		140		
1:15	0		0		9		5			13:15	0		0		180		146		
1:30	0		0		6		3			13:30	0		0		167		144		
1:45	0	0	0	0	9	40	5	15	55	13:45	0	0	0	0	173	676	122	552	1228
2:00	0		0		7		5			14:00	0		0		191		183		
2:15	0		0		5		4			14:15	0		0		234		163		
2:30	0		0		3		4			14:30	0		0		237		145		
2:45	0	0	0	0	8	23	8	21	44	14:45	0	0	0	0	231	893	151	642	1535
3:00	0		0		6		3			15:00	0		0		223		135		
3:15	0		0		1		4			15:15	0		0		254		151		
3:30	0		0		6		7			15:30	0		0		246		151		
3:45	0	0	0	0	11	24	24	38	62	15:45	0	0	0	0	305	1028	141	578	1606
4:00	0		0		3		16			16:00	0		0		245		117		
4:15	0		0		3		33			16:15	0		0		302		136		
4:30	0		0		6		58			16:30	0		0		345		147		
4:45	0	0	0	0	10	22	78	185	207	16:45	0	0	0	0	359	1251	169	569	1820
5:00	0		0		14		99			17:00	0		0		330		163		
5:15	0		0		16		129			17:15	0		0		345		164		
5:30	0		0		17		189			17:30	0		0		342		123		
5:45	0	0	0	0	28	75	231	648	723	17:45	0	0	0	0	319	1336	139	589	1925
6:00	0		0		30		136			18:00	0		0		311		157		
6:15	0		0		55		225			18:15	0		0		320		176		
6:30	0		0		35		241			18:30	0		0		314		162		
6:45	0	0	0	0	58	178	240	842	1020	18:45	0	0	0	0	260	1205	141	636	1841
7:00	0		0		92		241			19:00	0		0		226		101		
7:15	0		0		110		358			19:15	0		0		168		93		
7:30	0		0		124		385			19:30	0		0		187		106		
7:45	0	0	0	0	184	510	363	1347	1857	19:45	0	0	0	0	179	760	111	411	1171
8:00	0		0		139		314			20:00	0		0		178		96		
8:15	0		0		133		325			20:15	0		0		181		69		
8:30	0		0		154		240			20:30	0		0		143		59		
8:45	0	0	0	0	121	547	264	1143	1690	20:45	0	0	0	0	118	620	54	278	898
9:00	0		0		102		166			21:00	0		0		89		42		
9:15	0		0		93		193			21:15	0		0		106		61		
9:30	0		0		113		162			21:30	0		0		108		39		
9:45	0	0	0	0	108	416	132	653	1069	21:45	0	0	0	0	66	369	29	171	540
10:00	0		0		107		135			22:00	0		0		59		31		
10:15	0		0		82		129			22:15	0		0		53		22		
10:30	0		0		104		118			22:30	0		0		39		18		
10:45	0	0	0	0	83	376	101	483	859	22:45	0	0	0	0	41	192	26	97	289
11:00	0		0		129		107			23:00	0		0		35		16		
11:15	0		0		127		88			23:15	0		0		31		10		
11:30	0		0		116		125			23:30	0		0		26		19		
11:45	0	0	0	0	130	502	138	458	960	23:45	0	0	0	0	17	109	12	57	166
Total Vol.					2785		5862	**8647**							8997		5044		**14041**

	Daily Totals				
	NB	SB	EB	WB	**Combined**
			11782	10906	**22688**
	AM		**PM**		
Split %	32.2%	67.8%	**38.1%**	64.1%	35.9%	**61.9%**
Peak Hour	7:45	7:15	**7:15**	16:30	16:30	**16:30**
Volume	610	1420	**1977**	1379	643	**2022**
P.H.F.	0.83	0.92	**0.90**	0.96	0.95	**0.96**

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

ADT10 Seco Canyon south of Copper Hill. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	11		4		0		0			12:00	95		100		0		0		
0:15	14		9		0		0			12:15	121		84		0		0		
0:30	9		8		0		0			12:30	110		83		0		0		
0:45	14	48	5	26	0	0	0	0	74	12:45	101	427	102	369	0	0	0	0	796
1:00	12		3		0		0			13:00	104		93		0		0		
1:15	8		5		0		0			13:15	119		105		0		0		
1:30	3		3		0		0			13:30	115		104		0		0		
1:45	3	26	6	17	0	0	0	0	43	13:45	135	473	114	416	0	0	0	0	889
2:00	3		3		0		0			14:00	114		164		0		0		
2:15	2		6		0		0			14:15	194		156		0		0		
2:30	4		3		0		0			14:30	168		110		0		0		
2:45	2	11	6	18	0	0	0	0	29	14:45	125	601	114	544	0	0	0	0	1145
3:00	5		3		0		0			15:00	120		108		0		0		
3:15	0		2		0		0			15:15	158		106		0		0		
3:30	2		8		0		0			15:30	109		122		0		0		
3:45	5	12	4	17	0	0	0	0	29	15:45	111	498	96	432	0	0	0	0	930
4:00	3		11		0		0			16:00	134		94		0		0		
4:15	3		25		0		0			16:15	152		127		0		0		
4:30	5		35		0		0			16:30	154		118		0		0		
4:45	9	20	44	115	0	0	0	0	135	16:45	159	599	119	458	0	0	0	0	1057
5:00	13		46		0		0			17:00	137		145		0		0		
5:15	10		46		0		0			17:15	202		137		0		0		
5:30	17		51		0		0			17:30	165		118		0		0		
5:45	24	64	56	199	0	0	0	0	263	17:45	181	685	143	543	0	0	0	0	1228
6:00	25		60		0		0			18:00	198		134		0		0		
6:15	26		48		0		0			18:15	164		145		0		0		
6:30	45		98		0		0			18:30	203		152		0		0		
6:45	45	141	69	275	0	0	0	0	416	18:45	165	730	116	547	0	0	0	0	1277
7:00	74		101		0		0			19:00	132		92		0		0		
7:15	89		113		0		0			19:15	148		95		0		0		
7:30	91		132		0		0			19:30	116		93		0		0		
7:45	131	385	145	491	0	0	0	0	876	19:45	130	526	93	373	0	0	0	0	899
8:00	128		153		0		0			20:00	102		86		0		0		
8:15	125		180		0		0			20:15	122		93		0		0		
8:30	148		150		0		0			20:30	97		76		0		0		
8:45	149	550	105	588	0	0	0	0	1138	20:45	86	407	65	320	0	0	0	0	727
9:00	91		85		0		0			21:00	70		38		0		0		
9:15	70		104		0		0			21:15	90		54		0		0		
9:30	92		81		0		0			21:30	53		34		0		0		
9:45	87	340	93	363	0	0	0	0	703	21:45	42	255	20	146	0	0	0	0	401
10:00	75		87		0		0			22:00	32		34		0		0		
10:15	54		75		0		0			22:15	38		15		0		0		
10:30	68		77		0		0			22:30	30		29		0		0		
10:45	87	284	75	314	0	0	0	0	598	22:45	22	122	12	90	0	0	0	0	212
11:00	76		96		0		0			23:00	17		14		0		0		
11:15	82		99		0		0			23:15	24		9		0		0		
11:30	76		113		0		0			23:30	21		21		0		0		
11:45	78	312	92	400	0	0	0	0	712	23:45	18	80	7	51	0	0	0	0	131
Total Vol.		2193		2823					**5016**			5403		4289					**9692**

Daily Totals

NB	SB	EB	WB	Combined
7596	7112			**14708**

	AM			PM		
Split %	43.7%	56.3%	**34.1%**	55.7%	44.3%	**65.9%**
Peak Hour	8:00	7:45	**7:45**	17:15	17:45	**17:45**
Volume	550	628	**1160**	746	574	**1320**
P.H.F.	0.92	0.87	**0.95**	0.90	0.94	**0.93**

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

Prepared by: Field Data Services of Arizona

ADT11 Plum Canyon south of Bouquet Canyon. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	22		18		0		0			12:00	104		114		0		0		
0:15	10		13		0		0			12:15	111		130		0		0		
0:30	14		14		0		0			12:30	114		103		0		0		
0:45	7	53	15	60	0	0	0	0	113	12:45	134	463	127	474	0	0	0	0	937
1:00	16		11		0		0			13:00	142		181		0		0		
1:15	6		9		0		0			13:15	158		154		0		0		
1:30	5		7		0		0			13:30	155		140		0		0		
1:45	4	31	9	36	0	0	0	0	67	13:45	139	594	165	640	0	0	0	0	1234
2:00	6		6		0		0			14:00	167		190		0		0		
2:15	3		9		0		0			14:15	167		188		0		0		
2:30	2		7		0		0			14:30	170		201		0		0		
2:45	6	17	8	30	0	0	0	0	47	14:45	164	668	180	759	0	0	0	0	1427
3:00	4		5		0		0			15:00	172		164		0		0		
3:15	6		6		0		0			15:15	170		205		0		0		
3:30	4		12		0		0			15:30	183		172		0		0		
3:45	7	21	10	33	0	0	0	0	54	15:45	208	733	164	705	0	0	0	0	1438
4:00	6		10		0		0			16:00	171		173		0		0		
4:15	7		15		0		0			16:15	187		183		0		0		
4:30	8		29		0		0			16:30	180		207		0		0		
4:45	28	49	30	84	0	0	0	0	133	16:45	215	753	184	747	0	0	0	0	1500
5:00	21		35		0		0			17:00	204		216		0		0		
5:15	28		57		0		0			17:15	210		207		0		0		
5:30	21		51		0		0			17:30	222		194		0		0		
5:45	46	116	59	202	0	0	0	0	318	17:45	214	850	213	830	0	0	0	0	1680
6:00	54		59		0		0			18:00	184		234		0		0		
6:15	72		66		0		0			18:15	198		198		0		0		
6:30	90		88		0		0			18:30	177		196		0		0		
6:45	99	315	124	337	0	0	0	0	652	18:45	181	740	209	837	0	0	0	0	1577
7:00	130		114		0		0			19:00	141		212		0		0		
7:15	157		170		0		0			19:15	140		152		0		0		
7:30	212		161		0		0			19:30	115		141		0		0		
7:45	229	728	177	622	0	0	0	0	1350	19:45	123	519	142	647	0	0	0	0	1166
8:00	223		200		0		0			20:00	126		154		0		0		
8:15	219		159		0		0			20:15	116		158		0		0		
8:30	198		160		0		0			20:30	110		93		0		0		
8:45	142	782	170	689	0	0	0	0	1471	20:45	94	446	92	497	0	0	0	0	943
9:00	142		137		0		0			21:00	81		83		0		0		
9:15	178		124		0		0			21:15	88		92		0		0		
9:30	124		145		0		0			21:30	75		79		0		0		
9:45	96	540	126	532	0	0	0	0	1072	21:45	66	310	61	315	0	0	0	0	625
10:00	93		118		0		0			22:00	48		74		0		0		
10:15	95		112		0		0			22:15	35		65		0		0		
10:30	125		100		0		0			22:30	36		45		0		0		
10:45	99	412	111	441	0	0	0	0	853	22:45	24	143	31	215	0	0	0	0	358
11:00	96		116		0		0			23:00	22		34		0		0		
11:15	100		114		0		0			23:15	17		37		0		0		
11:30	106		130		0		0			23:30	23		28		0		0		
11:45	135	437	123	483	0	0	0	0	920	23:45	27	89	35	134	0	0	0	0	223
Total Vol.		3501		3549					**7050**			6308		6800					**13108**

Daily Totals

NB	SB	EB	WB	Combined
9809	10349			**20158**

	AM			PM		
Split %	49.7%	50.3%	**35.0%**	48.1%	51.9%	**65.0%**
Peak Hour	7:30	7:15	**7:30**	16:45	17:15	**17:00**
Volume	883	708	**1580**	851	848	**1680**
P.H.F.	0.96	0.89	**0.93**	0.98	0.91	**0.98**

ADT12 Whites Canyon east of Golden Valley. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		16		13			12:00	0		0		127		101		
0:15	0		0		10		13			12:15	0		0		108		108		
0:30	0		0		11		14			12:30	0		0		94		96		
0:45	0	0	0	0	11	48	9	49	97	12:45	0	0	0	0	108	437	130	435	872
1:00	0		0		5		13			13:00	0		0		132		132		
1:15	0		0		4		6			13:15	0		0		130		159		
1:30	0		0		7		7			13:30	0		0		125		155		
1:45	0	0	0	0	9	25	3	29	54	13:45	0	0	0	0	137	524	170	616	1140
2:00	0		0		2		3			14:00	0		0		196		113		
2:15	0		0		7		2			14:15	0		0		152		136		
2:30	0		0		3		5			14:30	0		0		186		162		
2:45	0	0	0	0	7	19	6	16	35	14:45	0	0	0	0	151	685	157	568	1253
3:00	0		0		5		2			15:00	0		0		164		164		
3:15	0		0		3		7			15:15	0		0		170		182		
3:30	0		0		6		6			15:30	0		0		159		169		
3:45	0	0	0	0	7	21	13	28	49	15:45	0	0	0	0	165	658	162	677	1335
4:00	0		0		7		6			16:00	0		0		166		137		
4:15	0		0		12		8			16:15	0		0		175		153		
4:30	0		0		22		18			16:30	0		0		174		154		
4:45	0	0	0	0	15	56	32	64	120	16:45	0	0	0	0	182	697	174	618	1315
5:00	0		0		25		31			17:00	0		0		218		154		
5:15	0		0		27		42			17:15	0		0		197		181		
5:30	0		0		22		57			17:30	0		0		190		156		
5:45	0	0	0	0	38	112	65	195	307	17:45	0	0	0	0	190	795	191	682	1477
6:00	0		0		31		75			18:00	0		0		242		158		
6:15	0		0		56		116			18:15	0		0		209		146		
6:30	0		0		72		138			18:30	0		0		209		177		
6:45	0	0	0	0	97	256	122	451	707	18:45	0	0	0	0	189	849	124	605	1454
7:00	0		0		122		159			19:00	0		0		202		119		
7:15	0		0		143		198			19:15	0		0		148		111		
7:30	0		0		123		242			19:30	0		0		133		103		
7:45	0	0	0	0	147	535	283	882	1417	19:45	0	0	0	0	150	633	97	430	1063
8:00	0		0		164		246			20:00	0		0		126		81		
8:15	0		0		127		210			20:15	0		0		125		79		
8:30	0		0		140		161			20:30	0		0		72		85		
8:45	0	0	0	0	124	555	124	741	1296	20:45	0	0	0	0	97	420	77	322	742
9:00	0		0		99		139			21:00	0		0		86		77		
9:15	0		0		94		156			21:15	0		0		86		60		
9:30	0		0		106		124			21:30	0		0		73		50		
9:45	0	0	0	0	104	403	95	514	917	21:45	0	0	0	0	63	308	55	242	550
10:00	0		0		83		85			22:00	0		0		65		44		
10:15	0		0		99		117			22:15	0		0		44		44		
10:30	0		0		84		86			22:30	0		0		46		30		
10:45	0	0	0	0	108	374	107	395	769	22:45	0	0	0	0	28	183	20	138	321
11:00	0		0		108		99			23:00	0		0		45		23		
11:15	0		0		97		97			23:15	0		0		26		24		
11:30	0		0		117		98			23:30	0		0		18		12		
11:45	0	0	0	0	109	431	116	410	841	23:45	0	0	0	0	15	104	20	79	183
Total Vol.					2835		3774	**6609**							6293		5412	**11705**	

Daily Totals

NB	SB	EB	WB	Combined
		9128	9186	**18314**

	AM			PM		
Split %	42.9%	57.1%	**36.1%**	53.8%	46.2%	**63.9%**
Peak Hour	7:45	7:30	**7:15**	17:45	17:15	**17:45**
Volume	578	981	**1546**	850	686	**1522**
P.H.F.	0.88	0.87	**0.90**	0.88	0.90	**0.95**

Wednesday, October 17, 2018 CITY: Santa Clarita PROJECT: SC1841

ADT13 Golden Valley south of Plum Canyon. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	11		8		0		0			12:00	79		69		0		0		
0:15	14		5		0		0			12:15	79		69		0		0		
0:30	8		4		0		0			12:30	69		56		0		0		
0:45	4	37	4	21	0	0	0	0	58	12:45	68	295	75	269	0	0	0	0	564
1:00	4		5		0		0			13:00	79		82		0		0		
1:15	2		5		0		0			13:15	102		79		0		0		
1:30	2		3		0		0			13:30	98		61		0		0		
1:45	3	11	0	13	0	0	0	0	24	13:45	106	385	82	304	0	0	0	0	689
2:00	2		4		0		0			14:00	71		106		0		0		
2:15	3		2		0		0			14:15	85		83		0		0		
2:30	0		5		0		0			14:30	105		100		0		0		
2:45	1	6	2	13	0	0	0	0	19	14:45	85	346	74	363	0	0	0	0	709
3:00	3		1		0		0			15:00	136		91		0		0		
3:15	1		5		0		0			15:15	128		107		0		0		
3:30	0		7		0		0			15:30	102		97		0		0		
3:45	2	6	14	27	0	0	0	0	33	15:45	124	490	87	382	0	0	0	0	872
4:00	2		13		0		0			16:00	134		90		0		0		
4:15	5		20		0		0			16:15	147		74		0		0		
4:30	8		41		0		0			16:30	143		89		0		0		
4:45	3	18	53	127	0	0	0	0	145	16:45	166	590	97	350	0	0	0	0	940
5:00	7		71		0		0			17:00	184		82		0		0		
5:15	4		87		0		0			17:15	170		79		0		0		
5:30	9		107		0		0			17:30	148		88		0		0		
5:45	13	33	92	357	0	0	0	0	390	17:45	158	660	97	346	0	0	0	0	1006
6:00	17		102		0		0			18:00	159		77		0		0		
6:15	31		122		0		0			18:15	173		86		0		0		
6:30	28		141		0		0			18:30	162		88		0		0		
6:45	33	109	115	480	0	0	0	0	589	18:45	138	632	76	327	0	0	0	0	959
7:00	49		121		0		0			19:00	107		60		0		0		
7:15	53		177		0		0			19:15	128		54		0		0		
7:30	79		194		0		0			19:30	96		57		0		0		
7:45	87	268	194	686	0	0	0	0	954	19:45	121	452	40	211	0	0	0	0	663
8:00	76		189		0		0			20:00	117		69		0		0		
8:15	53		155		0		0			20:15	109		52		0		0		
8:30	65		136		0		0			20:30	73		29		0		0		
8:45	44	238	127	607	0	0	0	0	845	20:45	79	378	28	178	0	0	0	0	556
9:00	63		102		0		0			21:00	71		26		0		0		
9:15	57		116		0		0			21:15	78		22		0		0		
9:30	55		86		0		0			21:30	59		17		0		0		
9:45	53	228	79	383	0	0	0	0	611	21:45	63	271	18	83	0	0	0	0	354
10:00	51		85		0		0			22:00	32		21		0		0		
10:15	48		74		0		0			22:15	27		14		0		0		
10:30	55		78		0		0			22:30	44		10		0		0		
10:45	67	221	75	312	0	0	0	0	533	22:45	28	131	10	55	0	0	0	0	186
11:00	70		70		0		0			23:00	29		12		0		0		
11:15	66		72		0		0			23:15	19		7		0		0		
11:30	73		67		0		0			23:30	20		8		0		0		
11:45	84	293	68	277	0	0	0	0	570	23:45	11	79	3	30	0	0	0	0	109

Total Vol.	1468		3303						**4771**		4709		2898						**7607**

Daily Totals

NB	SB	EB	WB	**Combined**
6177	6201			**12378**

	AM					**PM**				
Split %	30.8%	69.2%			**38.5%**	61.9%	38.1%			**61.5%**
Peak Hour	11:30	7:15			**7:15**	16:45	15:00			**16:45**
Volume	315	754			**1049**	668	382			**1014**
P.H.F.	0.94	0.97			**0.93**	0.94	0.89			**0.95**

ADT14 Newhall Ranch west of Golden Valley. Prepared by: Field Data Services of Arizona **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
0:00	0		0		58		53			12:00	0		0		344		283		
0:15	0		0		52		63			12:15	0		0		312		302		
0:30	0		0		36		29			12:30	0		0		273		345		
0:45	0	0	0	0	58	204	36	181	385	12:45	0	0	0	0	294	1223	369	1299	2522
1:00	0		0		37		28			13:00	0		0		323		348		
1:15	0		0		58		26			13:15	0		0		346		402		
1:30	0		0		37		28			13:30	0		0		331		440		
1:45	0	0	0	0	25	157	30	112	269	13:45	0	0	0	0	386	1386	445	1635	3021
2:00	0		0		34		22			14:00	0		0		466		358		
2:15	0		0		30		14			14:15	0		0		448		381		
2:30	0		0		29		24			14:30	0		0		468		355		
2:45	0	0	0	0	26	119	36	96	215	14:45	0	0	0	0	525	1907	390	1484	3391
3:00	0		0		35		33			15:00	0		0		435		375		
3:15	0		0		22		19			15:15	0		0		457		396		
3:30	0		0		26		41			15:30	0		0		507		374		
3:45	0	0	0	0	46	129	65	158	287	15:45	0	0	0	0	540	1939	441	1586	3525
4:00	0		0		33		69			16:00	0		0		521		387		
4:15	0		0		34		74			16:15	0		0		575		437		
4:30	0		0		38		109			16:30	0		0		488		414		
4:45	0	0	0	0	61	166	172	424	590	16:45	0	0	0	0	578	2162	467	1705	3867
5:00	0		0		81		125			17:00	0		0		594		374		
5:15	0		0		90		165			17:15	0		0		628		432		
5:30	0		0		88		191			17:30	0		0		576		464		
5:45	0	0	0	0	124	383	289	770	1153	17:45	0	0	0	0	568	2366	418	1688	4054
6:00	0		0		140		242			18:00	0		0		510		453		
6:15	0		0		141		263			18:15	0		0		577		384		
6:30	0		0		152		250			18:30	0		0		483		364		
6:45	0	0	0	0	175	608	423	1178	1786	18:45	0	0	0	0	517	2087	343	1544	3631
7:00	0		0		210		370			19:00	0		0		416		315		
7:15	0		0		270		416			19:15	0		0		356		301		
7:30	0		0		301		600			19:30	0		0		309		260		
7:45	0	0	0	0	353	1134	604	1990	3124	19:45	0	0	0	0	276	1357	290	1166	2523
8:00	0		0		359		576			20:00	0		0		307		193		
8:15	0		0		336		538			20:15	0		0		312		240		
8:30	0		0		315		421			20:30	0		0		213		191		
8:45	0	0	0	0	336	1346	470	2005	3351	20:45	0	0	0	0	239	1071	183	807	1878
9:00	0		0		266		360			21:00	0		0		185		170		
9:15	0		0		293		348			21:15	0		0		191		161		
9:30	0		0		294		340			21:30	0		0		179		125		
9:45	0	0	0	0	282	1135	339	1387	2522	21:45	0	0	0	0	129	684	105	561	1245
10:00	0		0		230		314			22:00	0		0		142		100		
10:15	0		0		232		257			22:15	0		0		145		93		
10:30	0		0		255		302			22:30	0		0		101		87		
10:45	0	0	0	0	267	984	345	1218	2202	22:45	0	0	0	0	78	466	101	381	847
11:00	0		0		244		321			23:00	0		0		120		67		
11:15	0		0		282		296			23:15	0		0		83		61		
11:30	0		0		273		324			23:30	0		0		78		41		
11:45	0	0	0	0	320	1119	346	1287	2406	23:45	0	0	0	0	65	346	41	210	556

Total Vol.					7484		10806	**18290**							16994		14066	**31060**	

Daily Totals

NB	SB	EB	WB	**Combined**
		24478	24872	**49350**

	AM				**PM**		
Split %	40.9%	59.1%	**37.1%**		54.7%	45.3%	**62.9%**
Peak Hour	7:45	7:30	**7:30**		16:45	17:15	**16:45**
Volume	1363	2318	**3667**		2376	1767	**4113**
P.H.F.	0.95	0.96	**0.96**		0.95	0.95	**0.97**

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

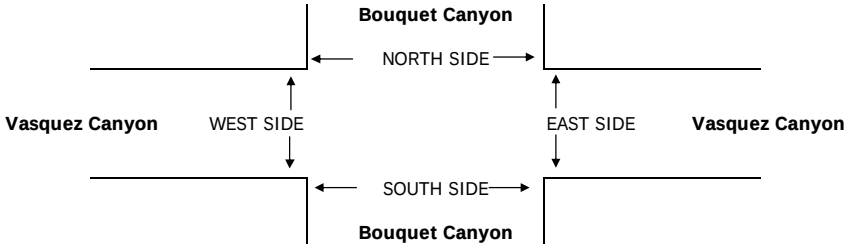
LOCATION: Santa Clarita
NORTH & SOUTH: Bouquet Canyon
EAST & WEST: Vasquez Canyon
PROJECT #: SC1841
LOCATION #: 1
CONTROL: STOP W

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

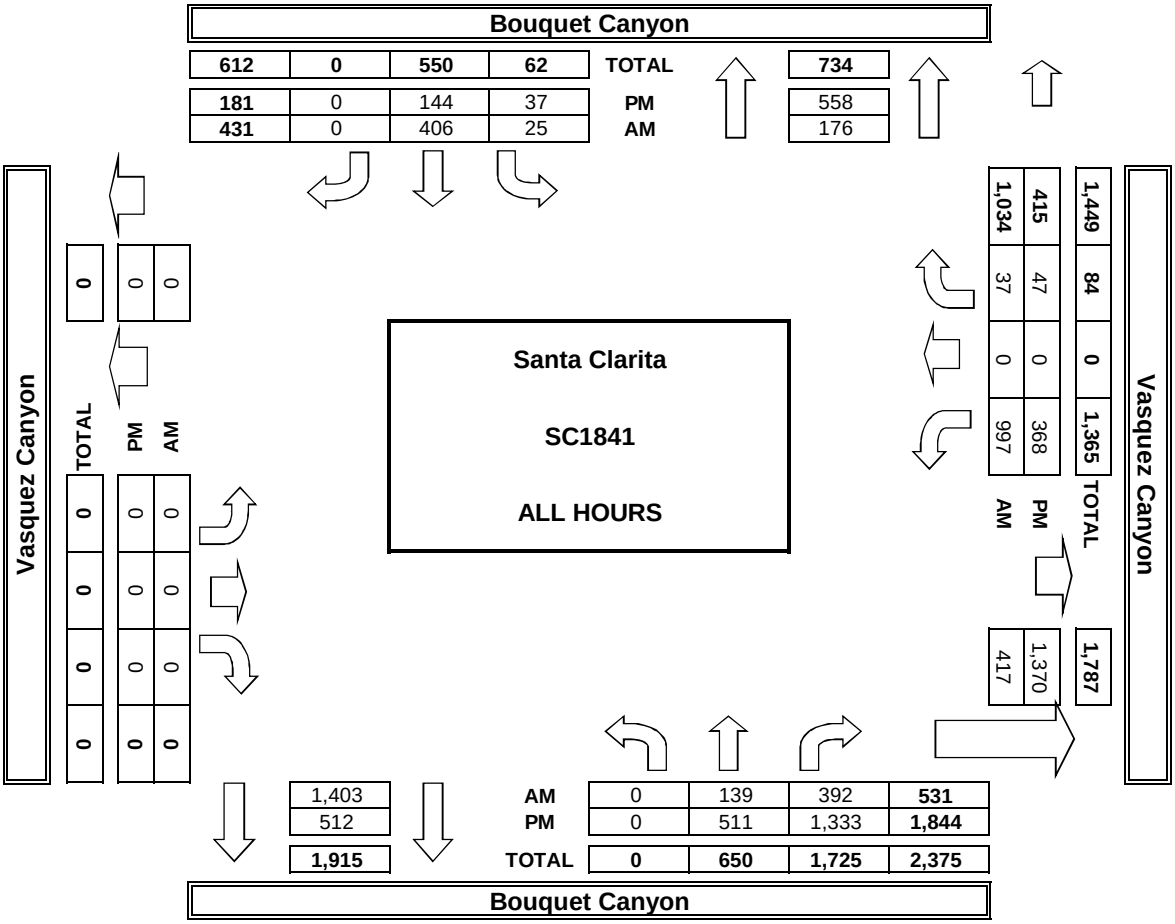
		NORTHBOUND Bouquet Canyon			SOUTHBOUND Bouquet Canyon			EASTBOUND Vasquez Canyon			WESTBOUND Vasquez Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	5	37	5	56	0	0	0	0	194	0	5	302	0	0	0	0	0
	7:15 AM	0	8	55	5	62	0	0	0	0	170	0	2	302	0	0	0	0	0
	7:30 AM	0	15	49	2	57	0	0	0	0	157	0	1	281	0	0	0	0	0
	7:45 AM	0	13	76	1	55	0	0	0	0	124	0	4	273	0	0	0	0	0
	8:00 AM	0	13	60	3	44	0	0	0	0	87	0	7	214	0	0	0	0	0
	8:15 AM	0	20	43	2	46	0	0	0	0	92	0	8	211	0	0	0	0	0
	8:30 AM	0	29	37	2	52	0	0	0	0	101	0	3	224	0	0	0	0	0
	8:45 AM	0	36	35	5	34	0	0	0	0	72	0	7	189	0	0	0	0	0
	VOLUMES	0	139	392	25	406	0	0	0	0	997	0	37	1,996	0	0	0	0	0
	APPROACH %	0%	26%	74%	6%	94%	0%	0%	0%	0%	96%	0%	4%						
	APP/DEPART	531	/	176	431	/	1,403	0	/	417	1,034	/	0	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	41	217	13	230	0	0	0	0	645	0	12	1,158					
	APPROACH %	0%	16%	84%	5%	95%	0%	0%	0%	0%	98%	0%	2%						
	PEAK HR FACTOR		0.725			0.907			0.000			0.825		0.959					
	APP/DEPART	258	/	53	243	/	875	0	/	230	657	/	0	0					
PM	4:00 PM	0	64	137	7	13	0	0	0	0	42	0	9	272	0	0	0	0	0
	4:15 PM	0	57	162	4	20	0	0	0	0	49	0	5	297	0	0	0	0	0
	4:30 PM	0	65	152	5	17	0	0	0	0	49	0	6	294	0	0	0	0	0
	4:45 PM	0	82	170	5	23	0	0	0	0	46	0	8	334	0	0	0	0	0
	5:00 PM	0	61	201	6	15	0	0	0	0	43	0	6	332	0	0	0	0	0
	5:15 PM	0	56	178	1	19	0	0	0	0	61	0	7	322	0	0	0	0	0
	5:30 PM	0	66	177	4	18	0	0	0	0	45	0	4	314	0	0	0	0	0
	5:45 PM	0	60	156	5	19	0	0	0	0	33	0	2	275	0	0	0	0	0
	VOLUMES	0	511	1,333	37	144	0	0	0	0	368	0	47	2,440	0	0	0	0	0
	APPROACH %	0%	28%	72%	20%	80%	0%	0%	0%	0%	89%	0%	11%						
	APP/DEPART	1,844	/	558	181	/	512	0	/	1,370	415	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	265	726	16	75	0	0	0	0	195	0	25	1,302					
	APPROACH %	0%	27%	73%	18%	82%	0%	0%	0%	0%	89%	0%	11%						
	PEAK HR FACTOR		0.946			0.813			0.000			0.809		0.975					
	APP/DEPART	991	/	290	91	/	270	0	/	742	220	/	0	0					

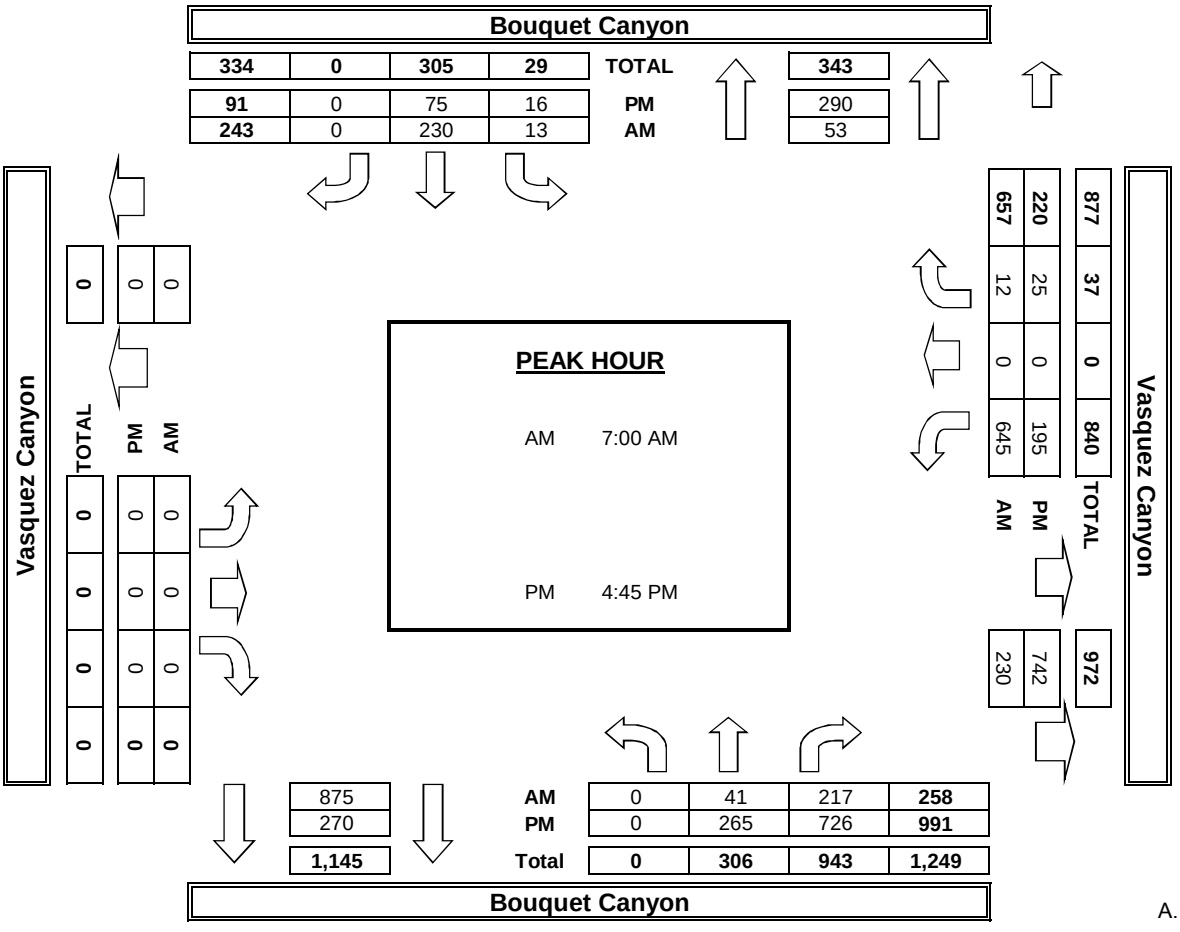


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:00 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: David
EAST & WEST: Copper Hill

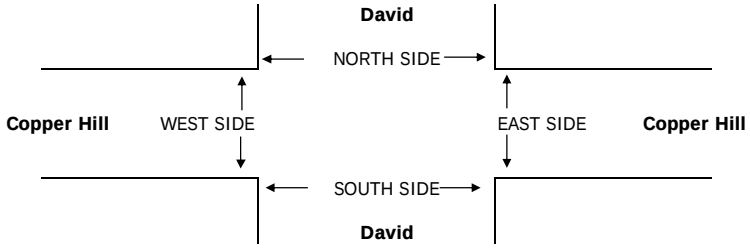
PROJECT #: SC1841
LOCATION #: 4
CONTROL: STOP E

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☐ Add U-Turns to Left Turns

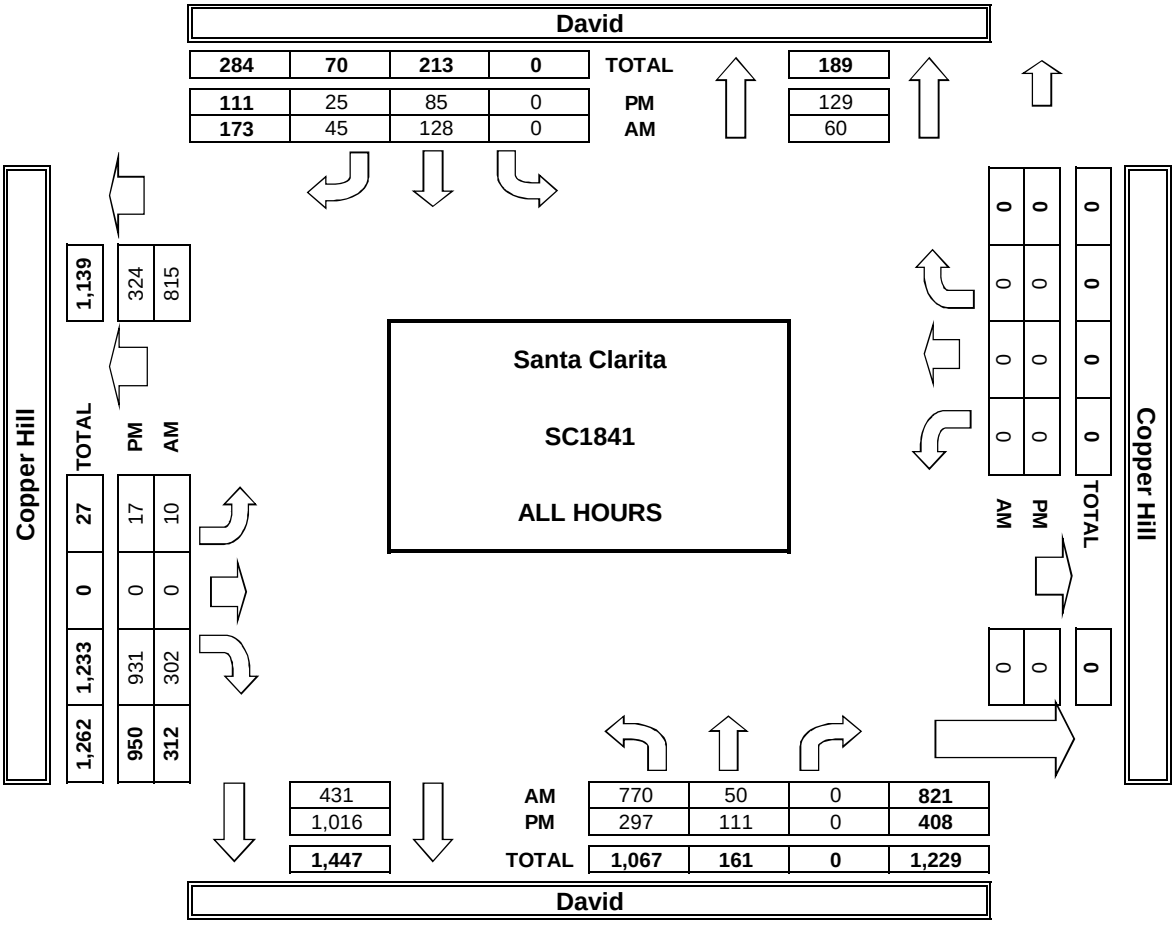
		NORTHBOUND David			SOUTHBOUND David			EASTBOUND Copper Hill			WESTBOUND Copper Hill				U-TURNS				
	LANES:	NL 0	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	121	2	0	0	13	4	3	0	36	0	0	0	179	0	0	0	0	0
	7:15 AM	120	3	0	0	12	5	0	0	35	0	0	0	175	0	0	0	0	0
	7:30 AM	147	4	0	0	26	10	2	0	42	0	0	0	231	0	0	0	0	0
	7:45 AM	118	9	0	0	30	6	0	0	48	0	0	0	211	0	0	0	0	0
	8:00 AM	63	7	0	0	13	5	2	0	47	0	0	0	137	0	0	0	0	0
	8:15 AM	72	11	0	0	11	5	0	0	30	0	0	0	129	1	0	0	0	1
	8:30 AM	79	8	0	0	14	4	1	0	37	0	0	0	143	0	0	0	0	0
	8:45 AM	50	6	0	0	9	6	2	0	27	0	0	0	100	0	0	0	0	0
	VOLUMES	770	50	0	0	128	45	10	0	302	0	0	0	1,306	1	0	0	0	1
	APPROACH %	94%	6%	0%	0%	74%	26%	3%	0%	97%	0%	0%	0%						
	APP/DEPART	821	/	60	173	/	431	312	/	0	0	/	815	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	506	18	0	0	81	25	5	0	161	0	0	0	796					
	APPROACH %	97%	3%	0%	0%	76%	24%	3%	0%	97%	0%	0%	0%						
	PEAK HR FACTOR		0.868			0.736			0.865			0.000		0.861					
	APP/DEPART	524	/	23	106	/	242	166	/	0	0	/	531	0					
PM	4:00 PM	37	17	0	0	6	1	2	0	111	0	0	0	174	0	0	0	0	0
	4:15 PM	50	11	0	0	11	3	2	0	103	0	0	0	180	0	0	0	0	0
	4:30 PM	42	11	0	0	8	4	2	0	141	0	0	0	208	0	0	0	0	0
	4:45 PM	36	10	0	0	13	1	2	0	137	0	0	0	199	0	0	0	0	0
	5:00 PM	37	16	0	0	20	4	5	0	117	0	0	0	199	0	0	1	0	1
	5:15 PM	25	19	0	0	9	4	2	0	123	0	0	0	182	0	1	0	0	1
	5:30 PM	34	19	0	0	6	5	1	0	92	0	0	0	157	0	0	1	0	1
	5:45 PM	36	8	0	0	12	3	1	0	107	0	0	0	167	0	0	0	0	0
	VOLUMES	297	111	0	0	85	25	17	0	931	0	0	0	1,469	0	1	2	0	3
	APPROACH %	73%	27%	0%	0%	77%	23%	2%	0%	98%	0%	0%	0%						
	APP/DEPART	408	/	129	111	/	1,016	950	/	0	0	/	324	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	140	56	0	0	50	13	11	0	518	0	0	0	790					
	APPROACH %	71%	29%	0%	0%	78%	20%	2%	0%	98%	0%	0%	0%						
	PEAK HR FACTOR		0.925			0.667			0.927			0.000		0.950					
	APP/DEPART	196	/	68	64	/	568	530	/	0	0	/	154	0					

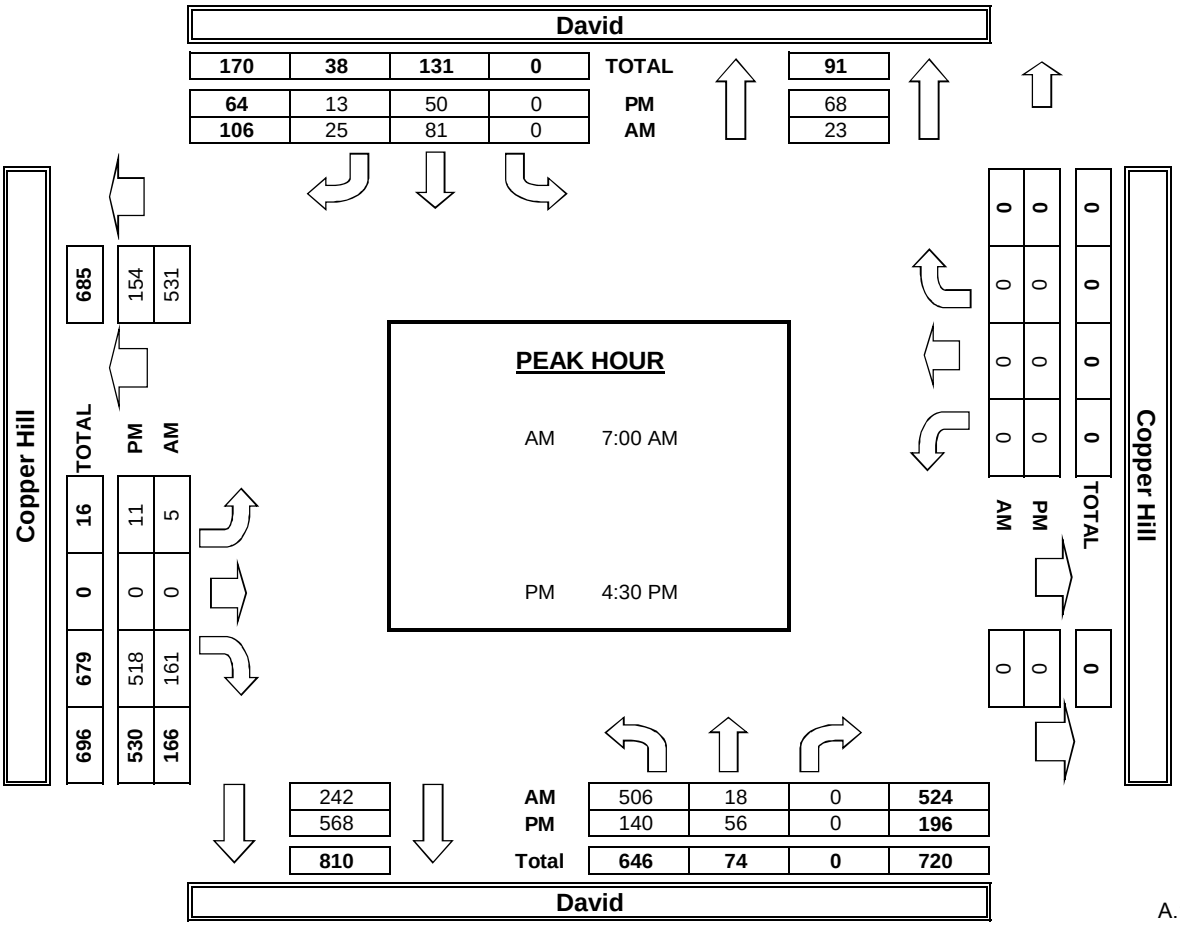


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	8:00 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	8:15 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	TOTAL	1	0	0	5	6	1	0	0	5	6	0	0	0	0	0
	AM BEGIN PEAK HR			7:00 AM			0	0	0	2	2					
PM	4:00 PM	2	0	0	1	3	1	0	0	1	2	1	0	0	0	1
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2	0	0	1	3	1	0	0	1	2	1	0	0	0	1
	PM BEGIN PEAK HR			4:30 PM			0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

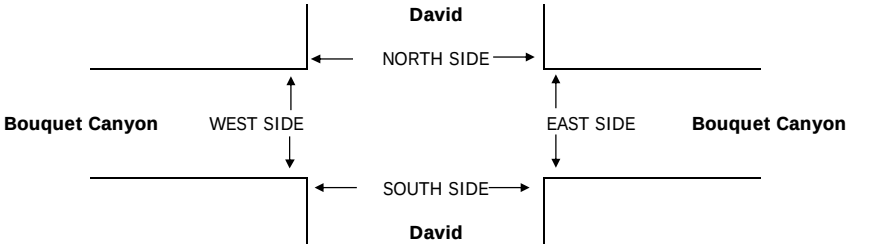
LOCATION: Santa Clarita
NORTH & SOUTH: David
EAST & WEST: Bouquet Canyon
PROJECT #: SC1841
LOCATION #: 5
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

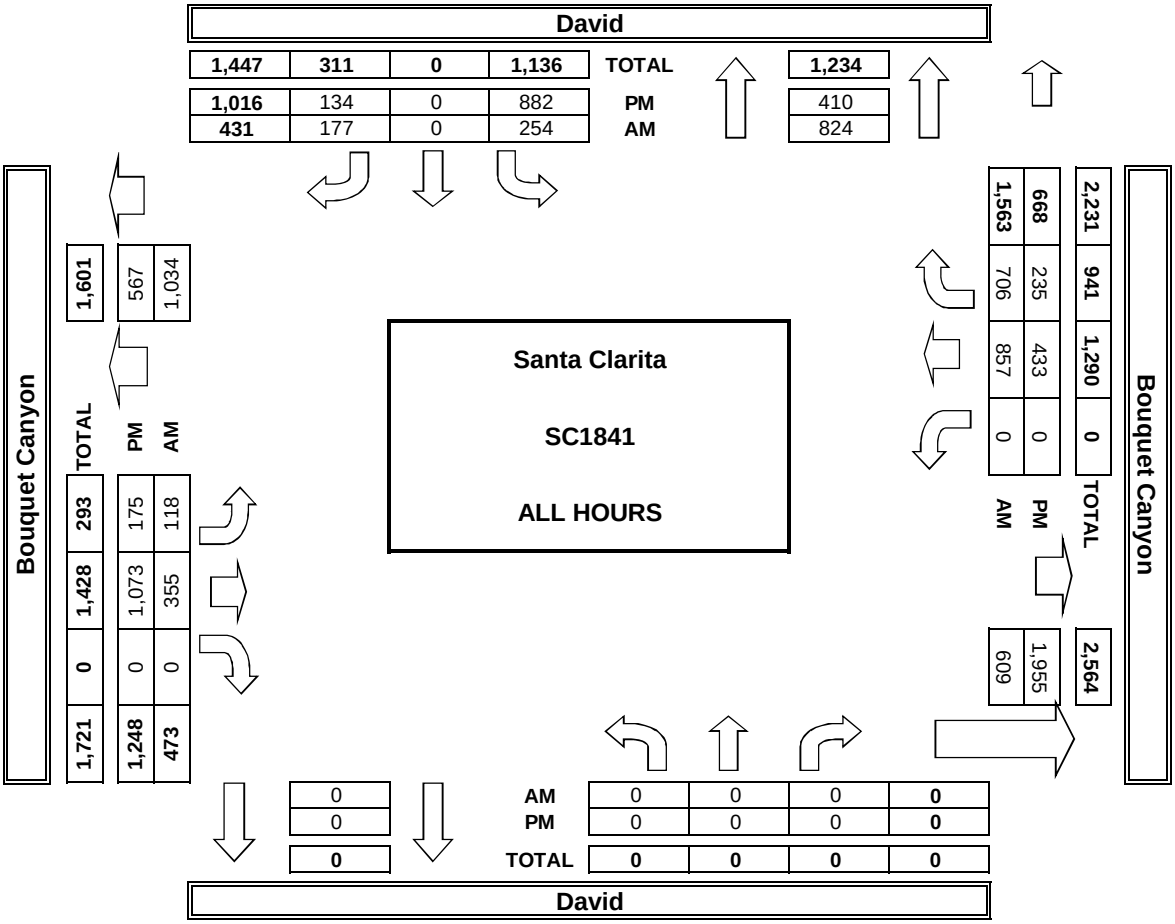
		NORTHBOUND David			SOUTHBOUND David			EASTBOUND Bouquet Canyon			WESTBOUND Bouquet Canyon				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	25	0	17	12	37	0	0	118	106	315	0	0	0	0	0
	7:15 AM	0	0	0	29	0	19	9	28	0	0	142	117	344	0	0	0	0	0
	7:30 AM	0	0	0	39	0	29	13	42	0	0	139	139	401	0	0	0	0	0
	7:45 AM	0	0	0	42	0	40	24	57	0	0	121	103	387	0	0	0	0	0
	8:00 AM	0	0	0	39	0	23	19	48	0	0	94	56	279	0	0	0	0	0
	8:15 AM	0	0	0	28	0	15	16	48	0	0	85	63	255	0	0	0	0	0
	8:30 AM	0	0	0	31	0	18	12	41	0	0	89	75	266	0	0	0	0	0
	8:45 AM	0	0	0	21	0	16	13	54	0	0	69	47	220	0	0	0	0	0
	VOLUMES	0	0	0	254	0	177	118	355	0	0	857	706	2,467	0	0	0	0	0
	APPROACH %	0%	0%	0%	59%	0%	41%	25%	75%	0%	0%	55%	45%						
	APP/DEPART	0	/	824	431	/	0	473	/	609	1,563	/	1,034	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	135	0	105	58	164	0	0	520	465	1,447					
	APPROACH %	0%	0%	0%	56%	0%	44%	26%	74%	0%	0%	53%	47%						
	PEAK HR FACTOR		0.000			0.732			0.685			0.886		0.902					
	APP/DEPART	0	/	523	240	/	0	222	/	299	985	/	625	0					
PM	4:00 PM	0	0	0	106	0	13	22	119	0	0	45	36	341	0	0	0	0	0
	4:15 PM	0	0	0	98	0	13	15	151	0	0	42	47	366	0	0	0	0	0
	4:30 PM	0	0	0	135	0	20	23	119	0	0	53	29	379	0	0	0	0	0
	4:45 PM	0	0	0	127	0	15	17	152	0	0	55	30	396	0	0	0	0	0
	5:00 PM	0	0	0	124	0	21	24	129	0	0	49	29	376	0	0	0	0	0
	5:15 PM	0	0	0	106	0	19	26	166	0	0	64	20	401	0	0	0	0	0
	5:30 PM	0	0	0	90	0	13	29	133	0	0	66	24	355	0	0	0	0	0
	5:45 PM	0	0	0	96	0	20	19	104	0	0	59	20	318	0	0	0	0	0
	VOLUMES	0	0	0	882	0	134	175	1,073	0	0	433	235	2,932	0	0	0	0	0
	APPROACH %	0%	0%	0%	87%	0%	13%	14%	86%	0%	0%	65%	35%						
	APP/DEPART	0	/	410	1,016	/	0	1,248	/	1,955	668	/	567	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	492	0	75	90	566	0	0	221	108	1,552					
	APPROACH %	0%	0%	0%	87%	0%	13%	14%	86%	0%	0%	67%	33%						
	PEAK HR FACTOR		0.000			0.915			0.854			0.968		0.968					
	APP/DEPART	0	/	198	567	/	0	656	/	1,058	329	/	296	0					

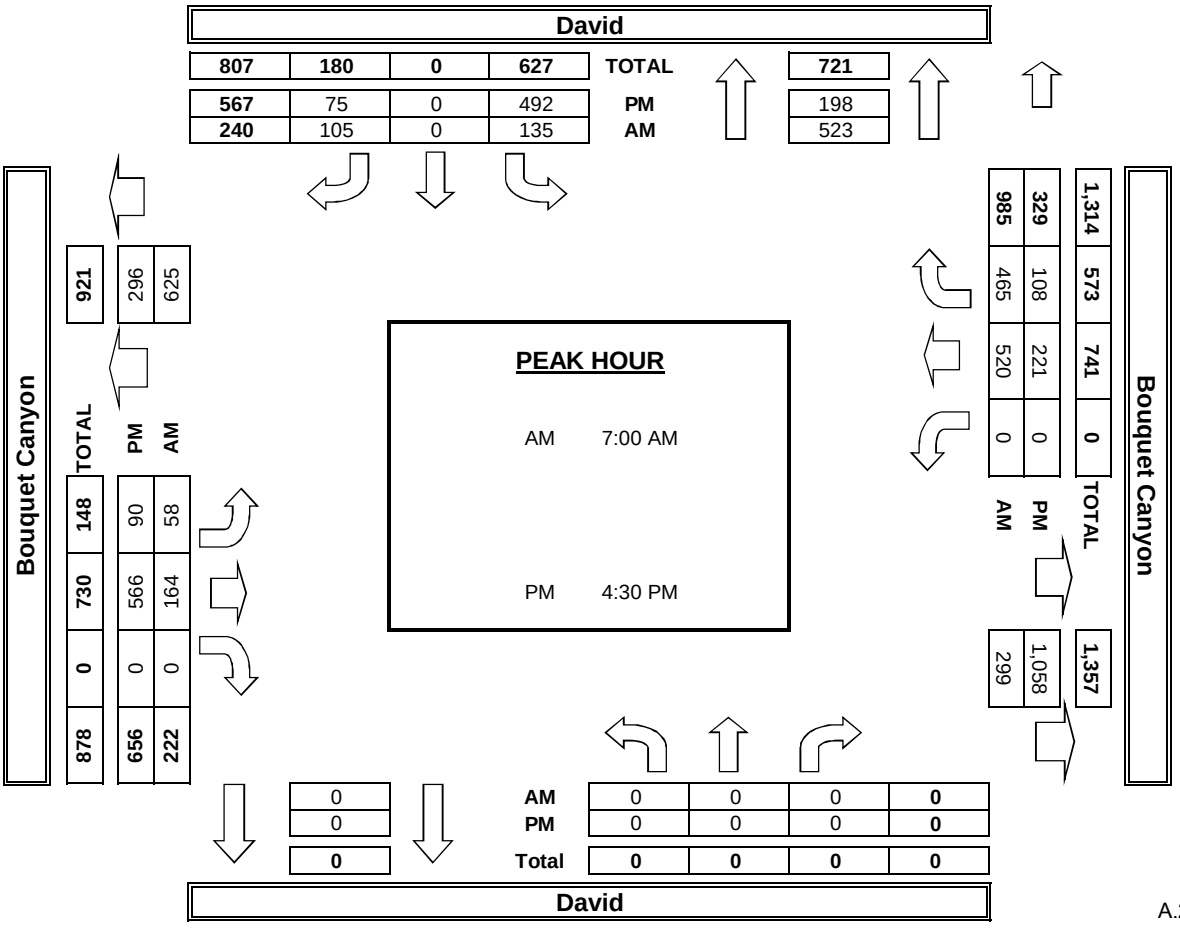


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	3	0	0	0	3	2	0	0	0	2	1	0	0	0	1
	AM BEGIN PEAK HR	7:00 AM					0	0	0	0	0					
PM	4:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	2	0	0	3	1	0	0	0	1	0	2	0	0	2
	PM BEGIN PEAK HR	4:30 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

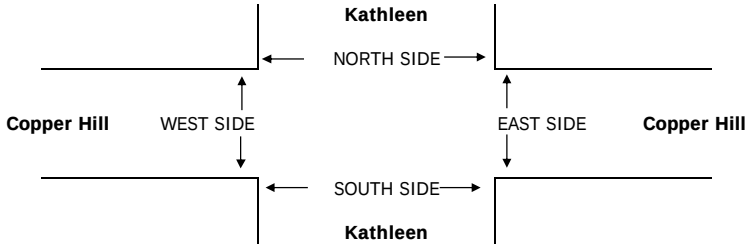
DATE:					
Wed, Oct 17, 18	LOCATION:	Santa Clarita	PROJECT #:	SC1841
	NORTH & SOUTH:	Kathleen	LOCATION #:	6
	EAST & WEST:	Copper Hill	CONTROL:	STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

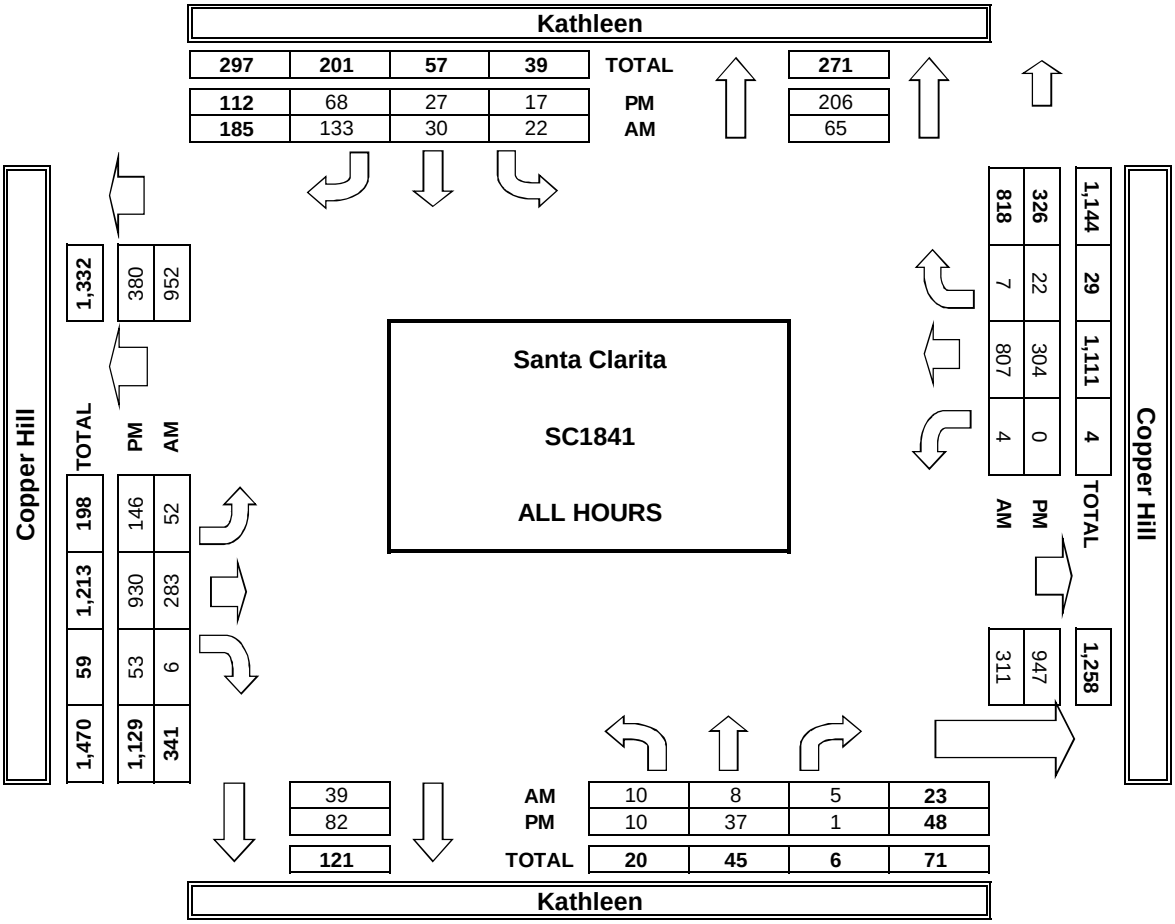
		NORTHBOUND Kathleen			SOUTHBOUND Kathleen			EASTBOUND Copper Hill			WESTBOUND Copper Hill				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	1	0	3	3	9	2	36	0	1	114	0	169	0	0	1	0	1
	7:15 AM	1	0	0	4	6	20	3	29	2	0	131	0	196	0	0	0	0	0
	7:30 AM	2	3	2	4	7	30	6	39	0	1	156	0	250	0	0	0	1	1
	7:45 AM	1	1	1	2	8	20	8	43	1	2	123	2	212	0	0	0	0	0
	8:00 AM	3	1	1	1	2	17	8	48	1	0	71	1	154	0	0	1	0	1
	8:15 AM	1	1	0	1	1	10	10	28	2	0	71	0	125	0	0	0	0	0
	8:30 AM	2	0	0	4	2	12	6	35	0	0	80	2	143	0	0	0	0	0
	8:45 AM	0	1	1	3	1	15	9	25	0	0	61	2	118	0	0	0	0	0
	VOLUMES	10	8	5	22	30	133	52	283	6	4	807	7	1,367	0	0	2	1	3
	APPROACH %	43%	35%	22%	12%	16%	72%	15%	83%	2%	0%	99%	1%						
	APP/DEPART	23	/	65	185	/	39	341	/	311	818	/	952	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	4	5	3	13	24	79	19	147	3	4	524	2	827					
	APPROACH %	33%	42%	25%	11%	21%	68%	11%	87%	2%	1%	99%	0%						
	PEAK HR FACTOR		0.429			0.707			0.813			0.844		0.827					
	APP/DEPART	12	/	25	116	/	30	169	/	164	530	/	608	0					
PM	4:00 PM	0	3	0	0	0	9	13	101	4	0	36	3	169	0	0	0	0	0
	4:15 PM	2	4	0	0	7	4	12	127	5	0	51	3	215	1	0	0	0	1
	4:30 PM	1	4	0	4	2	6	21	132	9	0	41	3	223	0	0	0	0	0
	4:45 PM	1	5	0	2	2	13	21	146	16	0	39	3	248	0	0	0	0	0
	5:00 PM	2	4	0	3	3	12	20	105	10	0	37	2	198	0	1	0	0	1
	5:15 PM	3	6	0	5	3	8	20	118	4	0	29	1	197	1	0	0	0	1
	5:30 PM	0	7	1	2	5	6	23	99	3	0	37	1	184	0	0	0	0	0
	5:45 PM	1	4	0	1	5	10	16	102	2	0	34	6	181	0	0	0	0	0
	VOLUMES	10	37	1	17	27	68	146	930	53	0	304	22	1,615	2	1	0	0	3
	APPROACH %	21%	77%	2%	15%	24%	61%	13%	82%	5%	0%	93%	7%						
	APP/DEPART	48	/	206	112	/	82	1,129	/	947	326	/	380	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	6	17	0	9	14	35	74	510	40	0	168	11	884					
	APPROACH %	26%	74%	0%	16%	24%	60%	12%	82%	6%	0%	94%	6%						
	PEAK HR FACTOR		0.958			0.806			0.852			0.829		0.891					
	APP/DEPART	23	/	103	58	/	55	624	/	518	179	/	208	0					

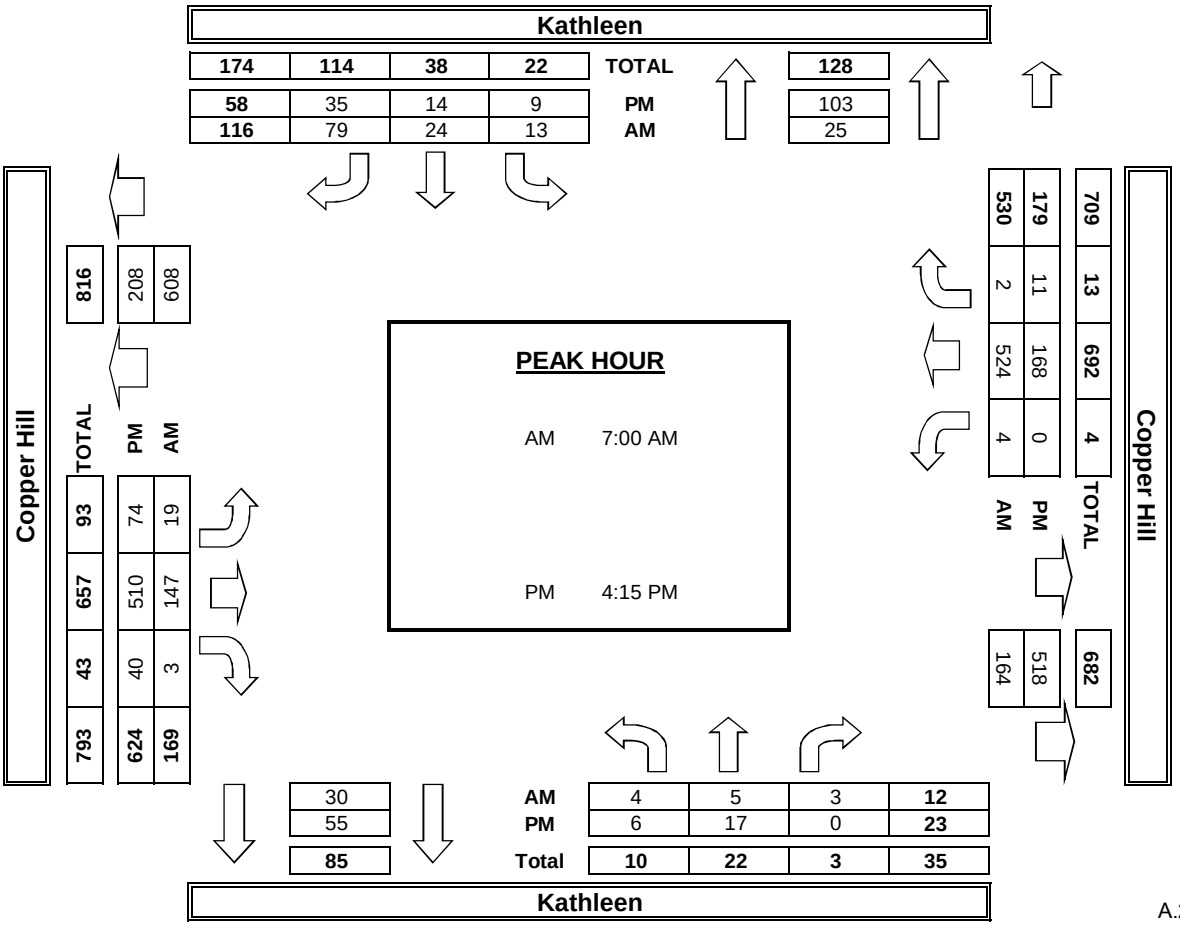


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	2	1	3	0	0	2	1	3	0	0	0	0	0
	8:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	TOTAL	0	0	4	3	7	0	0	4	3	7	0	0	0	0	0
	AM BEGIN PEAK HR			7:00 AM			0	0	1	1	2					
PM	4:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	4:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	2	0	3	0	0	2	0	2	1	0	0	0	1
	PM BEGIN PEAK HR			4:15 PM			0	0	2	0	2					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

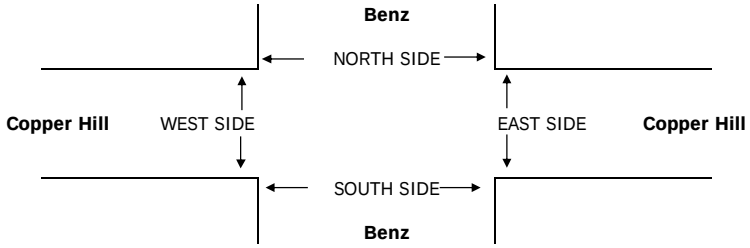
LOCATION: Santa Clarita
NORTH & SOUTH: Benz
EAST & WEST: Copper Hill
PROJECT #: SC1841
LOCATION #: 7
CONTROL: STOP N

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, ▼ S

Add U-Turns to Left Turns

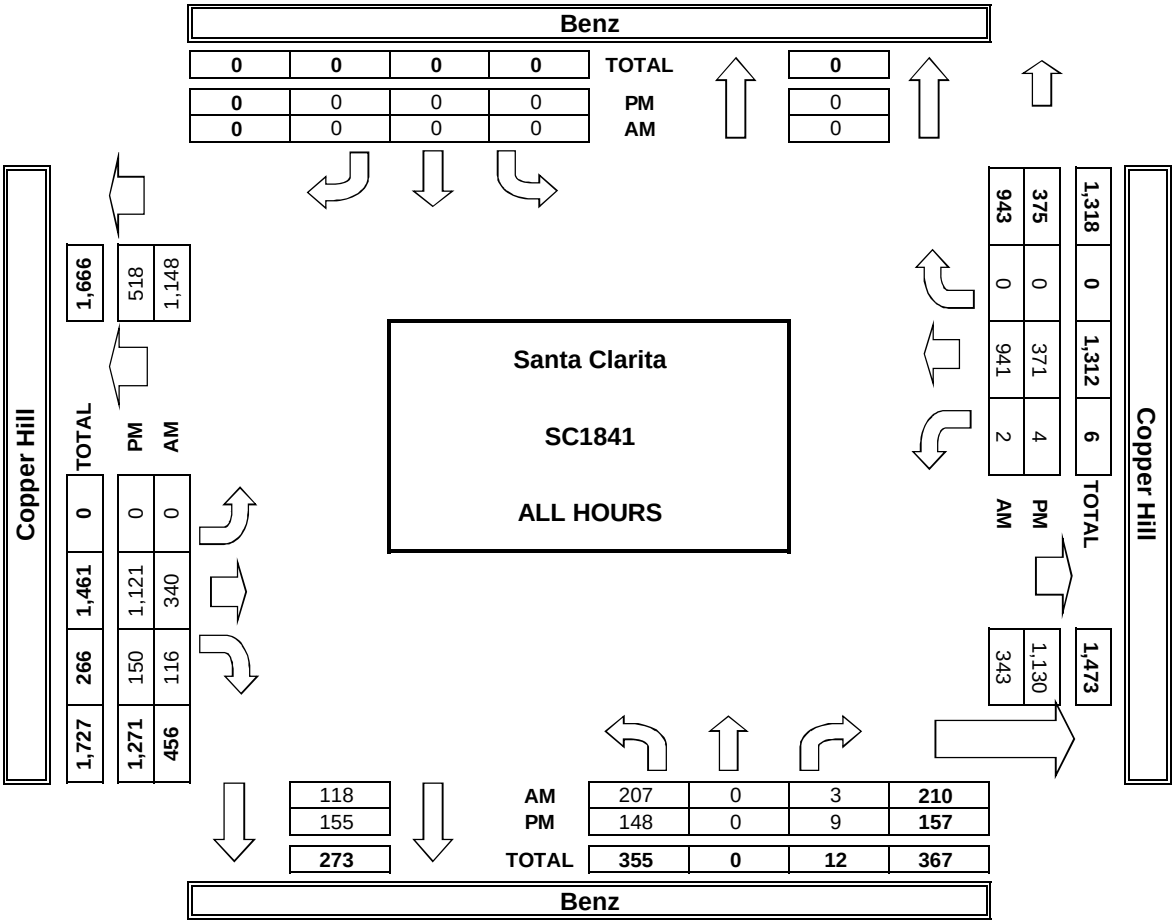
		NORTHBOUND Benz			SOUTHBOUND Benz			EASTBOUND Copper Hill			WESTBOUND Copper Hill				U-TURNS				
	LANES:	NL 0	NT X	NR 0	SL X	ST X	SR X	EL X	ET 1	ER 1	WL 1	WT 1	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	19	0	0	0	0	0	0	37	7	1	116	0	180	0	0	0	0	0
	7:15 AM	34	0	0	0	0	0	0	36	14	0	149	0	233	0	0	0	0	0
	7:30 AM	39	0	0	0	0	0	0	44	13	1	186	0	283	0	0	0	0	0
	7:45 AM	32	0	0	0	0	0	0	55	22	0	145	0	254	0	0	0	0	0
	8:00 AM	33	0	1	0	0	0	0	53	14	0	96	0	197	0	0	0	0	0
	8:15 AM	19	0	0	0	0	0	0	41	23	0	80	0	163	0	0	0	0	0
	8:30 AM	17	0	1	0	0	0	0	39	9	0	90	0	156	0	0	0	0	0
	8:45 AM	14	0	1	0	0	0	0	35	14	0	79	0	143	0	0	0	0	0
	VOLUMES	207	0	3	0	0	0	0	340	116	2	941	0	1,609	0	0	0	0	0
	APPROACH %	99%	0%	1%	0%	0%	0%	0%	75%	25%	0%	100%	0%						
	APP/DEPART	210	/	0	0	/	118	456	/	343	943	/	1,148	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	138	0	1	0	0	0	0	188	63	1	576	0	967					
	APPROACH %	99%	0%	1%	0%	0%	0%	0%	75%	25%	0%	100%	0%						
	PEAK HR FACTOR		0.891			0.000			0.815			0.771		0.854					
	APP/DEPART	139	/	0	0	/	64	251	/	189	577	/	714	0					
PM	4:00 PM	19	0	1	0	0	0	0	114	14	1	45	0	194	0	0	0	0	0
	4:15 PM	16	0	0	0	0	0	0	150	14	0	58	0	238	0	0	0	0	0
	4:30 PM	17	0	3	0	0	0	0	151	18	0	51	0	240	0	0	0	0	0
	4:45 PM	19	0	0	0	0	0	0	179	26	0	39	0	263	0	0	0	0	0
	5:00 PM	19	0	0	0	0	0	0	141	24	1	62	0	247	0	0	0	0	0
	5:15 PM	13	0	2	0	0	0	0	138	20	1	41	0	215	0	0	0	0	0
	5:30 PM	27	0	2	0	0	0	0	122	11	1	37	0	200	0	0	0	0	0
	5:45 PM	18	0	1	0	0	0	0	126	23	0	38	0	206	1	0	0	0	1
	VOLUMES	148	0	9	0	0	0	0	1,121	150	4	371	0	1,803	1	0	0	0	1
	APPROACH %	94%	0%	6%	0%	0%	0%	0%	88%	12%	1%	99%	0%						
	APP/DEPART	157	/	0	0	/	155	1,271	/	1,130	375	/	518	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	71	0	3	0	0	0	0	621	82	1	210	0	988					
	APPROACH %	96%	0%	4%	0%	0%	0%	0%	88%	12%	0%	100%	0%						
	PEAK HR FACTOR		0.925			0.000			0.857			0.837		0.939					
	APP/DEPART	74	/	0	0	/	83	703	/	624	211	/	281	0					

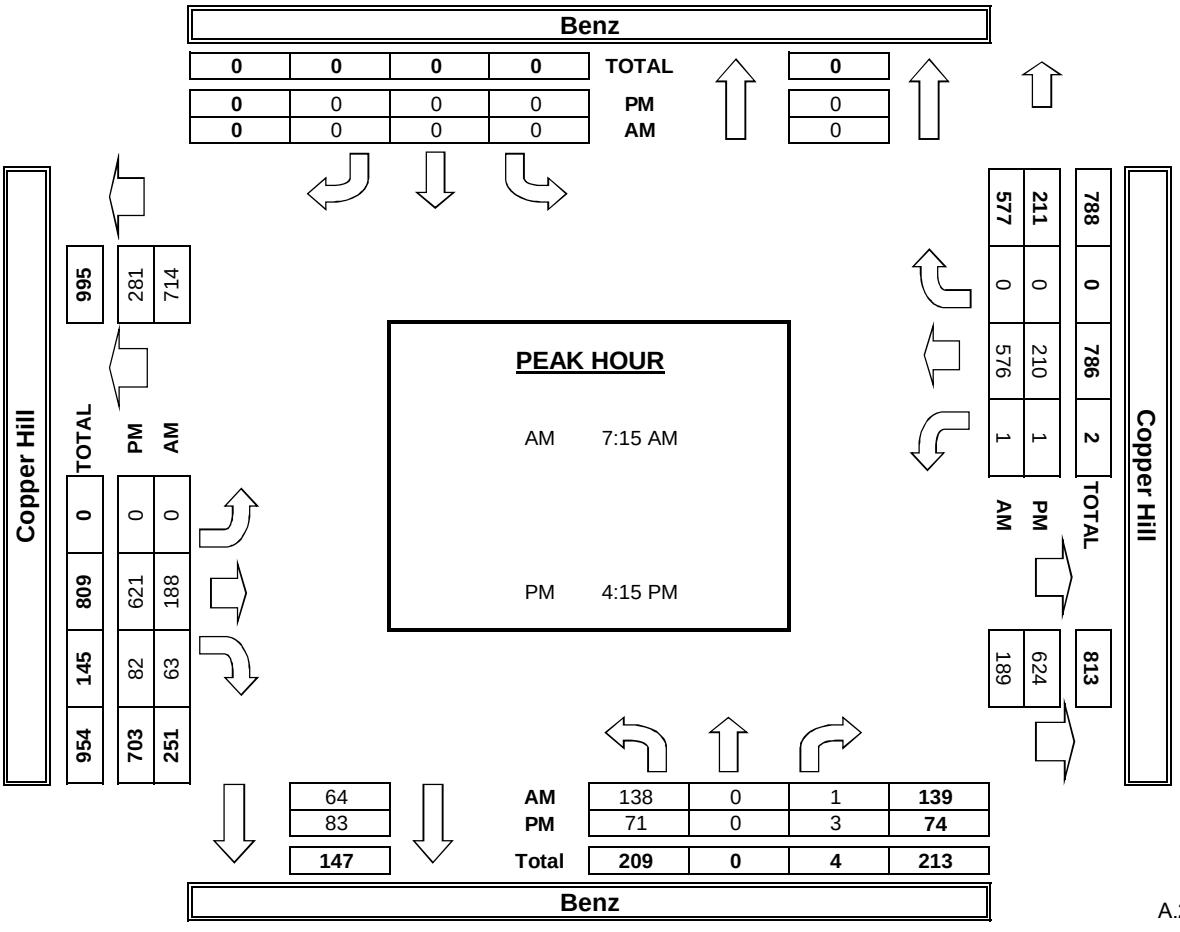


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	TOTAL	0	1	1	2	4	0	1	1	2	4	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	1	0	1					
PM	4:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	4:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1
	PM BEGIN PEAK HR	4:15 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Benz
EAST & WEST: Alaminos

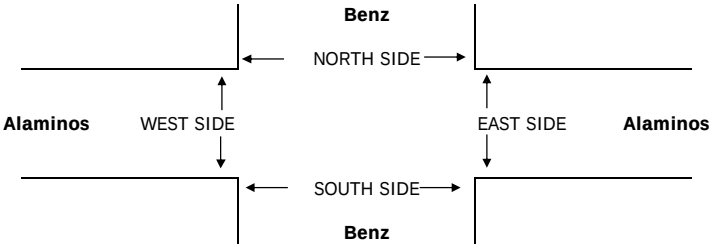
PROJECT #: SC1841
LOCATION #: 8
CONTROL: STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

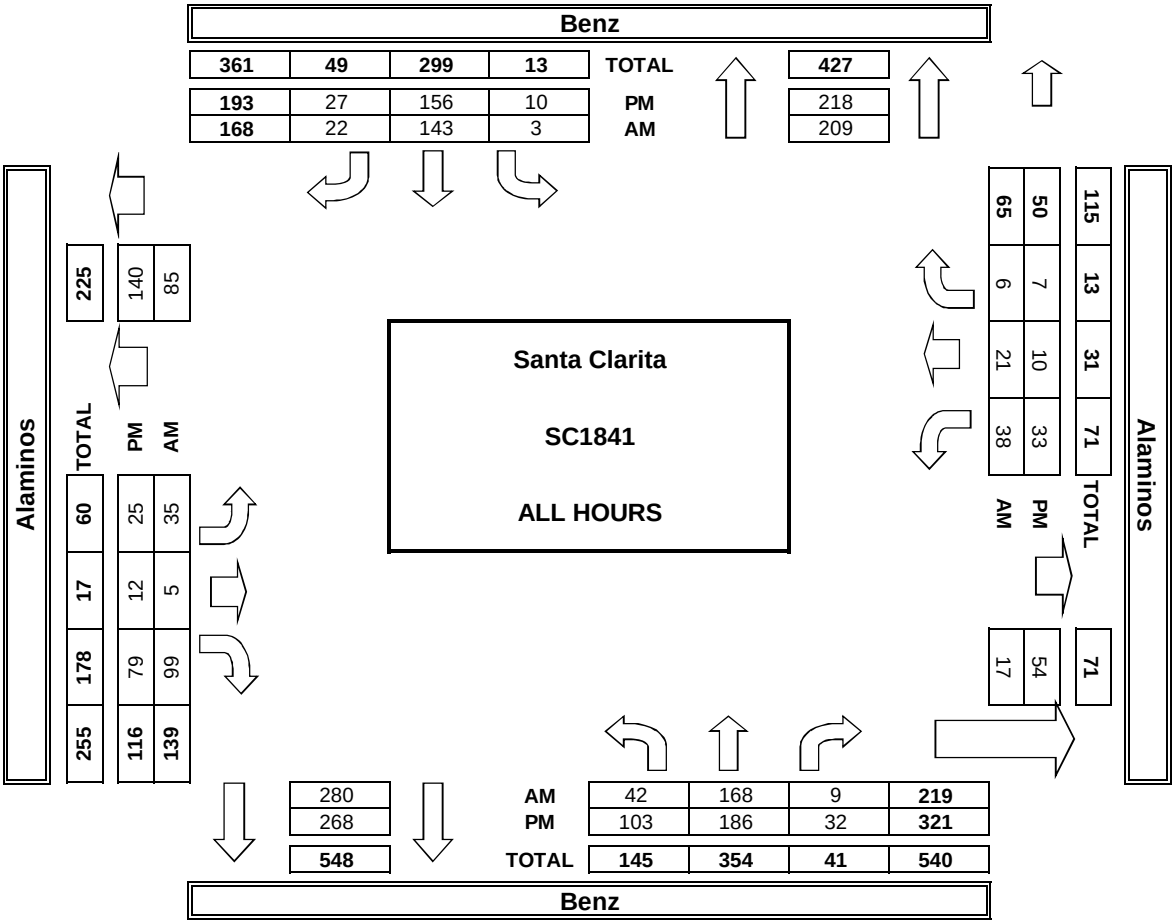
		NORTHBOUND Benz			SOUTHBOUND Benz			EASTBOUND Alaminos			WESTBOUND Alaminos				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	2	18	1	0	11	2	2	0	12	5	3	0	56	0	0	0	0	0
	7:15 AM	5	27	1	0	27	1	3	0	13	11	1	1	90	0	0	0	0	0
	7:30 AM	4	34	1	0	20	3	6	2	15	4	7	1	97	0	0	0	0	0
	7:45 AM	10	33	3	1	19	4	1	0	15	1	8	1	96	0	0	0	0	0
	8:00 AM	4	17	1	0	18	3	11	1	15	5	2	1	78	0	0	0	0	0
	8:15 AM	9	15	1	0	22	5	7	2	9	3	0	2	75	0	0	0	0	0
	8:30 AM	6	13	1	1	9	2	1	0	13	1	0	0	47	0	0	0	0	0
	8:45 AM	2	11	0	1	17	2	4	0	7	8	0	0	52	0	0	0	0	0
	VOLUMES	42	168	9	3	143	22	35	5	99	38	21	6	591	0	0	0	0	0
	APPROACH %	19%	77%	4%	2%	85%	13%	25%	4%	71%	58%	32%	9%						
	APP/DEPART	219	/	209	168	/	280	139	/	17	65	/	85	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	23	111	6	1	84	11	21	3	58	21	18	4	361					
	APPROACH %	16%	79%	4%	1%	88%	11%	26%	4%	71%	49%	42%	9%						
	PEAK HR FACTOR		0.761			0.857			0.759			0.827		0.930					
	APP/DEPART	140	/	136	96	/	163	82	/	10	43	/	52	0					
PM	4:00 PM	21	20	3	2	11	3	2	1	6	1	1	0	71	0	0	0	0	0
	4:15 PM	10	21	3	2	16	2	3	1	12	3	2	1	76	0	0	0	0	0
	4:30 PM	14	24	3	1	22	3	2	3	13	4	1	0	90	0	0	0	0	0
	4:45 PM	11	18	6	0	26	6	2	1	14	3	0	2	89	0	0	0	0	0
	5:00 PM	7	28	6	1	20	4	2	1	13	5	0	1	88	0	0	0	0	0
	5:15 PM	11	25	3	0	17	4	2	1	4	4	2	2	75	0	0	0	0	0
	5:30 PM	19	26	2	1	19	3	5	3	8	6	2	1	95	0	0	0	0	0
	5:45 PM	10	24	6	3	25	2	7	1	9	7	2	0	96	0	0	0	0	0
	VOLUMES	103	186	32	10	156	27	25	12	79	33	10	7	680	0	0	0	0	0
	APPROACH %	32%	58%	10%	5%	81%	14%	22%	10%	68%	66%	20%	14%						
	APP/DEPART	321	/	218	193	/	268	116	/	54	50	/	140	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	47	103	17	5	81	13	16	6	34	22	6	4	354					
	APPROACH %	28%	62%	10%	5%	82%	13%	29%	11%	61%	69%	19%	13%						
	PEAK HR FACTOR		0.888			0.825			0.824			0.889		0.922					
	APP/DEPART	167	/	123	99	/	137	56	/	28	32	/	66	0					

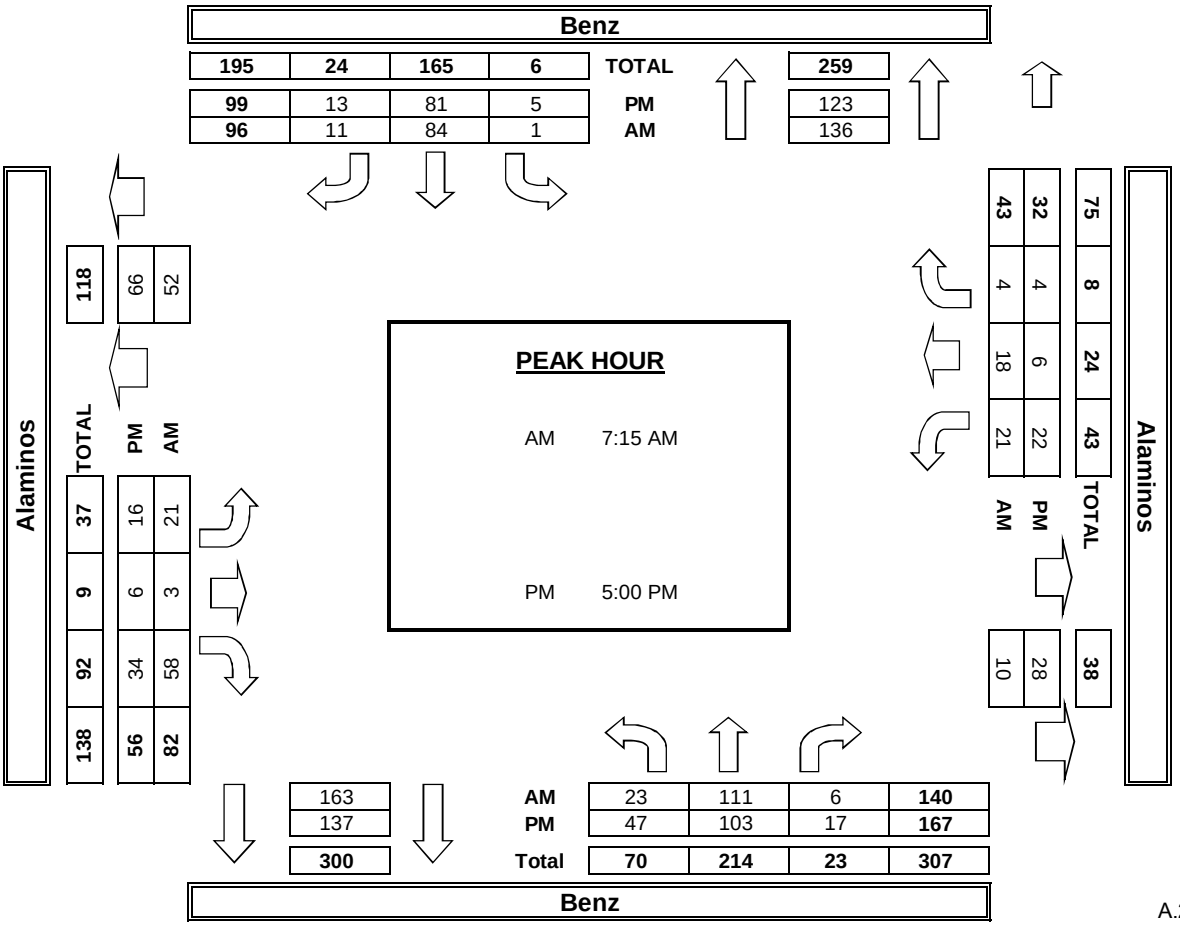


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	2	0	0	1	3	2	0	0	1	3	0	0	0	0	0
	7:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:30 AM	1	1	1	1	4	1	1	1	1	4	0	0	0	0	0
	7:45 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	8:00 AM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	8:15 AM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	8:30 AM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	5	3	1	6	15	5	3	1	6	15	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					2	3	1	2	8					
PM	4:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	5:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	3	0	0	0	3	3	0	0	0	3	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4	2	0	0	6	3	2	0	0	5	1	0	0	0	1
	PM BEGIN PEAK HR	5:00 PM					3	0	0	0	3					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

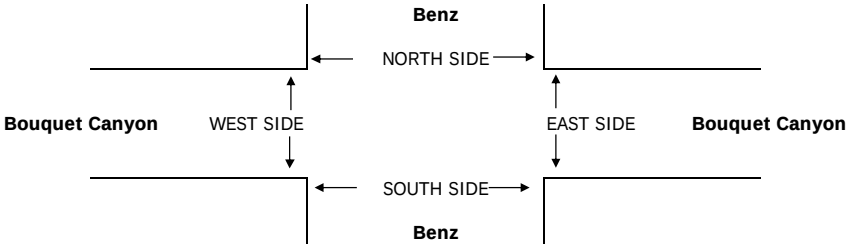
LOCATION: Santa Clarita
NORTH & SOUTH: Benz
EAST & WEST: Bouquet Canyon
PROJECT #: SC1841
LOCATION #: 9
CONTROL: STOP S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

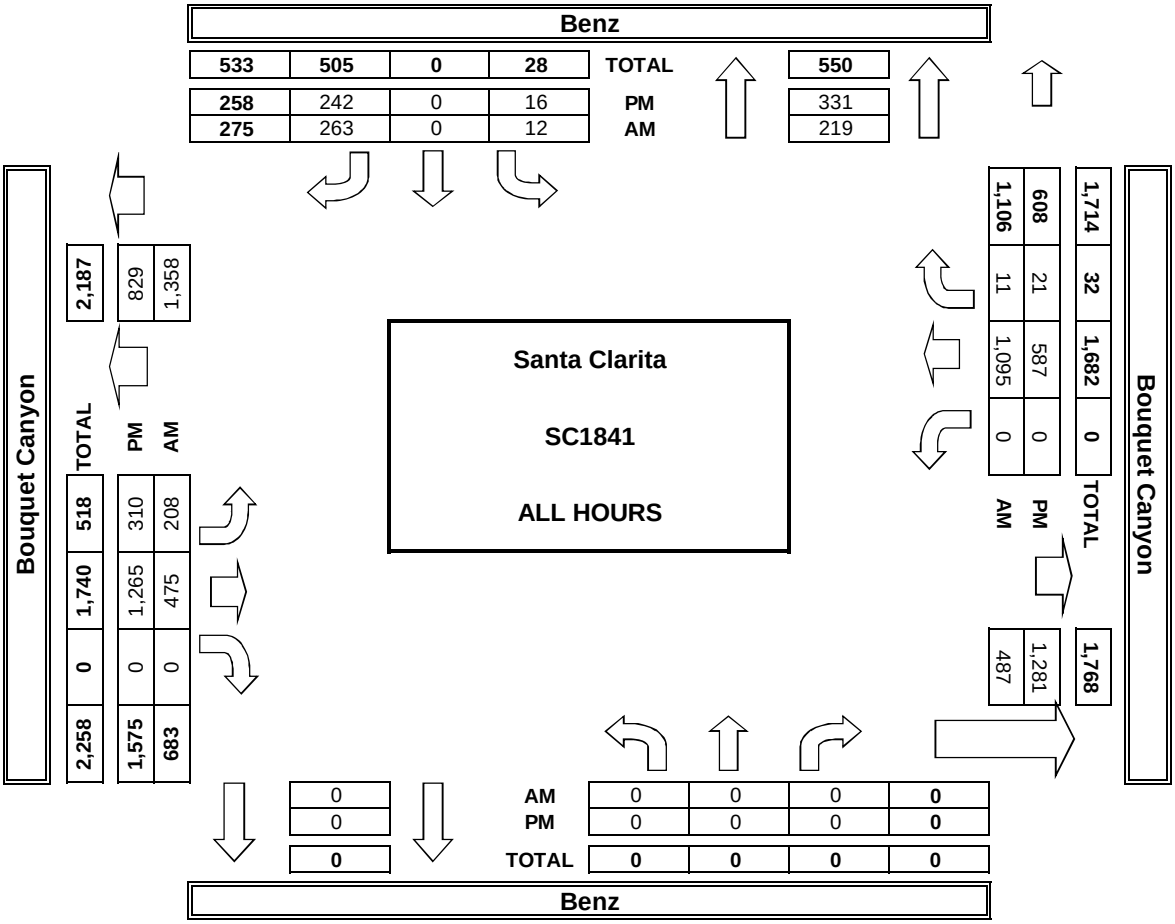
		NORTHBOUND Benz			SOUTHBOUND Benz			EASTBOUND Bouquet Canyon			WESTBOUND Bouquet Canyon				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	1	0	22	14	52	0	0	143	1	233	0	0	0	0	0
	7:15 AM	0	0	0	2	0	35	28	33	0	0	175	3	276	0	0	0	0	0
	7:30 AM	0	0	0	1	0	48	39	55	0	0	165	0	308	0	0	0	0	0
	7:45 AM	0	0	0	1	0	35	40	68	0	0	169	2	315	0	0	0	0	0
	8:00 AM	0	0	0	2	0	38	32	75	0	0	129	0	276	0	0	0	0	0
	8:15 AM	0	0	0	4	0	30	20	71	0	0	109	3	237	0	0	0	0	0
	8:30 AM	0	0	0	1	0	26	20	57	0	0	102	1	207	0	0	0	0	0
	8:45 AM	0	0	0	0	0	29	15	64	0	0	103	1	212	0	0	0	0	0
	VOLUMES	0	0	0	12	0	263	208	475	0	0	1,095	11	2,064	0	0	0	0	0
	APPROACH %	0%	0%	0%	4%	0%	96%	30%	70%	0%	0%	99%	1%						
	APP/DEPART	0	/	219	275	/	0	683	/	487	1,106	/	1,358	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	6	0	156	139	231	0	0	638	5	1,175					
	APPROACH %	0%	0%	0%	4%	0%	96%	38%	62%	0%	0%	99%	1%						
	PEAK HR FACTOR		0.000			0.827			0.856			0.903		0.933					
	APP/DEPART	0	/	144	162	/	0	370	/	237	643	/	794	0					
PM	4:00 PM	0	0	0	2	0	24	45	149	0	0	71	3	294	0	0	0	0	0
	4:15 PM	0	0	0	2	0	25	36	156	0	0	54	2	275	0	0	0	0	0
	4:30 PM	0	0	0	4	0	23	37	146	0	0	75	3	288	0	0	0	0	0
	4:45 PM	0	0	0	3	0	39	37	166	0	0	75	2	322	0	0	0	0	0
	5:00 PM	0	0	0	2	0	41	31	158	0	0	67	3	302	0	0	0	0	0
	5:15 PM	0	0	0	0	0	29	43	187	0	0	82	2	343	0	0	0	0	0
	5:30 PM	0	0	0	0	0	24	42	174	0	0	82	3	325	0	0	0	0	0
	5:45 PM	0	0	0	3	0	37	39	129	0	0	81	3	292	0	0	0	0	0
	VOLUMES	0	0	0	16	0	242	310	1,265	0	0	587	21	2,441	0	0	0	0	0
	APPROACH %	0%	0%	0%	6%	0%	94%	20%	80%	0%	0%	97%	3%						
	APP/DEPART	0	/	331	258	/	0	1,575	/	1,281	608	/	829	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	0	5	0	133	153	685	0	0	306	10	1,292					
	APPROACH %	0%	0%	0%	4%	0%	96%	18%	82%	0%	0%	97%	3%						
	PEAK HR FACTOR		0.000			0.802			0.911			0.929		0.942					
	APP/DEPART	0	/	163	138	/	0	838	/	690	316	/	439	0					

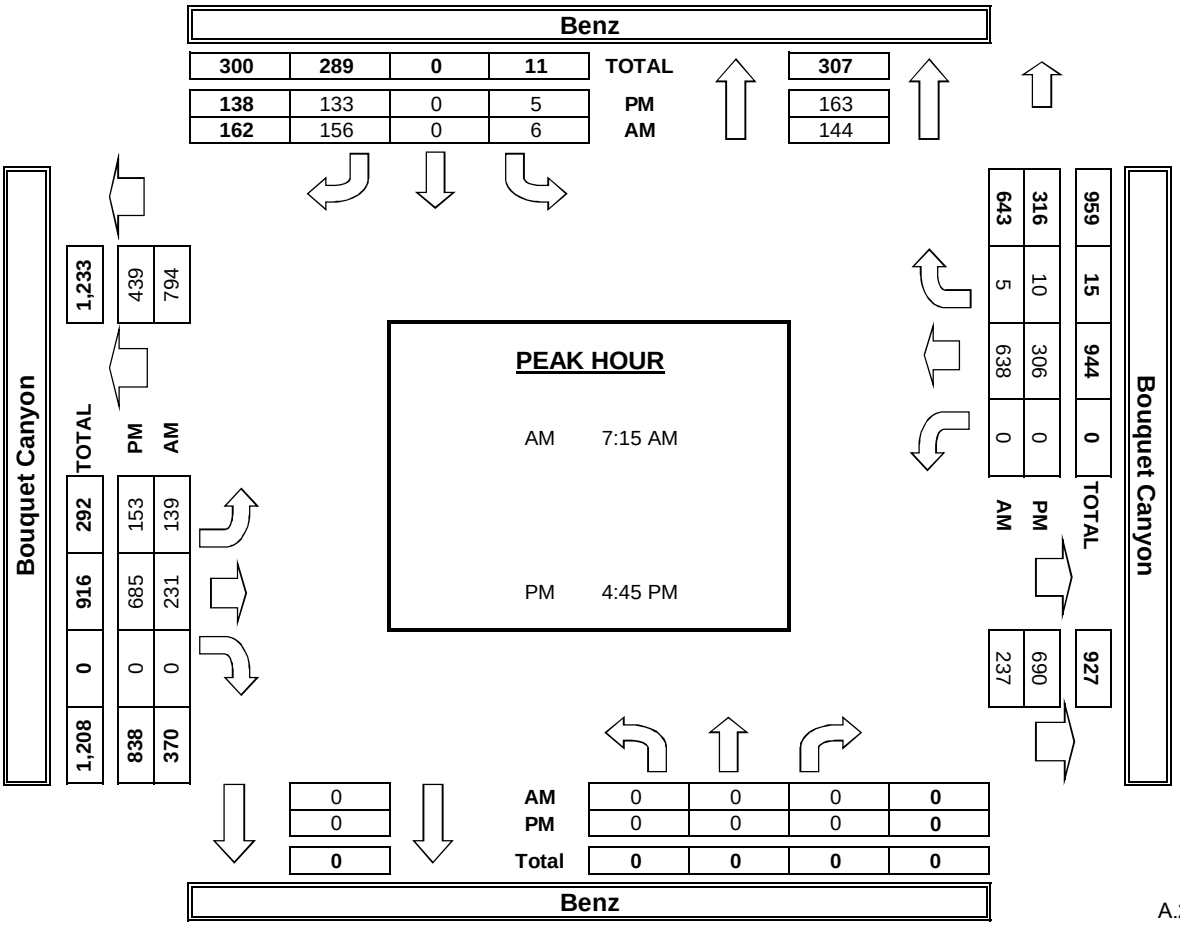


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4	0	0	0	4	3	0	0	0	3	1	0	0	0	1
	AM BEGIN PEAK HR	7:15 AM					2	0	0	0	2					
PM	4:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	3	0	0	0	3	2	0	0	0	2	1	0	0	0	1
	PM BEGIN PEAK HR	4:45 PM					1	0	0	0	1					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Plum Canyon
EAST & WEST: Bouquet Canyon

PROJECT #: SC1841
LOCATION #: 10
CONTROL: SIGNAL

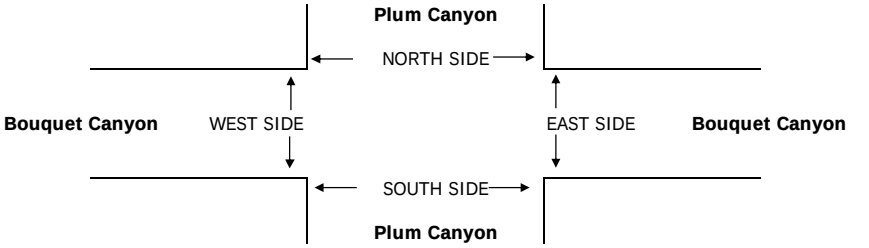
NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

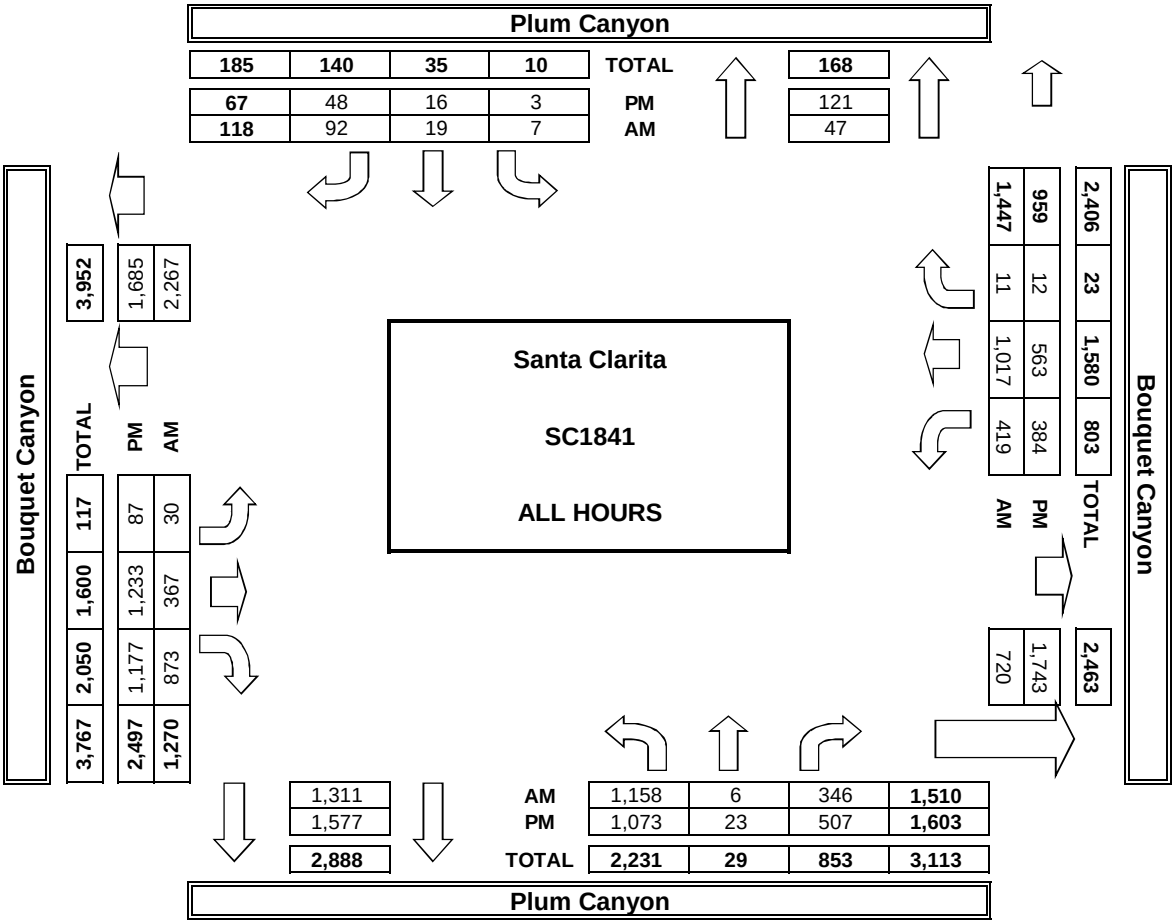
		NORTHBOUND Plum Canyon			SOUTHBOUND Plum Canyon			EASTBOUND Bouquet Canyon			WESTBOUND Bouquet Canyon				U-TURNS				
	LANES:	NL 1.5	NT 0.5	NR 1	SL 0	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	90	1	39	1	0	20	3	28	65	49	144	0	440	0	0	0	0	0
	7:15 AM	113	1	43	1	4	7	1	21	102	64	150	2	509	0	0	0	0	0
	7:30 AM	150	1	61	0	2	16	1	44	100	59	169	0	603	0	0	0	0	0
	7:45 AM	163	1	65	2	2	13	8	53	120	55	156	1	639	0	0	0	0	0
	8:00 AM	179	2	42	0	3	16	3	60	132	65	119	2	623	0	0	0	0	0
	8:15 AM	184	0	35	2	4	7	7	52	117	38	103	2	551	0	0	0	0	0
	8:30 AM	168	0	30	1	2	7	2	52	115	43	85	1	506	0	0	0	0	0
	8:45 AM	111	0	31	0	2	6	5	57	122	46	91	3	474	0	0	0	0	0
	VOLUMES	1,158	6	346	7	19	92	30	367	873	419	1,017	11	4,345	0	0	0	0	0
	APPROACH %	77%	0%	23%	6%	16%	78%	2%	29%	69%	29%	70%	1%						
	APP/DEPART	1,510	/	47	118	/	1,311	1,270	/	720	1,447	/	2,267	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	676	4	203	4	11	52	19	209	469	217	547	5	2,416					
	APPROACH %	77%	0%	23%	6%	16%	78%	3%	30%	67%	28%	71%	1%						
	PEAK HR FACTOR		0.964			0.882			0.894			0.843		0.945					
	APP/DEPART	883	/	28	67	/	697	697	/	416	769	/	1,275	0					
PM	4:00 PM	103	4	64	0	0	5	9	150	130	43	64	0	572	0	0	0	0	0
	4:15 PM	134	1	52	0	1	3	9	166	136	46	54	2	604	0	0	0	0	0
	4:30 PM	127	0	53	0	1	6	11	138	162	44	69	1	612	0	0	0	0	0
	4:45 PM	141	4	70	0	2	8	11	151	133	49	71	1	641	0	0	0	0	0
	5:00 PM	135	0	69	2	1	5	12	163	165	50	70	1	673	0	0	0	0	0
	5:15 PM	135	2	73	0	3	6	15	157	156	48	76	5	676	0	0	0	0	0
	5:30 PM	149	7	66	1	2	9	7	161	151	41	75	1	670	0	0	1	0	1
	5:45 PM	149	5	60	0	6	6	13	147	144	63	84	1	678	0	0	0	0	0
	VOLUMES	1,073	23	507	3	16	48	87	1,233	1,177	384	563	12	5,126	0	0	1	0	1
	APPROACH %	67%	1%	32%	4%	24%	72%	3%	49%	47%	40%	59%	1%						
	APP/DEPART	1,603	/	121	67	/	1,577	2,497	/	1,743	959	/	1,685	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	568	14	268	3	12	26	47	628	616	202	305	8	2,697					
	APPROACH %	67%	2%	32%	7%	29%	63%	4%	49%	48%	39%	59%	2%						
	PEAK HR FACTOR		0.957			0.854			0.949			0.870		0.994					
	APP/DEPART	850	/	68	41	/	830	1,291	/	899	515	/	900	0					

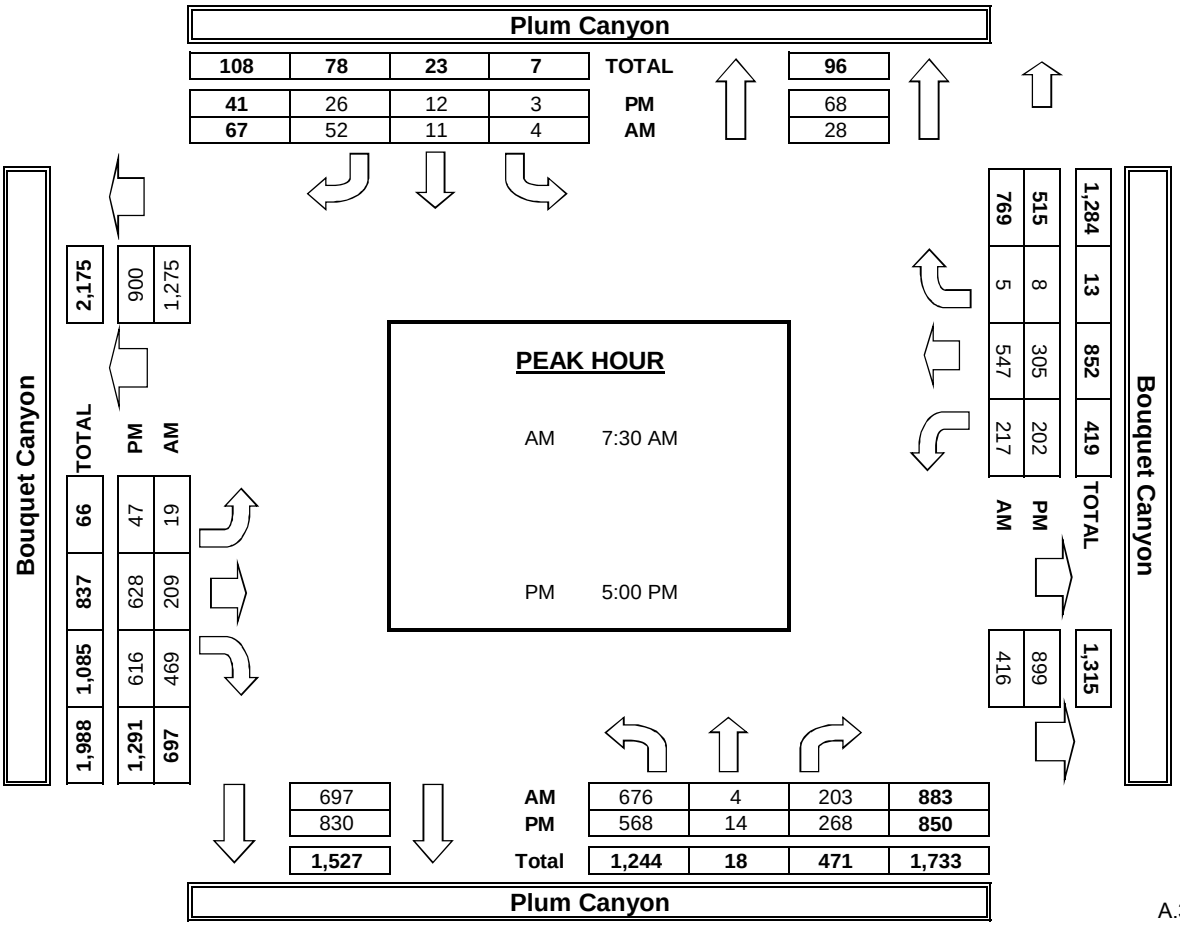


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3	2	3	0	8	2	2	2	0	6	1	0	1	0	2
	7:15 AM	2	1	3	0	6	1	1	2	0	4	1	0	1	0	2
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:15 AM	3	0	1	0	4	3	0	1	0	4	0	0	0	0	0
	8:30 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	8:45 AM	1	0	1	0	2	1	0	1	0	2	0	0	0	0	0
	TOTAL	12	3	8	0	23	9	3	6	0	18	3	0	2	0	5
	AM BEGIN PEAK HR	7:30 AM					5	0	1	0	6					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	1	0	1	0	2	0	0	1	0	1	1	0	0	0	1
	4:45 PM	0	2	1	0	3	0	2	1	0	3	0	0	0	0	0
	5:00 PM	0	1	2	0	3	0	1	2	0	3	0	0	0	0	0
	5:15 PM	0	0	4	0	4	0	0	4	0	4	0	0	0	0	0
	5:30 PM	3	0	4	0	7	3	0	3	0	6	0	0	1	0	1
	5:45 PM	1	1	3	0	5	0	0	3	0	3	1	1	0	0	2
	TOTAL	5	4	15	0	24	3	3	14	0	20	2	1	1	0	4
	PM BEGIN PEAK HR	5:00 PM					3	1	12	0	16					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Haskell Canyon
EAST & WEST: Copper Hill

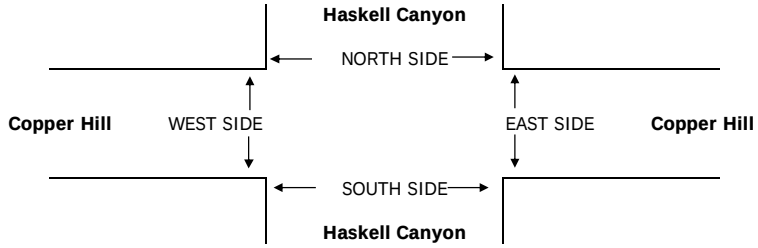
PROJECT #: SC1841
LOCATION #: 11
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

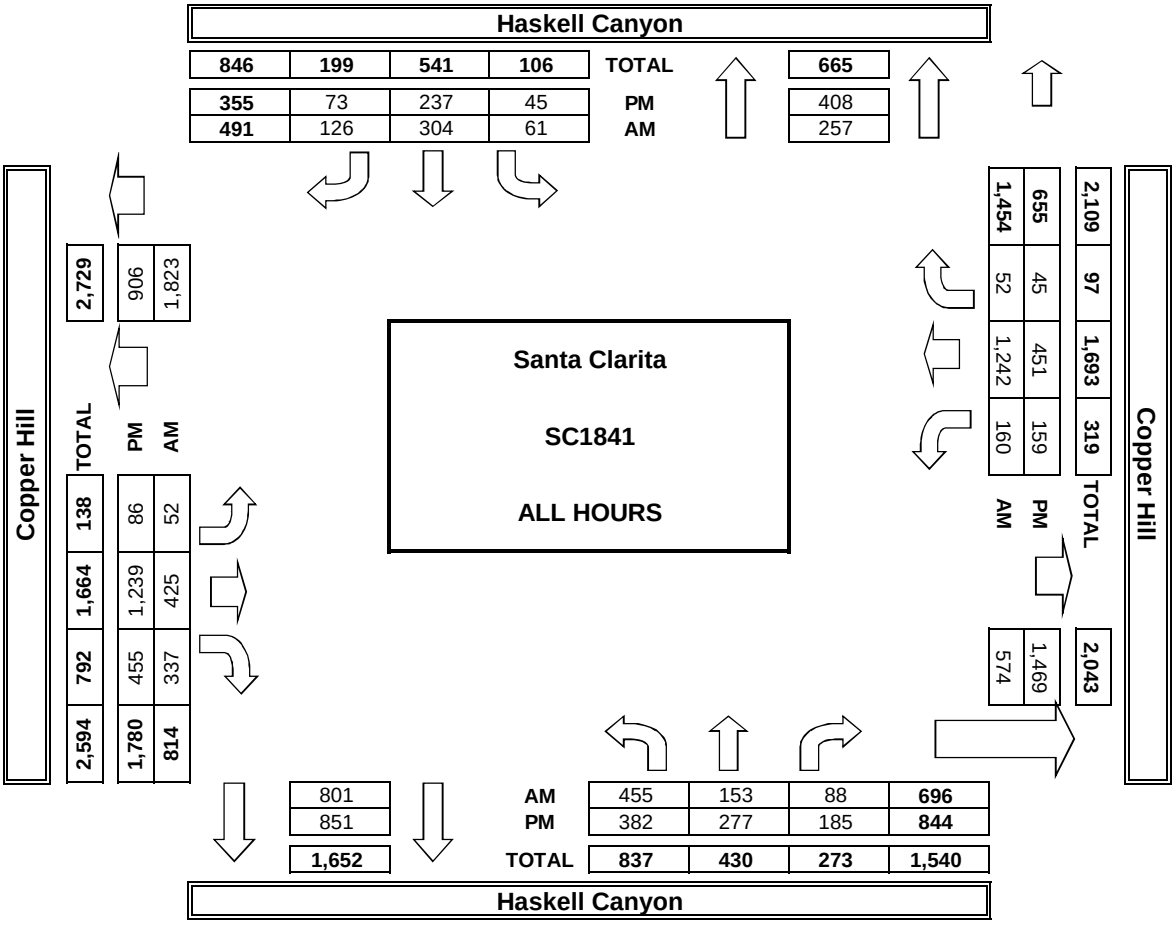
		NORTHBOUND Haskell Canyon			SOUTHBOUND Haskell Canyon			EASTBOUND Copper Hill			WESTBOUND Copper Hill				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	55	8	6	6	26	10	2	36	23	15	132	3	322	0	0	0	0	0
	7:15 AM	50	8	4	5	49	13	2	49	42	26	208	4	460	0	0	0	0	0
	7:30 AM	45	16	14	5	41	20	9	45	46	27	244	8	520	0	0	0	0	0
	7:45 AM	65	41	9	13	41	16	6	77	52	13	191	13	537	0	0	0	0	0
	8:00 AM	72	27	18	10	37	22	12	54	41	20	132	9	454	0	0	0	0	0
	8:15 AM	67	17	7	11	34	13	4	62	43	18	124	7	407	0	0	0	0	0
	8:30 AM	52	14	17	5	44	14	9	53	51	22	112	3	396	0	0	0	0	0
	8:45 AM	49	22	13	6	32	18	8	49	39	19	99	5	359	0	0	0	0	0
	VOLUMES	455	153	88	61	304	126	52	425	337	160	1,242	52	3,455	0	0	0	0	0
	APPROACH %	65%	22%	13%	12%	62%	26%	6%	52%	41%	11%	85%	4%						
	APP/DEPART	696	/	257	491	/	801	814	/	574	1,454	/	1,823	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	232	92	45	33	168	71	29	225	181	86	775	34	1,971					
	APPROACH %	63%	25%	12%	12%	62%	26%	7%	52%	42%	10%	87%	4%						
	PEAK HR FACTOR		0.788			0.971			0.806			0.802		0.918					
	APP/DEPART	369	/	155	272	/	435	435	/	303	895	/	1,078	0					
PM	4:00 PM	47	31	18	3	27	7	9	118	51	20	47	11	389	0	0	0	0	0
	4:15 PM	56	39	29	1	24	8	10	156	50	20	68	3	464	0	0	0	0	0
	4:30 PM	54	31	20	13	38	8	12	179	49	13	66	6	489	0	0	0	0	0
	4:45 PM	49	38	18	12	25	8	14	192	57	26	49	7	495	0	0	0	0	0
	5:00 PM	49	34	24	3	31	14	8	163	70	22	69	3	490	0	0	0	0	0
	5:15 PM	50	33	28	6	31	7	11	167	63	19	55	5	475	0	0	0	0	0
	5:30 PM	32	39	24	3	31	13	10	126	67	16	56	6	423	0	0	0	0	0
	5:45 PM	45	32	24	4	30	8	12	138	48	23	41	4	409	0	0	0	0	0
	VOLUMES	382	277	185	45	237	73	86	1,239	455	159	451	45	3,634	0	0	0	0	0
	APPROACH %	45%	33%	22%	13%	67%	21%	5%	70%	26%	24%	69%	7%						
	APP/DEPART	844	/	408	355	/	851	1,780	/	1,469	655	/	906	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	202	136	90	34	125	37	45	701	239	80	239	21	1,949					
	APPROACH %	47%	32%	21%	17%	64%	19%	5%	71%	24%	24%	70%	6%						
	PEAK HR FACTOR		0.964			0.831			0.936			0.904		0.984					
	APP/DEPART	428	/	202	196	/	444	985	/	825	340	/	478	0					

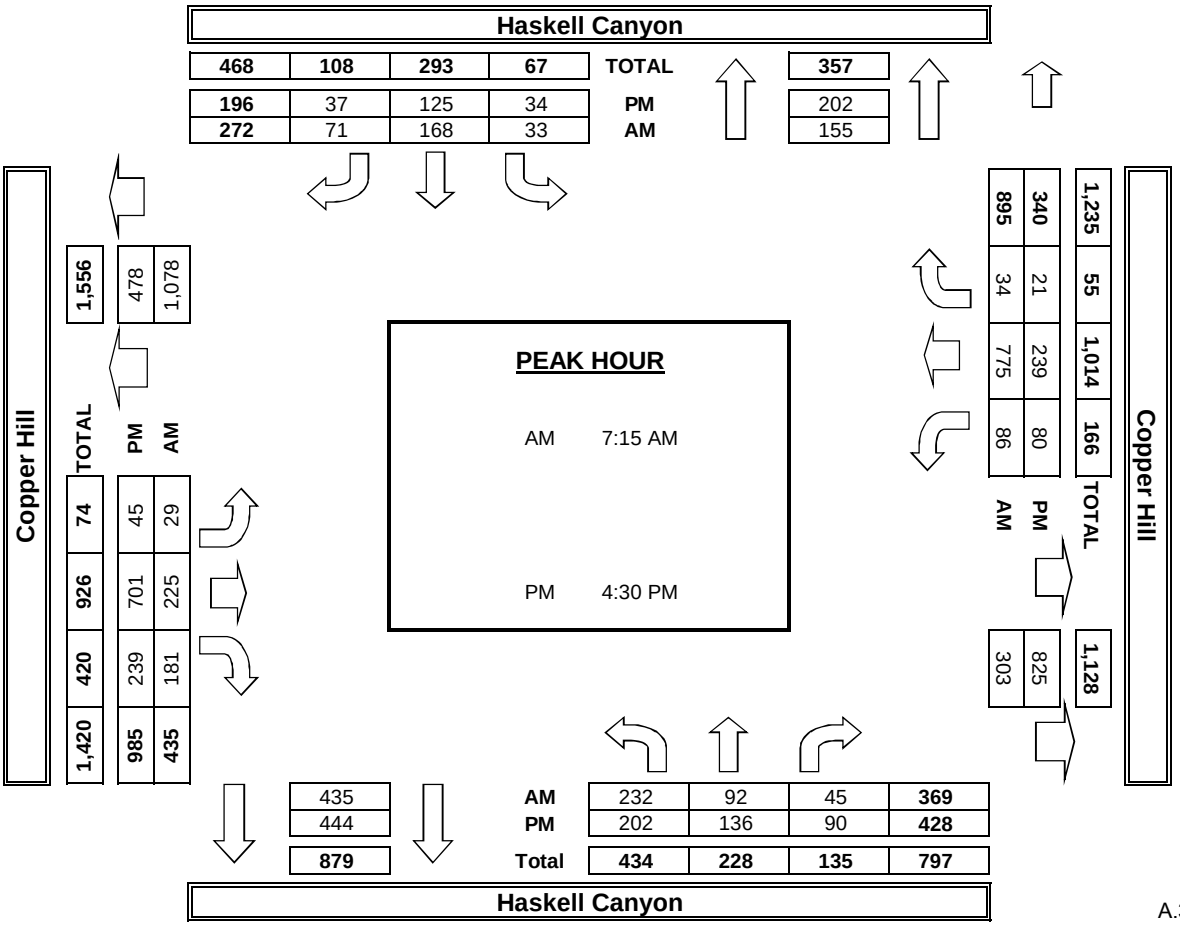


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	1	0	1	2	0	1	0	1	2	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	5	0	6	1	0	5	0	6	0	0	0	0	0
	8:15 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	3	0	2	1	6	3	0	2	1	6	0	0	0	0	0
	TOTAL	5	1	7	2	15	4	1	7	2	14	1	0	0	0	1
	AM BEGIN PEAK HR	7:15 AM					1	1	5	1	8					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	TOTAL	1	2	0	2	5	1	2	0	1	4	0	0	0	1	1
	PM BEGIN PEAK HR	4:30 PM					1	2	0	1	4					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Seco Canyon
EAST & WEST: Copper Hill

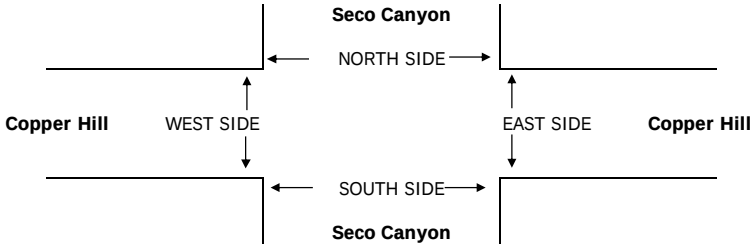
PROJECT #: SC1841
LOCATION #: 12
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

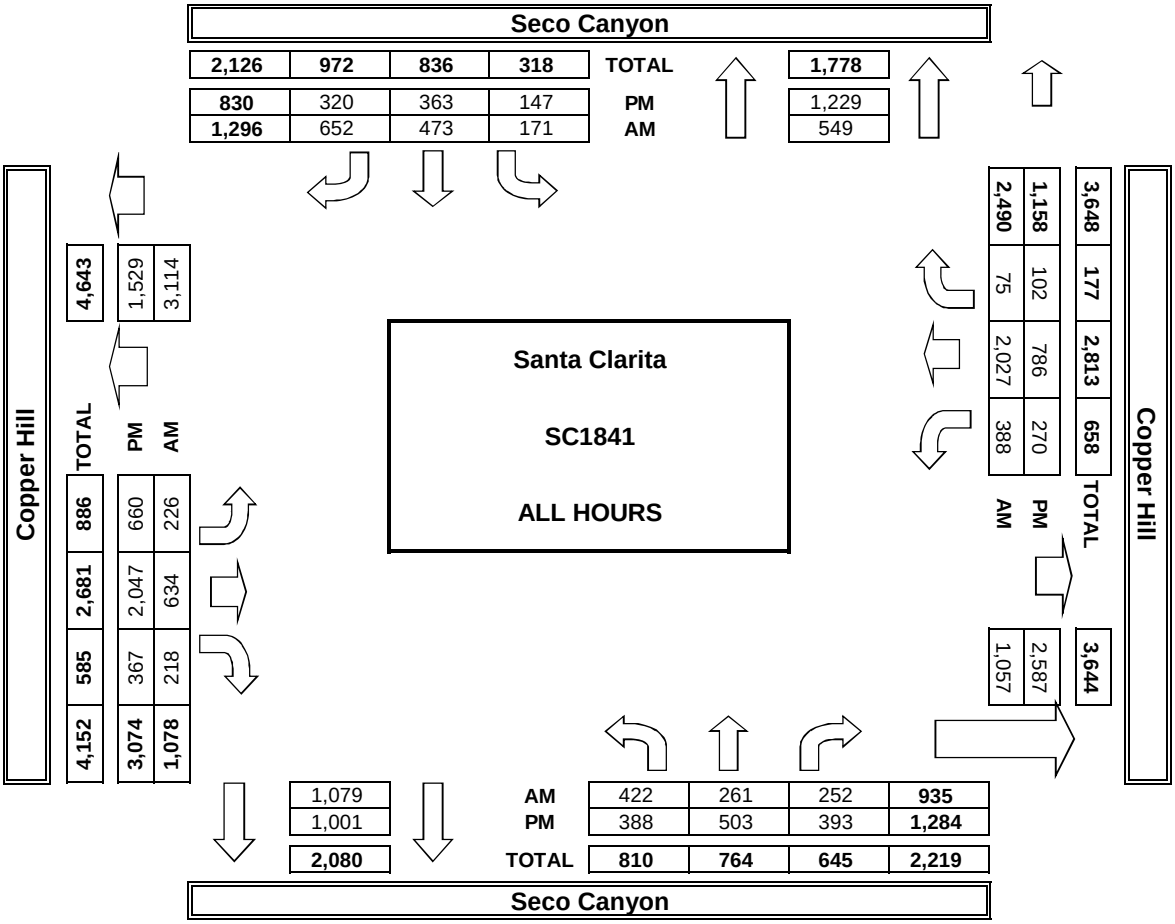
		NORTHBOUND Seco Canyon			SOUTHBOUND Seco Canyon			EASTBOUND Copper Hill			WESTBOUND Copper Hill				U-TURNS				
	LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 2	ET 2	ER 1	WL 2	WT 2.5	WR 0.5	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	36	16	22	17	63	78	9	53	16	22	212	7	551	0	0	2	0	2
	7:15 AM	48	26	15	16	56	79	23	79	24	33	317	8	724	0	0	2	0	2
	7:30 AM	48	22	21	18	63	87	33	85	35	34	346	5	797	0	0	2	0	2
	7:45 AM	66	37	28	36	56	83	51	120	38	51	301	11	878	0	0	2	0	2
	8:00 AM	61	41	26	34	61	93	35	79	35	57	239	18	779	0	0	2	0	2
	8:15 AM	54	37	34	23	67	83	28	76	26	87	223	15	753	0	0	2	0	2
	8:30 AM	46	38	64	20	68	73	25	70	18	64	172	4	662	0	0	0	0	0
	8:45 AM	63	44	42	7	39	76	22	72	26	40	217	7	655	0	0	1	0	1
	VOLUMES	422	261	252	171	473	652	226	634	218	388	2,027	75	5,799	0	0	13	0	13
	APPROACH %	45%	28%	27%	13%	36%	50%	21%	59%	20%	16%	81%	3%						
	APP/DEPART	935	/	549	1,296	/	1,079	1,078	/	1,057	2,490	/	3,114	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	229	137	109	111	247	346	147	360	134	229	1,109	49	3,207					
	APPROACH %	48%	29%	23%	16%	35%	49%	23%	56%	21%	17%	80%	4%						
	PEAK HR FACTOR		0.906			0.936			0.767			0.901		0.913					
	APP/DEPART	475	/	325	704	/	610	641	/	580	1,387	/	1,692	0					
PM	4:00 PM	38	56	40	13	33	27	71	192	36	25	79	13	623	0	0	7	0	7
	4:15 PM	50	61	41	18	48	33	71	243	44	35	90	11	745	0	0	5	0	5
	4:30 PM	51	55	48	20	37	53	74	277	43	38	99	10	805	0	0	4	0	4
	4:45 PM	51	62	46	14	42	53	76	299	44	33	119	17	856	0	0	6	0	6
	5:00 PM	32	60	45	16	56	37	82	269	48	41	110	12	808	0	0	5	0	5
	5:15 PM	65	78	59	18	47	39	88	268	55	35	107	22	881	0	0	4	0	4
	5:30 PM	38	66	61	18	40	37	120	263	47	31	85	7	813	0	0	2	0	2
	5:45 PM	63	65	53	30	60	41	78	236	50	32	97	10	815	1	0	3	0	4
	VOLUMES	388	503	393	147	363	320	660	2,047	367	270	786	102	6,346	1	0	36	0	37
	APPROACH %	30%	39%	31%	18%	44%	39%	21%	67%	12%	23%	68%	9%						
	APP/DEPART	1,284	/	1,229	830	/	1,001	3,074	/	2,587	1,158	/	1,529	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	186	266	211	66	185	166	366	1,099	194	140	421	58	3,358					
	APPROACH %	28%	40%	32%	16%	44%	40%	22%	66%	12%	23%	68%	9%						
	PEAK HR FACTOR		0.821			0.956			0.965			0.916		0.953					
	APP/DEPART	663	/	673	417	/	519	1,659	/	1,376	619	/	790	0					

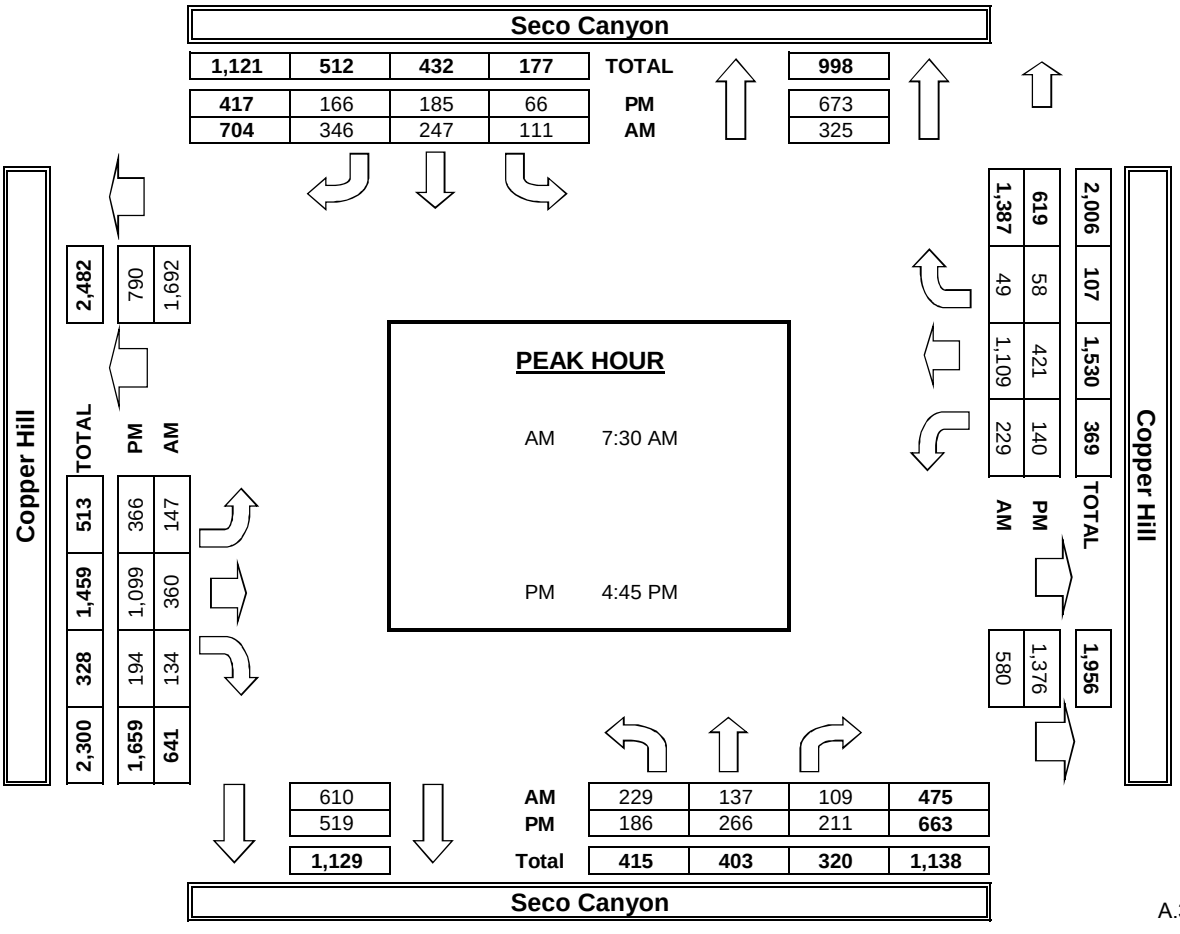


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	2	1	3	0	0	2	0	2	0	0	0	1	1
	7:15 AM	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0
	7:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:45 AM	1	0	1	0	2	0	0	0	0	0	1	0	1	0	2
	8:00 AM	2	0	2	3	7	2	0	1	2	5	0	0	1	1	2
	8:15 AM	2	1	3	2	8	1	0	3	0	4	1	1	0	2	4
	8:30 AM	3	1	3	0	7	3	1	3	0	7	0	0	0	0	0
	8:45 AM	3	2	9	1	15	1	2	9	1	13	2	0	0	0	2
	TOTAL	11	5	23	7	46	7	4	21	3	35	4	1	2	4	11
	AM BEGIN PEAK HR			7:30 AM			3	1	4	2	10					
PM	4:00 PM	3	0	1	0	4	3	0	1	0	4	0	0	0	0	0
	4:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	4:30 PM	0	1	3	4	8	0	0	2	4	6	0	1	1	0	2
	4:45 PM	0	1	1	2	4	0	0	0	2	2	0	1	1	0	2
	5:00 PM	2	1	2	5	10	2	1	2	5	10	0	0	0	0	0
	5:15 PM	0	3	0	2	5	0	3	0	2	5	0	0	0	0	0
	5:30 PM	3	5	2	0	10	3	5	2	0	10	0	0	0	0	0
	5:45 PM	5	1	0	4	10	5	1	0	4	10	0	0	0	0	0
	TOTAL	13	12	10	17	52	13	10	8	17	48	0	2	2	0	4
	PM BEGIN PEAK HR			4:45 PM			5	9	4	9	27					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

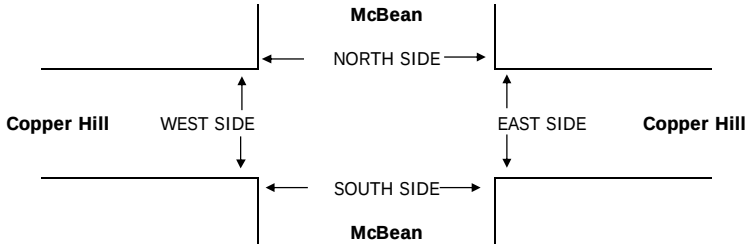
LOCATION: Santa Clarita
NORTH & SOUTH: McBean
EAST & WEST: Copper Hill
PROJECT #: SC1841
LOCATION #: 13
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

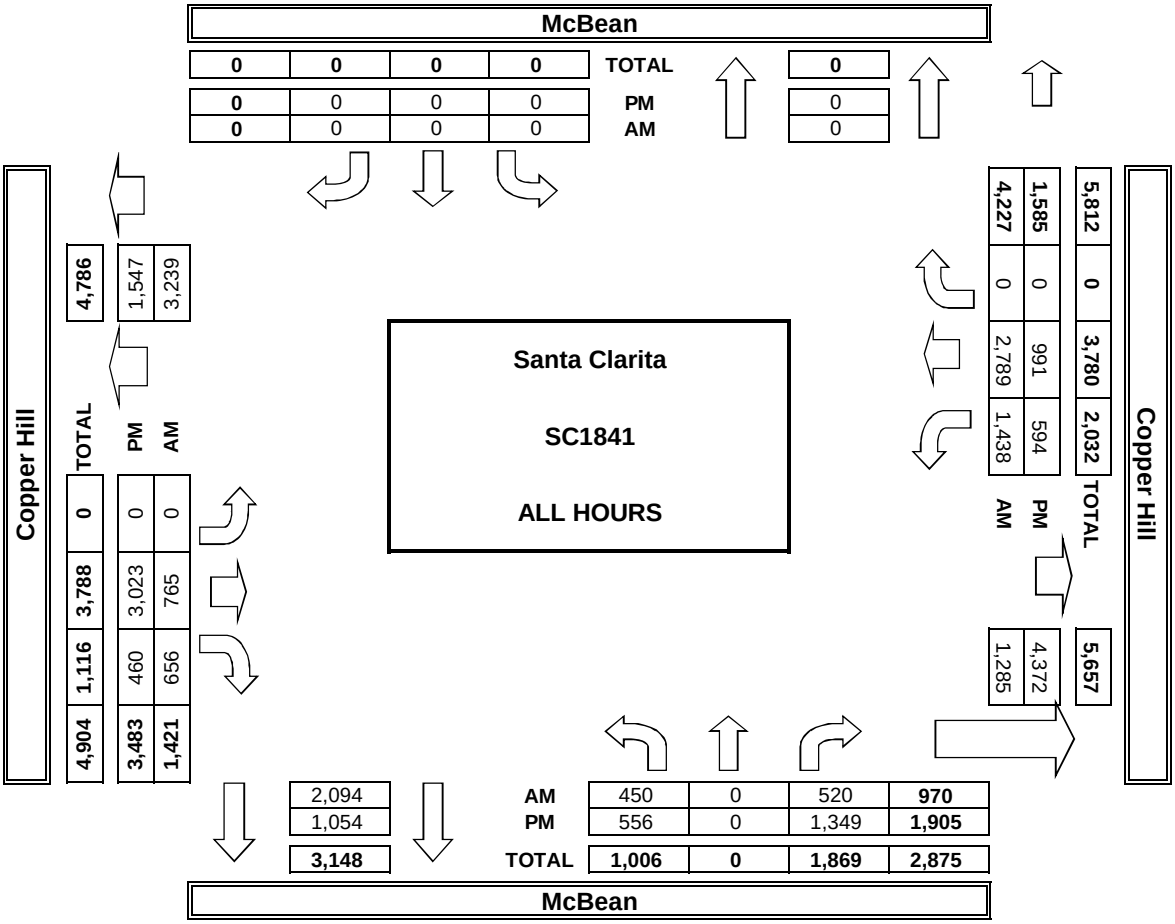
		NORTHBOUND McBean			SOUTHBOUND McBean			EASTBOUND Copper Hill			WESTBOUND Copper Hill				U-TURNS				
	LANES:	NL 2	NT X	NR 2	SL X	ST X	SR X	EL X	ET 2	ER 1	WL 2	WT 2	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	46	0	31	0	0	0	0	51	35	141	338	0	642	0	0	0	0	0
	7:15 AM	95	0	47	0	0	0	0	101	112	180	465	0	1,000	0	0	0	0	0
	7:30 AM	66	0	74	0	0	0	0	134	161	224	455	0	1,114	0	0	0	0	0
	7:45 AM	67	0	92	0	0	0	0	141	124	189	377	0	990	0	0	0	0	0
	8:00 AM	58	0	69	0	0	0	0	107	65	183	343	0	825	0	0	0	0	0
	8:15 AM	31	0	64	0	0	0	0	80	56	158	300	0	689	0	0	0	0	0
	8:30 AM	39	0	62	0	0	0	0	68	45	194	239	0	647	0	0	0	0	0
	8:45 AM	48	0	81	0	0	0	0	83	58	169	272	0	711	0	0	0	0	0
	VOLUMES	450	0	520	0	0	0	0	765	656	1,438	2,789	0	6,618	0	0	0	0	0
	APPROACH %	46%	0%	54%	0%	0%	0%	0%	54%	46%	34%	66%	0%						
	APP/DEPART	970	/	0	0	/	2,094	1,421	/	1,285	4,227	/	3,239	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	286	0	282	0	0	0	0	483	462	776	1,640	0	3,929					
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	51%	49%	32%	68%	0%						
	PEAK HR FACTOR		0.893			0.000			0.801			0.890		0.882					
	APP/DEPART	568	/	0	0	/	1,238	945	/	765	2,416	/	1,926	0					
PM	4:00 PM	53	0	138	0	0	0	0	324	62	56	110	0	743	0	0	0	0	0
	4:15 PM	49	0	139	0	0	0	0	367	43	57	102	0	757	0	0	0	0	0
	4:30 PM	72	0	152	0	0	0	0	387	54	85	135	0	885	0	0	0	0	0
	4:45 PM	72	0	180	0	0	0	0	402	61	84	169	0	968	0	0	0	0	0
	5:00 PM	69	0	180	0	0	0	0	387	48	71	107	0	862	0	0	0	0	0
	5:15 PM	73	0	220	0	0	0	0	395	58	84	108	0	938	0	0	0	0	0
	5:30 PM	96	0	169	0	0	0	0	364	62	80	121	0	892	0	0	0	0	0
	5:45 PM	72	0	171	0	0	0	0	397	72	77	139	0	928	0	0	0	0	0
	VOLUMES	556	0	1,349	0	0	0	0	3,023	460	594	991	0	6,973	0	0	0	0	0
	APPROACH %	29%	0%	71%	0%	0%	0%	0%	87%	13%	37%	63%	0%						
	APP/DEPART	1,905	/	0	0	/	1,054	3,483	/	4,372	1,585	/	1,547	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	310	0	749	0	0	0	0	1,548	229	319	505	0	3,660					
	APPROACH %	29%	0%	71%	0%	0%	0%	0%	87%	13%	39%	61%	0%						
	PEAK HR FACTOR		0.904			0.000			0.960			0.814		0.945					
	APP/DEPART	1,059	/	0	0	/	548	1,777	/	2,297	824	/	815	0					

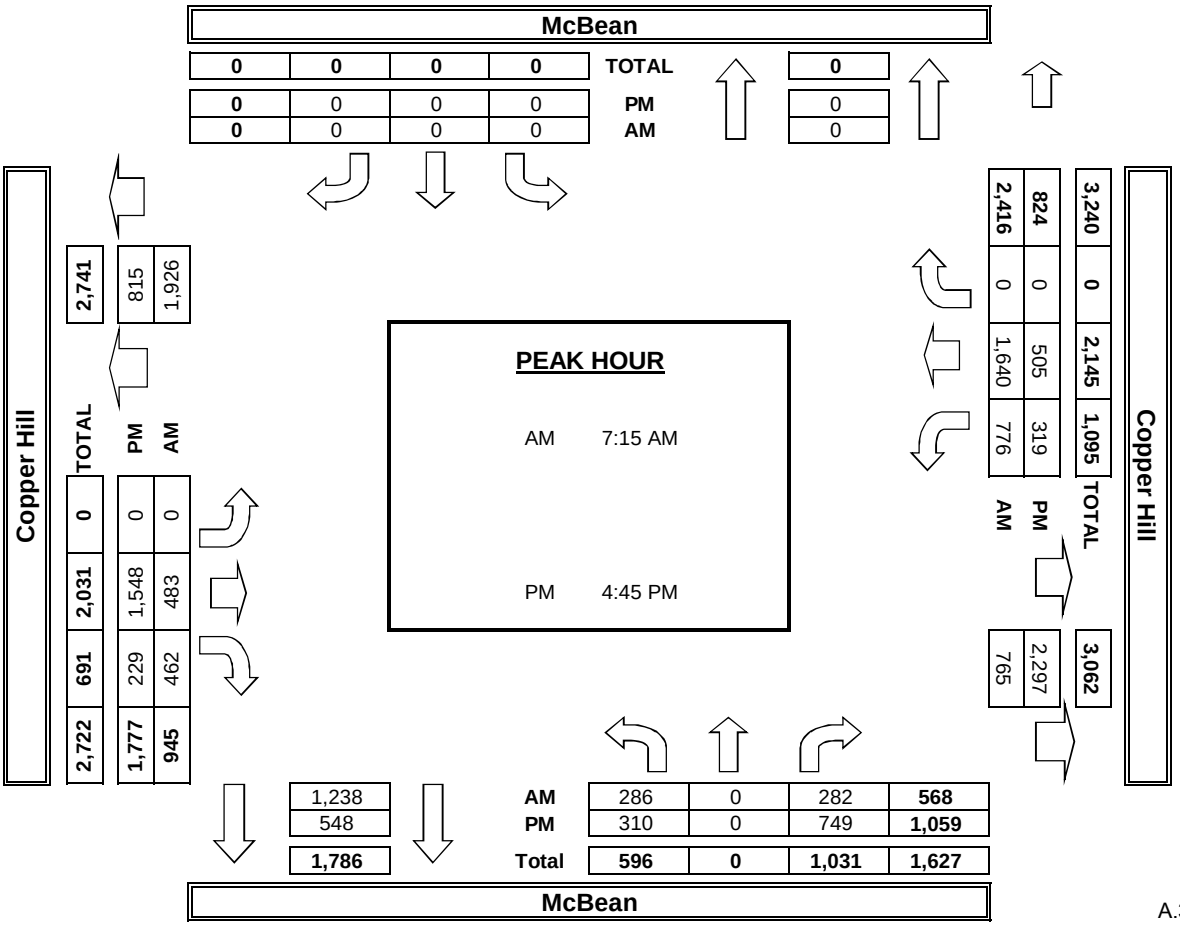


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0
	7:15 AM	0	6	0	0	6	0	5	0	0	5	0	1	0	0	1
	7:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:45 AM	0	5	0	0	5	0	3	0	0	3	0	2	0	0	2
	8:00 AM	0	4	0	0	4	0	2	0	0	2	0	2	0	0	2
	8:15 AM	0	3	1	0	4	0	1	1	0	2	0	2	0	0	2
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	3	1	0	4	0	3	1	0	4	0	0	0	0	0
	TOTAL	0	25	2	0	27	0	18	2	0	20	0	7	0	0	7
	AM BEGIN PEAK HR			7:15 AM			0	11	0	0	11					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	7	2	0	9	0	5	2	0	7	0	2	0	0	2
	4:30 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	4:45 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
	5:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	5:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2
	TOTAL	0	15	2	0	17	0	10	2	0	12	0	5	0	0	5
	PM BEGIN PEAK HR			4:45 PM			0	3	0	0	3					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Golden Valley
EAST & WEST: Plum Canyon

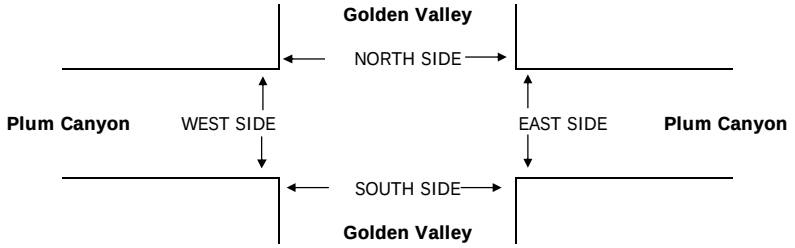
PROJECT #: SC1841
LOCATION #: 14
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

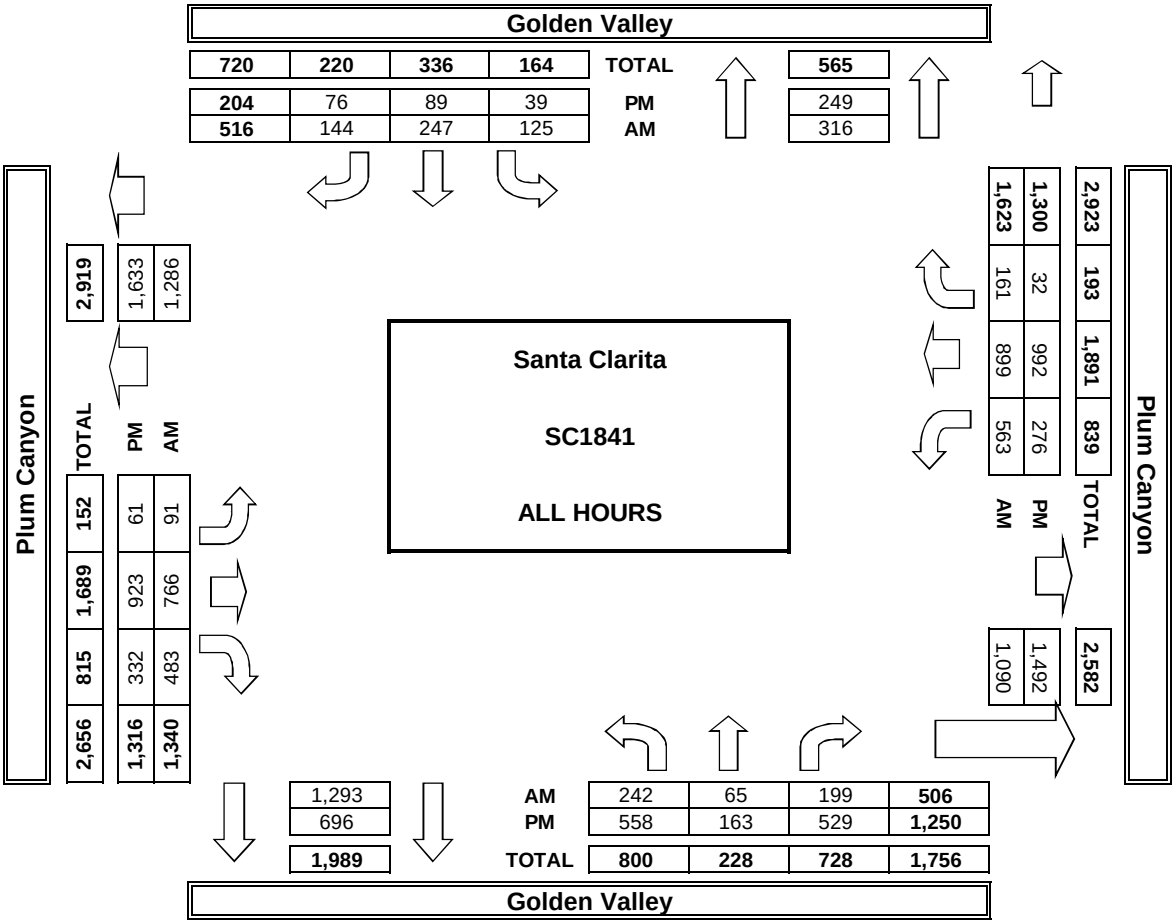
		NORTHBOUND Golden Valley			SOUTHBOUND Golden Valley			EASTBOUND Plum Canyon			WESTBOUND Plum Canyon				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 0.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	23	3	23	5	23	9	2	94	33	65	91	3	374	0	0	0	0	0
	7:15 AM	21	3	29	4	25	15	8	110	68	84	105	9	481	0	0	0	0	0
	7:30 AM	33	19	27	10	39	13	25	86	63	92	121	29	557	0	0	0	0	0
	7:45 AM	42	16	29	37	38	30	21	81	76	80	149	54	653	0	0	0	0	0
	8:00 AM	39	13	24	34	43	33	15	106	75	71	123	52	628	0	0	1	0	1
	8:15 AM	32	3	18	24	31	28	5	85	60	64	138	8	496	0	0	0	0	0
	8:30 AM	27	7	31	8	23	10	5	101	50	63	95	3	423	0	0	0	0	0
	8:45 AM	25	1	18	3	25	6	10	103	58	44	77	3	373	0	0	0	0	0
	VOLUMES	242	65	199	125	247	144	91	766	483	563	899	161	3,985	0	0	1	0	1
	APPROACH %	48%	13%	39%	24%	48%	28%	7%	57%	36%	35%	55%	10%						
	APP/DEPART	506	/	316	516	/	1,293	1,340	/	1,090	1,623	/	1,286	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	146	51	98	105	151	104	66	358	274	307	531	143	2,334					
	APPROACH %	49%	17%	33%	29%	42%	29%	9%	51%	39%	31%	54%	15%						
	PEAK HR FACTOR		0.848			0.818			0.890			0.867		0.894					
	APP/DEPART	295	/	259	360	/	732	698	/	561	981	/	782	0					
PM	4:00 PM	61	13	60	6	17	10	6	100	39	34	97	6	449	0	0	1	0	1
	4:15 PM	60	16	71	2	4	8	6	102	40	30	121	2	462	0	0	1	0	1
	4:30 PM	63	20	60	1	10	10	9	113	41	38	110	6	481	0	0	1	0	1
	4:45 PM	81	23	62	4	16	9	9	116	41	40	129	5	535	0	0	0	0	0
	5:00 PM	80	27	77	8	7	9	10	133	45	30	120	4	550	0	0	1	0	1
	5:15 PM	80	18	72	5	10	11	6	119	36	34	142	5	538	0	0	2	1	3
	5:30 PM	59	19	70	5	12	14	7	115	42	34	122	0	499	0	0	1	0	1
	5:45 PM	74	27	57	8	13	5	8	125	48	36	151	4	556	0	0	0	0	0
	VOLUMES	558	163	529	39	89	76	61	923	332	276	992	32	4,070	0	0	7	1	8
	APPROACH %	45%	13%	42%	19%	44%	37%	5%	70%	25%	21%	76%	2%						
	APP/DEPART	1,250	/	249	204	/	696	1,316	/	1,492	1,300	/	1,633	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	293	91	276	26	42	39	31	492	171	134	535	13	2,143					
	APPROACH %	44%	14%	42%	24%	39%	36%	4%	71%	25%	20%	78%	2%						
	PEAK HR FACTOR		0.897			0.863			0.923			0.893		0.964					
	APP/DEPART	660	/	131	107	/	346	694	/	795	682	/	871	0					

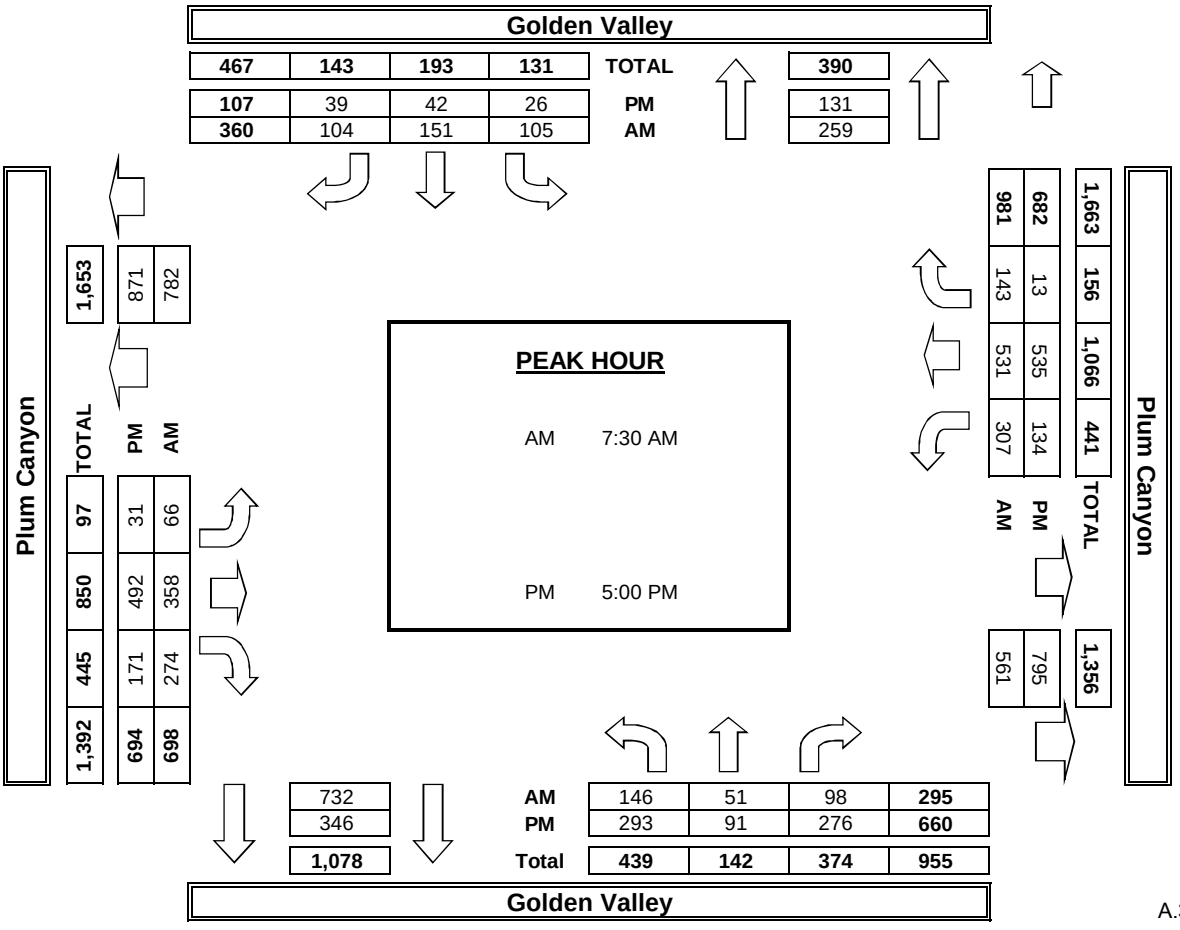


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	1	2	3	0	0	1	2	3	0	0	0	0	0
	7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	8:00 AM	2	0	0	3	5	2	0	0	3	5	0	0	0	0	0
	8:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	8:30 AM	0	0	1	2	3	0	0	1	2	3	0	0	0	0	0
	8:45 AM	0	1	0	1	2	0	1	0	1	2	0	0	0	0	0
	TOTAL	3	2	4	8	17	3	2	3	8	16	0	0	1	0	1
	AM BEGIN PEAK HR	7:30 AM					2	0	2	5	9					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	5:00 PM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	5:15 PM	0	1	0	1	2	0	1	0	1	2	0	0	0	0	0
	5:30 PM	1	0	2	0	3	0	0	0	0	0	1	0	2	0	3
	5:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	TOTAL	1	5	2	3	11	0	4	0	3	7	1	1	2	0	4
	PM BEGIN PEAK HR	5:00 PM					0	2	0	3	5					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Haskell Canyon
EAST & WEST: Bouquet Canyon

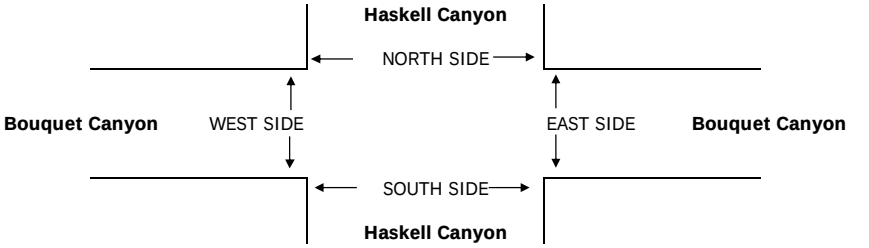
PROJECT #: SC1841
LOCATION #: 15
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

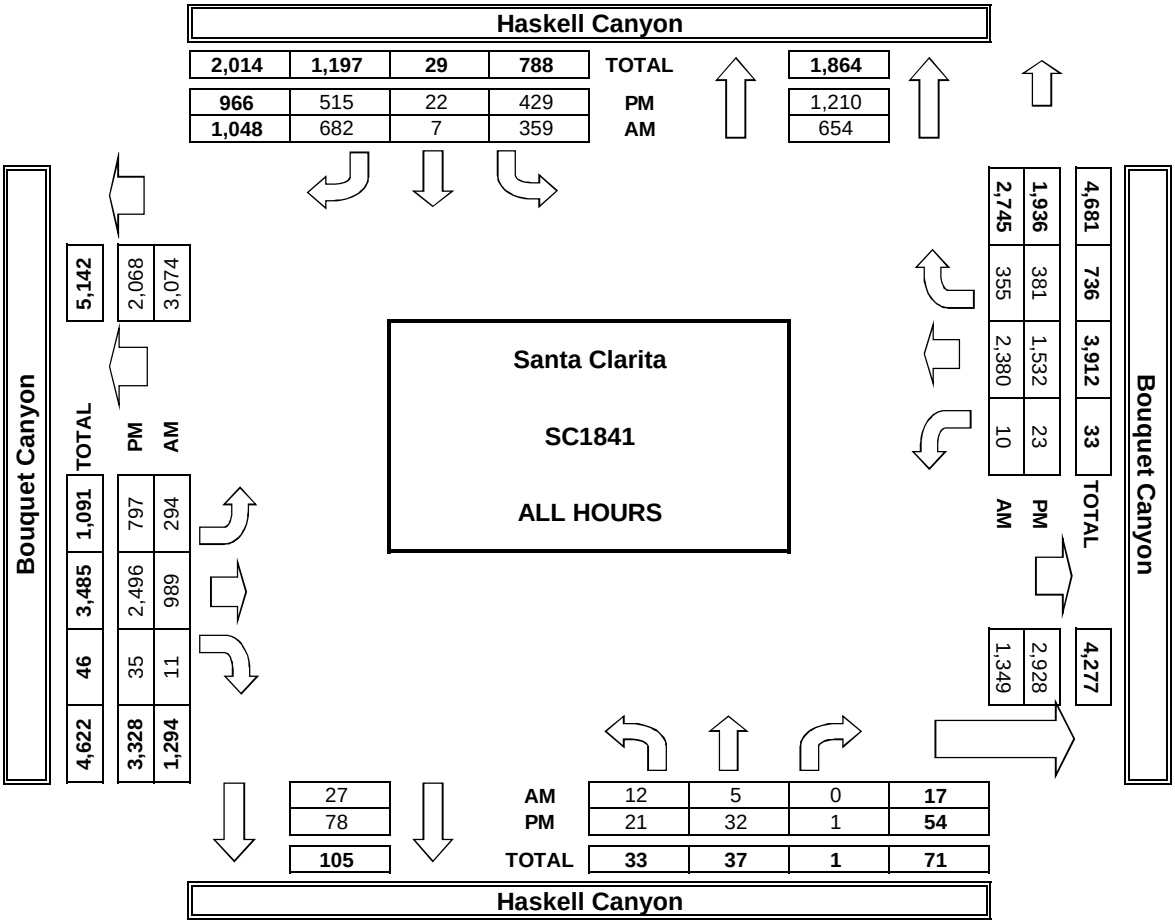
		NORTHBOUND Haskell Canyon			SOUTHBOUND Haskell Canyon			EASTBOUND Bouquet Canyon			WESTBOUND Bouquet Canyon				U-TURNS				
	LANES:	NL 0.3	NT 0.3	NR 0.3	SL 1.5	ST 0.5	SR 1	EL 2	ET 2	ER 0	WL 1	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	1	1	0	33	0	72	22	66	0	0	250	34	479	0	0	0	0	0
	7:15 AM	4	0	0	44	2	125	10	77	3	2	307	27	601	0	0	0	1	1
	7:30 AM	1	0	0	48	0	122	39	120	1	0	358	36	725	0	0	0	0	0
	7:45 AM	0	0	0	63	1	71	46	120	0	1	320	69	691	0	0	0	0	0
	8:00 AM	1	1	0	51	0	66	40	142	0	0	329	88	718	0	0	0	0	0
	8:15 AM	0	0	0	34	0	69	47	135	1	3	327	41	657	0	0	0	0	0
	8:30 AM	1	0	0	40	1	71	46	154	3	4	278	24	622	0	0	0	0	0
	8:45 AM	4	3	0	46	3	86	44	175	3	0	211	36	611	0	0	0	0	0
	VOLUMES	12	5	0	359	7	682	294	989	11	10	2,380	355	5,104	0	0	0	1	1
	APPROACH %	71%	29%	0%	34%	1%	65%	23%	76%	1%	0%	87%	13%						
	APP/DEPART	17	/	654	1,048	/	27	1,294	/	1,349	2,745	/	3,074	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	2	1	0	196	1	328	172	517	2	4	1,334	234	2,791					
	APPROACH %	67%	33%	0%	37%	0%	62%	25%	75%	0%	0%	85%	15%						
	PEAK HR FACTOR		0.375			0.772			0.944			0.942		0.962					
	APP/DEPART	3	/	407	525	/	7	691	/	713	1,572	/	1,664	0					
PM	4:00 PM	2	6	0	41	3	54	92	309	7	1	170	37	722	0	0	0	0	0
	4:15 PM	5	2	1	58	6	65	97	292	2	3	154	56	741	0	0	0	0	0
	4:30 PM	4	0	0	54	1	63	110	304	0	1	180	49	766	0	0	0	0	0
	4:45 PM	1	5	0	53	2	80	109	310	4	3	195	57	819	0	0	0	0	0
	5:00 PM	3	3	0	60	1	72	75	331	4	4	195	50	798	0	0	0	0	0
	5:15 PM	2	4	0	50	2	46	99	341	4	4	191	51	794	0	0	0	1	1
	5:30 PM	4	6	0	61	5	62	107	289	8	4	216	43	805	0	0	0	0	0
	5:45 PM	0	6	0	52	2	73	108	320	6	3	231	38	839	0	0	0	1	1
	VOLUMES	21	32	1	429	22	515	797	2,496	35	23	1,532	381	6,284	0	0	0	2	2
	APPROACH %	39%	59%	2%	44%	2%	53%	24%	75%	1%	1%	79%	20%						
	APP/DEPART	54	/	1,210	966	/	78	3,328	/	2,928	1,936	/	2,068	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	9	19	0	223	10	253	389	1,281	22	15	833	182	3,236					
	APPROACH %	32%	68%	0%	46%	2%	52%	23%	76%	1%	1%	81%	18%						
	PEAK HR FACTOR		0.700			0.914			0.953			0.947		0.964					
	APP/DEPART	28	/	590	486	/	45	1,692	/	1,506	1,030	/	1,095	0					

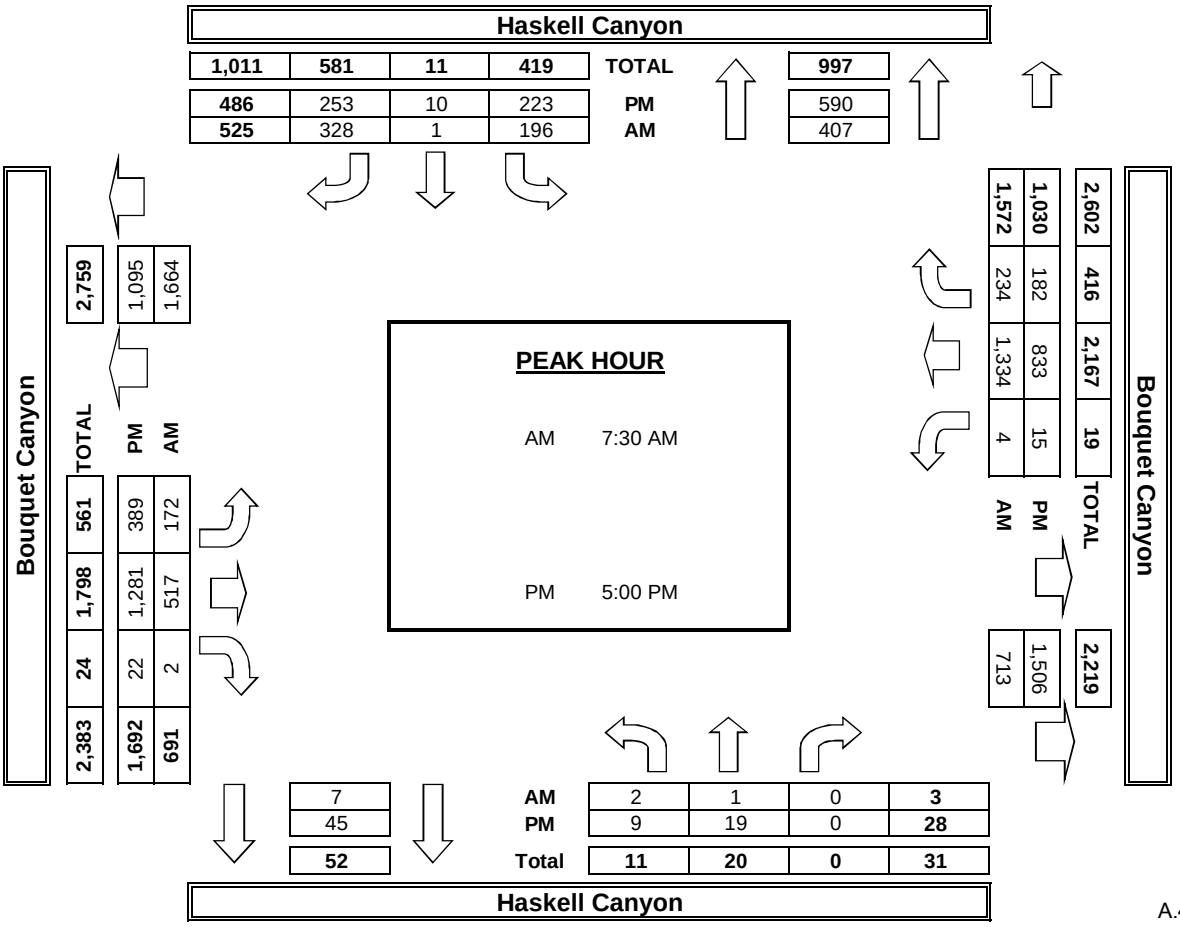


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	2	1	0	0	3	1	1	0	0	2	1	0	0	0	1
	7:15 AM	4	1	0	0	5	3	1	0	0	4	1	0	0	0	1
	7:30 AM	17	2	2	0	21	16	2	2	0	20	1	0	0	0	1
	7:45 AM	16	3	2	0	21	16	3	2	0	21	0	0	0	0	0
	8:00 AM	23	0	0	0	23	23	0	0	0	23	0	0	0	0	0
	8:15 AM	35	0	0	0	35	35	0	0	0	35	0	0	0	0	0
	8:30 AM	44	0	2	0	46	43	0	2	0	45	1	0	0	0	1
	8:45 AM	32	0	0	0	32	32	0	0	0	32	0	0	0	0	0
	TOTAL	173	7	6	0	186	169	7	6	0	182	4	0	0	0	4
	AM BEGIN PEAK HR			7:30 AM			90	5	4	0	99					
PM	4:00 PM	3	1	1	1	6	2	1	1	1	5	1	0	0	0	1
	4:15 PM	2	1	0	0	3	2	0	0	0	2	0	1	0	0	1
	4:30 PM	1	0	2	0	3	1	0	2	0	3	0	0	0	0	0
	4:45 PM	5	2	5	0	12	4	2	5	0	11	1	0	0	0	1
	5:00 PM	2	3	4	0	9	2	3	4	0	9	0	0	0	0	0
	5:15 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	5:30 PM	2	3	1	0	6	1	1	1	0	3	1	2	0	0	3
	5:45 PM	1	0	3	0	4	0	0	3	0	3	1	0	0	0	1
	TOTAL	18	10	16	1	45	14	7	16	1	38	4	3	0	0	7
	PM BEGIN PEAK HR			5:00 PM			5	4	8	0	17					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Seco Canyon
EAST & WEST: Bouquet Canyon
PROJECT #: SC1841
LOCATION #: 16
CONTROL: SIGNAL

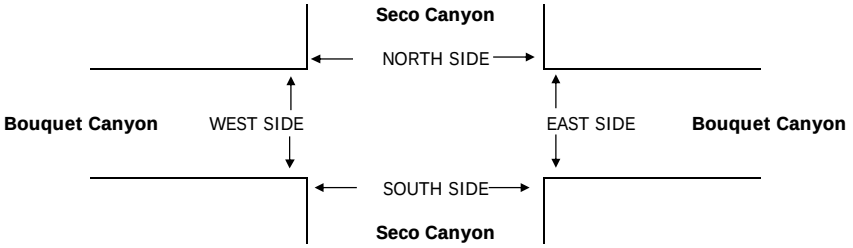
NOTES:

AM
PM
MD
OTHER
OTHER

N ▲ S ▼ ◄ W E ►

Add U-Turns to Left Turns

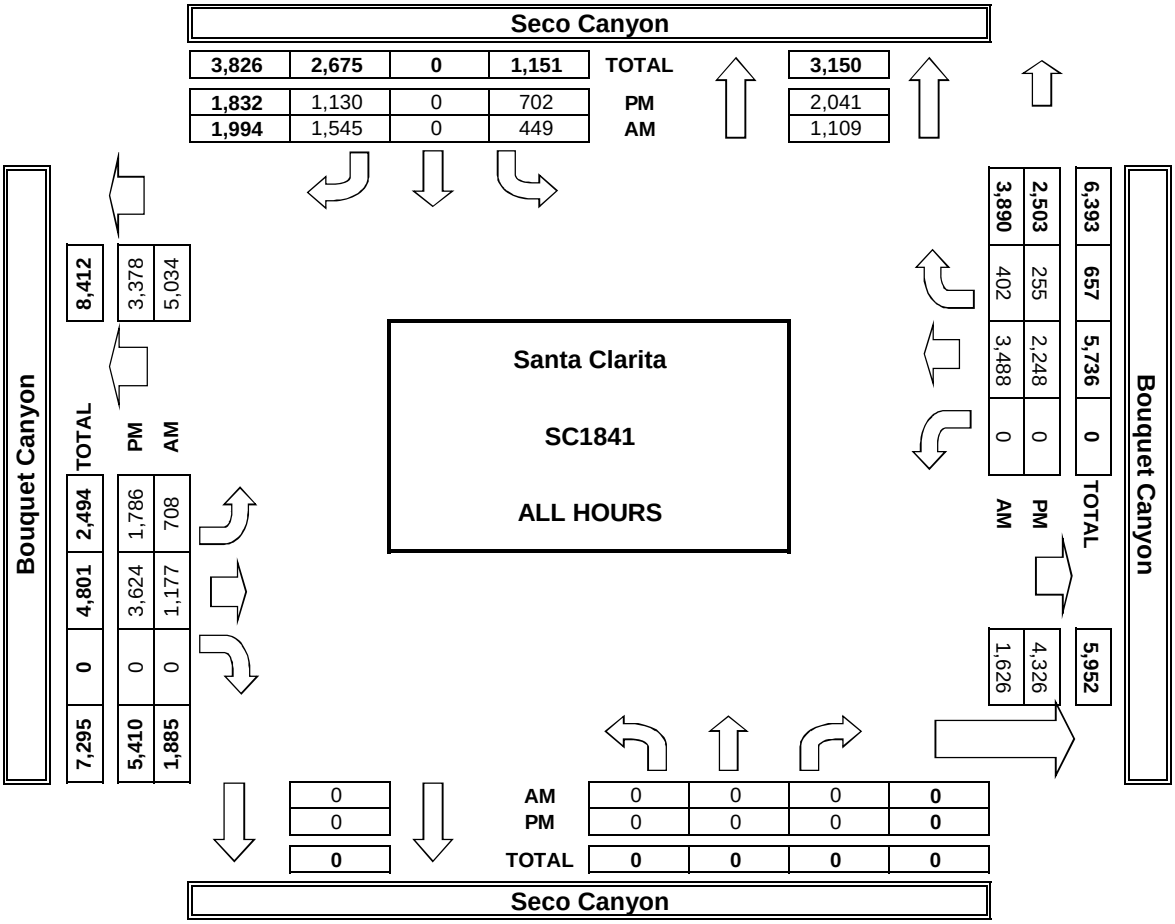
		NORTHBOUND Seco Canyon			SOUTHBOUND Seco Canyon			EASTBOUND Bouquet Canyon			WESTBOUND Bouquet Canyon				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 1	ST X	SR 2	EL 2	ET 2	ER X	WL X	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	23	0	132	41	86	0	0	383	20	685	0	0	0	0	0
	7:15 AM	0	0	0	30	0	193	51	110	0	0	499	23	906	0	0	0	0	0
	7:30 AM	0	0	0	28	0	201	111	152	0	0	530	39	1,061	0	0	0	0	0
	7:45 AM	0	0	0	35	0	202	97	160	0	0	489	49	1,032	0	0	0	0	0
	8:00 AM	0	0	0	61	0	198	111	172	0	0	391	67	1,000	0	0	0	0	0
	8:15 AM	0	0	0	78	0	191	112	167	0	0	392	89	1,029	0	0	0	0	0
	8:30 AM	0	0	0	100	0	191	96	171	0	0	397	81	1,036	0	0	1	0	1
	8:45 AM	0	0	0	94	0	237	89	159	0	0	407	34	1,020	0	0	0	0	0
	VOLUMES	0	0	0	449	0	1,545	708	1,177	0	0	3,488	402	7,769	0	0	1	0	1
	APPROACH %	0%	0%	0%	23%	0%	77%	38%	62%	0%	0%	90%	10%						
	APP/DEPART	0	/	1,109	1,994	/	0	1,885	/	1,626	3,890	/	5,034	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	202	0	792	431	651	0	0	1,802	244	4,122					
	APPROACH %	0%	0%	0%	20%	0%	80%	40%	60%	0%	0%	88%	12%						
	PEAK HR FACTOR		0.000			0.924			0.956			0.899		0.971					
	APP/DEPART	0	/	675	994	/	0	1,082	/	853	2,046	/	2,594	0					
PM	4:00 PM	0	0	0	50	0	115	204	463	0	0	287	31	1,150	0	0	0	0	0
	4:15 PM	0	0	0	76	0	162	220	437	0	0	296	31	1,222	0	0	0	0	0
	4:30 PM	0	0	0	78	0	160	176	386	0	0	306	36	1,142	0	0	0	0	0
	4:45 PM	0	0	0	96	0	141	215	488	0	0	273	32	1,245	0	0	0	0	0
	5:00 PM	0	0	0	87	0	142	252	449	0	0	283	33	1,246	0	0	0	0	0
	5:15 PM	0	0	0	114	0	139	246	495	0	0	267	29	1,290	0	0	0	0	0
	5:30 PM	0	0	0	94	0	147	240	474	0	0	255	27	1,237	0	0	0	0	0
	5:45 PM	0	0	0	107	0	124	233	432	0	0	281	36	1,213	0	0	0	0	0
	VOLUMES	0	0	0	702	0	1,130	1,786	3,624	0	0	2,248	255	9,745	0	0	0	0	0
	APPROACH %	0%	0%	0%	38%	0%	62%	33%	67%	0%	0%	90%	10%						
	APP/DEPART	0	/	2,041	1,832	/	0	5,410	/	4,326	2,503	/	3,378	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	0	391	0	569	953	1,906	0	0	1,078	121	5,018					
	APPROACH %	0%	0%	0%	41%	0%	59%	33%	67%	0%	0%	90%	10%						
	PEAK HR FACTOR		0.000			0.949			0.965			0.949		0.972					
	APP/DEPART	0	/	1,074	960	/	0	2,859	/	2,297	1,199	/	1,647	0					

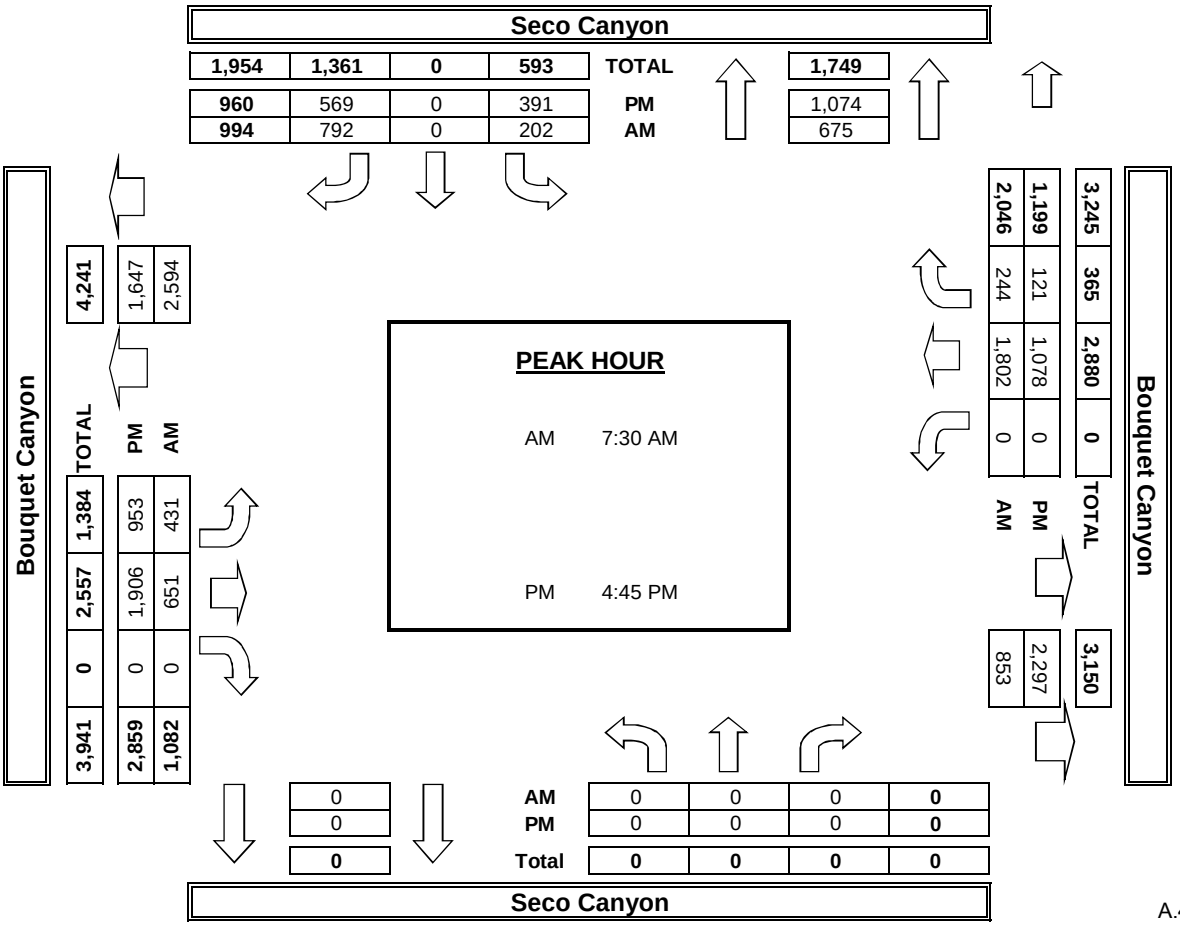


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	0	4	0	5	0	0	4	0	4	1	0	0	0	1
	7:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	7:30 AM	4	0	1	0	5	3	0	1	0	4	1	0	0	0	1
	7:45 AM	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2
	8:00 AM	6	0	0	0	6	6	0	0	0	6	0	0	0	0	0
	8:15 AM	2	0	2	0	4	2	0	2	0	4	0	0	0	0	0
	8:30 AM	2	0	2	0	4	1	0	2	0	3	1	0	0	0	1
	8:45 AM	5	0	2	0	7	3	0	2	0	5	2	0	0	0	2
	TOTAL	22	0	12	0	34	15	0	12	0	27	7	0	0	0	7
	AM BEGIN PEAK HR			7:30 AM			11	0	3	0	14					
PM	4:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	4:15 PM	1	0	8	0	9	1	0	6	0	7	0	0	2	0	2
	4:30 PM	1	0	2	0	3	1	0	1	0	2	0	0	1	0	1
	4:45 PM	0	0	3	0	3	0	0	0	0	0	0	0	3	0	3
	5:00 PM	1	1	2	0	4	1	0	1	0	2	0	1	1	0	2
	5:15 PM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	5:30 PM	1	0	2	0	3	1	0	0	0	1	0	0	2	0	2
	5:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	6	1	19	0	26	6	0	10	0	16	0	1	9	0	10
	PM BEGIN PEAK HR			4:45 PM			2	0	3	0	5					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

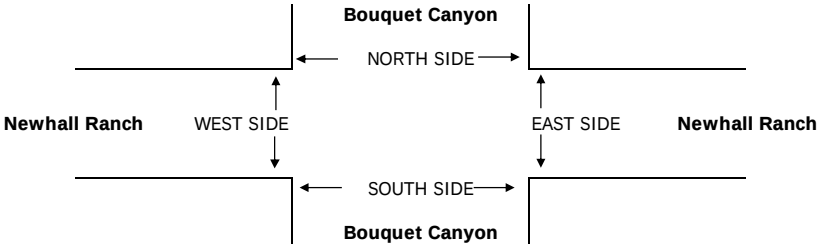
LOCATION: Santa Clarita
NORTH & SOUTH: Bouquet Canyon
EAST & WEST: Newhall Ranch
PROJECT #: SC1841
LOCATION #: 17
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

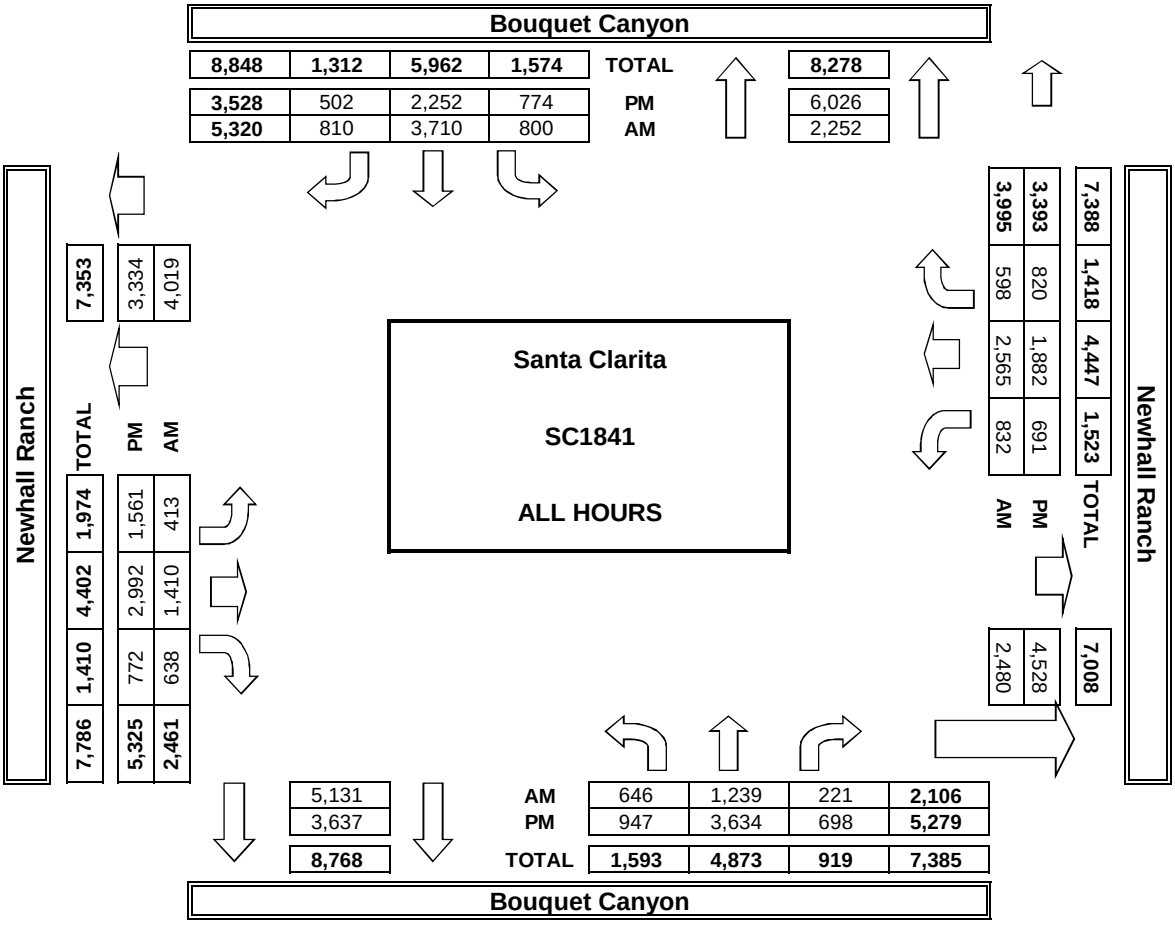
		NORTHBOUND Bouquet Canyon			SOUTHBOUND Bouquet Canyon			EASTBOUND Newhall Ranch			WESTBOUND Newhall Ranch				U-TURNS				
	LANES:	NL 2	NT 4	NR 1	SL 2	ST 4	SR 1	EL 3	ET 4	ER 1	WL 2	WT 4	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	74	114	21	54	419	85	26	133	58	77	255	38	1,354	0	0	0	2	2
	7:15 AM	73	108	18	79	434	96	50	169	46	92	275	49	1,489	0	0	0	4	4
	7:30 AM	67	187	31	81	546	97	59	182	69	114	337	149	1,919	0	0	0	7	7
	7:45 AM	94	221	39	116	538	135	55	192	125	108	380	116	2,119	1	0	0	6	7
	8:00 AM	94	149	29	127	519	111	60	197	98	120	384	72	1,960	0	1	0	7	8
	8:15 AM	78	160	34	127	473	114	50	165	77	104	368	66	1,816	0	0	0	10	10
	8:30 AM	71	142	27	103	379	81	57	179	73	95	268	58	1,533	0	1	0	7	8
	8:45 AM	95	158	22	113	402	91	56	193	92	122	298	50	1,692	1	0	0	8	9
	VOLUMES	646	1,239	221	800	3,710	810	413	1,410	638	832	2,565	598	13,882	2	2	0	51	55
	APPROACH %	31%	59%	10%	15%	70%	15%	17%	57%	26%	21%	64%	15%						
	APP/DEPART	2,106	/	2,252	5,320	/	5,131	2,461	/	2,480	3,995	/	4,019	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	333	717	133	451	2,076	457	224	736	369	446	1,469	403	7,814					
	APPROACH %	28%	61%	11%	15%	70%	15%	17%	55%	28%	19%	63%	17%						
	PEAK HR FACTOR		0.835			0.946			0.893			0.959		0.922					
	APP/DEPART	1,183	/	1,345	2,984	/	2,862	1,329	/	1,349	2,318	/	2,258	0					
PM	4:00 PM	142	399	82	88	274	57	178	343	100	83	235	69	2,050	0	3	1	11	15
	4:15 PM	82	416	85	82	276	50	179	400	88	77	253	107	2,095	0	1	0	9	10
	4:30 PM	112	451	67	112	268	59	137	298	106	78	237	99	2,024	0	2	0	13	15
	4:45 PM	118	472	82	109	304	60	194	382	97	102	256	109	2,285	0	2	1	7	10
	5:00 PM	127	484	87	105	281	63	213	393	98	79	207	88	2,225	0	1	0	10	11
	5:15 PM	128	445	96	100	268	67	228	428	105	90	224	118	2,297	0	3	0	7	10
	5:30 PM	124	471	104	89	264	73	206	372	101	98	249	117	2,268	0	1	0	12	13
	5:45 PM	114	496	95	89	317	73	226	376	77	84	221	113	2,281	0	1	1	9	11
	VOLUMES	947	3,634	698	774	2,252	502	1,561	2,992	772	691	1,882	820	17,525	0	14	3	78	95
	APPROACH %	18%	69%	13%	22%	64%	14%	29%	56%	14%	20%	55%	24%						
	APP/DEPART	5,279	/	6,026	3,528	/	3,637	5,325	/	4,528	3,393	/	3,334	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	497	1,872	369	403	1,117	263	841	1,575	401	369	936	432	9,075					
	APPROACH %	18%	68%	13%	23%	63%	15%	30%	56%	14%	21%	54%	25%						
	PEAK HR FACTOR		0.979			0.942			0.925			0.930		0.988					
	APP/DEPART	2,738	/	3,151	1,783	/	1,851	2,817	/	2,376	1,737	/	1,697	0					

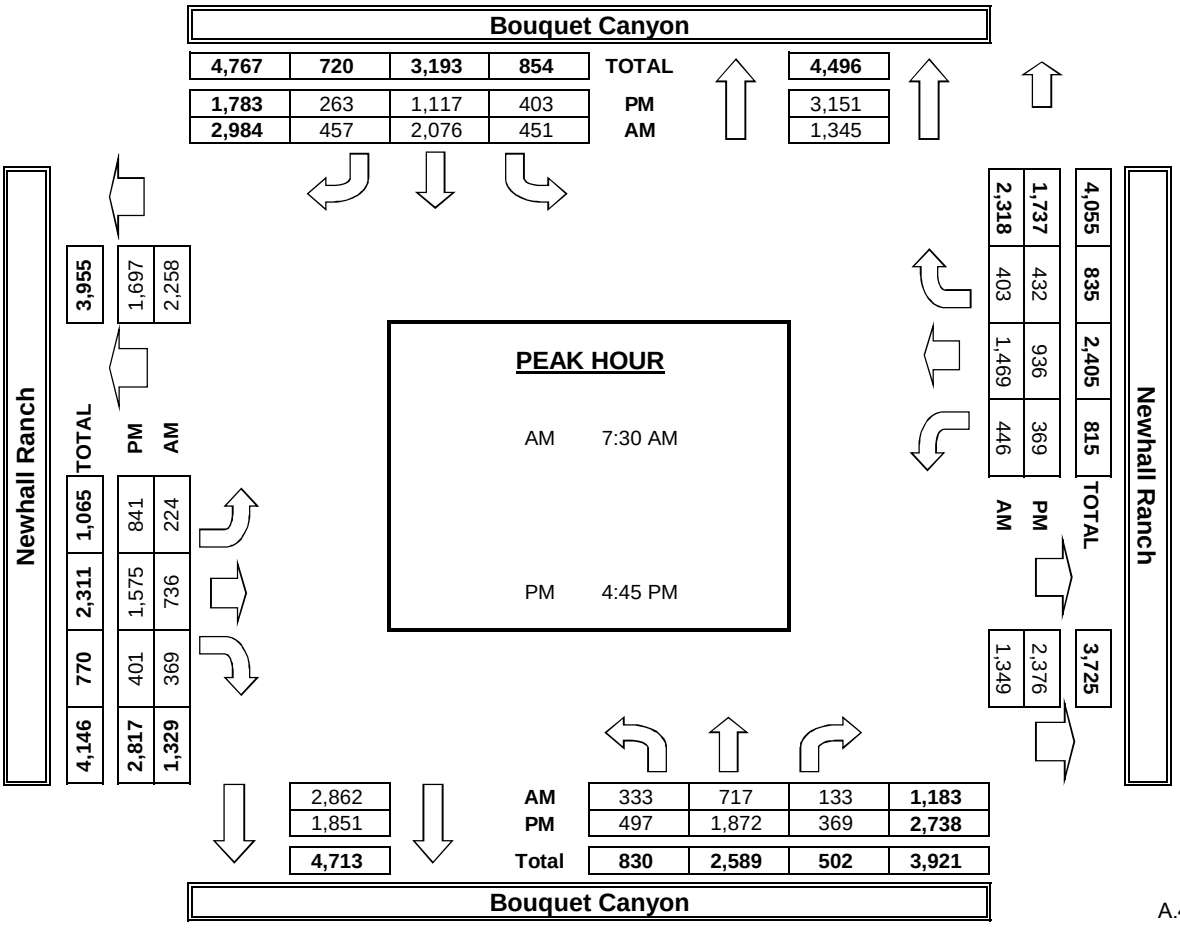


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	2	0	0	1	3	2	0	0	1	3	0	0	0	0	0
	7:15 AM	0	0	1	1	2	0	0	0	0	0	0	0	1	1	2
	7:30 AM	1	0	0	1	2	0	0	0	1	1	1	0	0	0	1
	7:45 AM	1	2	3	3	9	1	0	0	2	3	0	2	3	1	6
	8:00 AM	0	1	2	1	4	0	1	1	1	3	0	0	1	0	1
	8:15 AM	0	1	1	1	3	0	1	1	1	3	0	0	0	0	0
	8:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:45 AM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0
	TOTAL	4	6	8	8	26	3	4	3	6	16	1	2	5	2	10
	AM BEGIN PEAK HR			7:30 AM			1	2	2	5	10					
PM	4:00 PM	0	3	3	8	14	0	2	3	8	13	0	1	0	0	1
	4:15 PM	5	1	0	3	9	4	1	0	1	6	1	0	0	2	3
	4:30 PM	1	7	5	3	16	1	6	3	3	13	0	1	2	0	3
	4:45 PM	1	0	1	3	5	1	0	0	2	3	0	0	1	1	2
	5:00 PM	0	1	0	1	2	0	1	0	0	1	0	0	0	1	1
	5:15 PM	1	2	3	3	9	0	2	3	1	6	1	0	0	2	3
	5:30 PM	2	2	0	0	4	2	2	0	0	4	0	0	0	0	0
	5:45 PM	0	2	0	3	5	0	2	0	3	5	0	0	0	0	0
	TOTAL	10	18	12	24	64	8	16	9	18	51	2	2	3	6	13
	PM BEGIN PEAK HR			4:45 PM			3	5	3	3	14					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

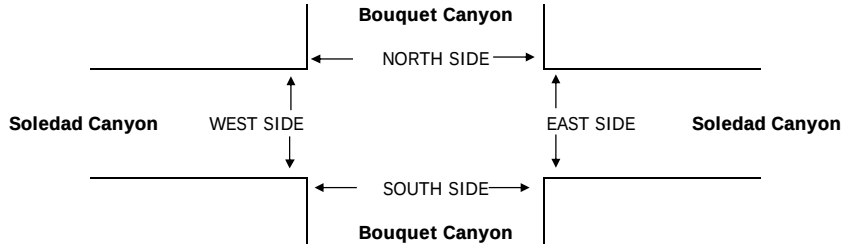
LOCATION: Santa Clarita
NORTH & SOUTH: Bouquet Canyon
EAST & WEST: Soledad Canyon
PROJECT #: SC1841
LOCATION #: 18
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

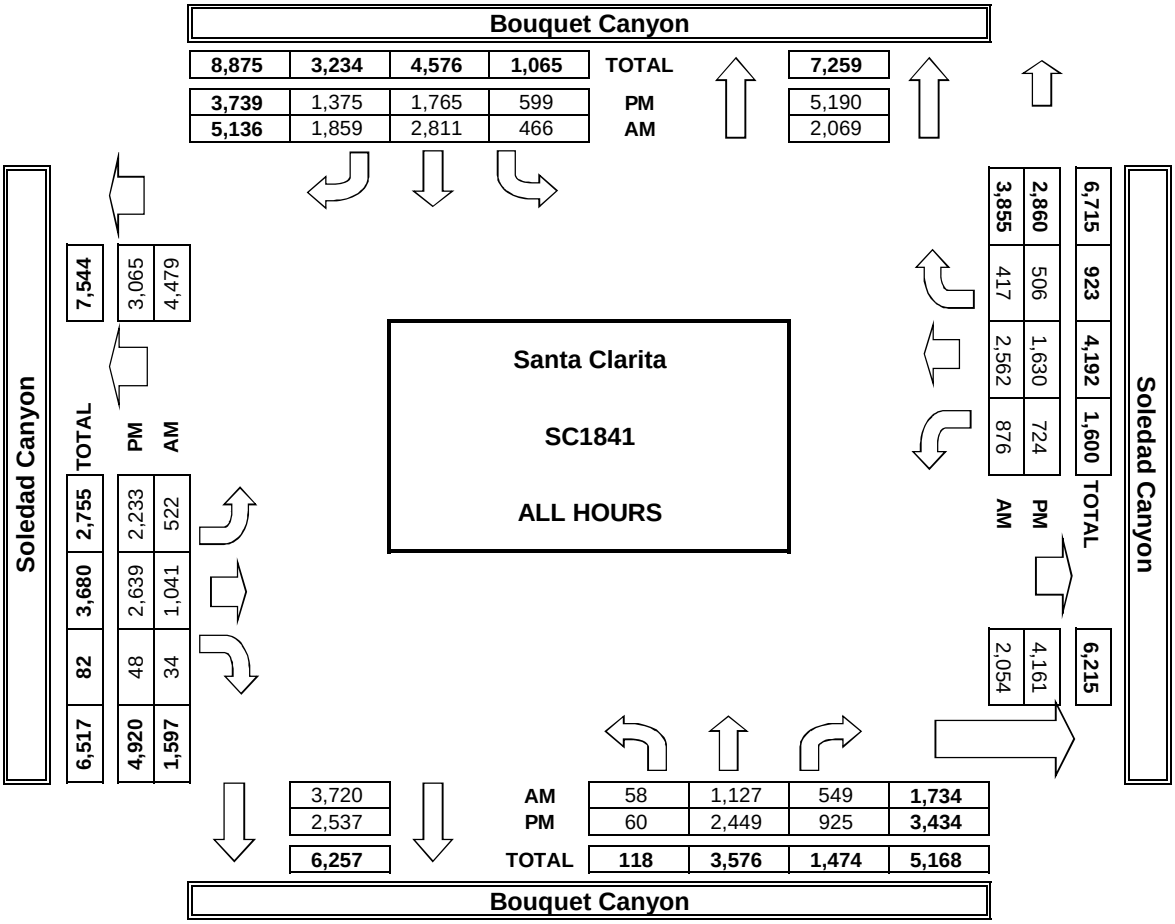
Add U-Turns to Left Turns

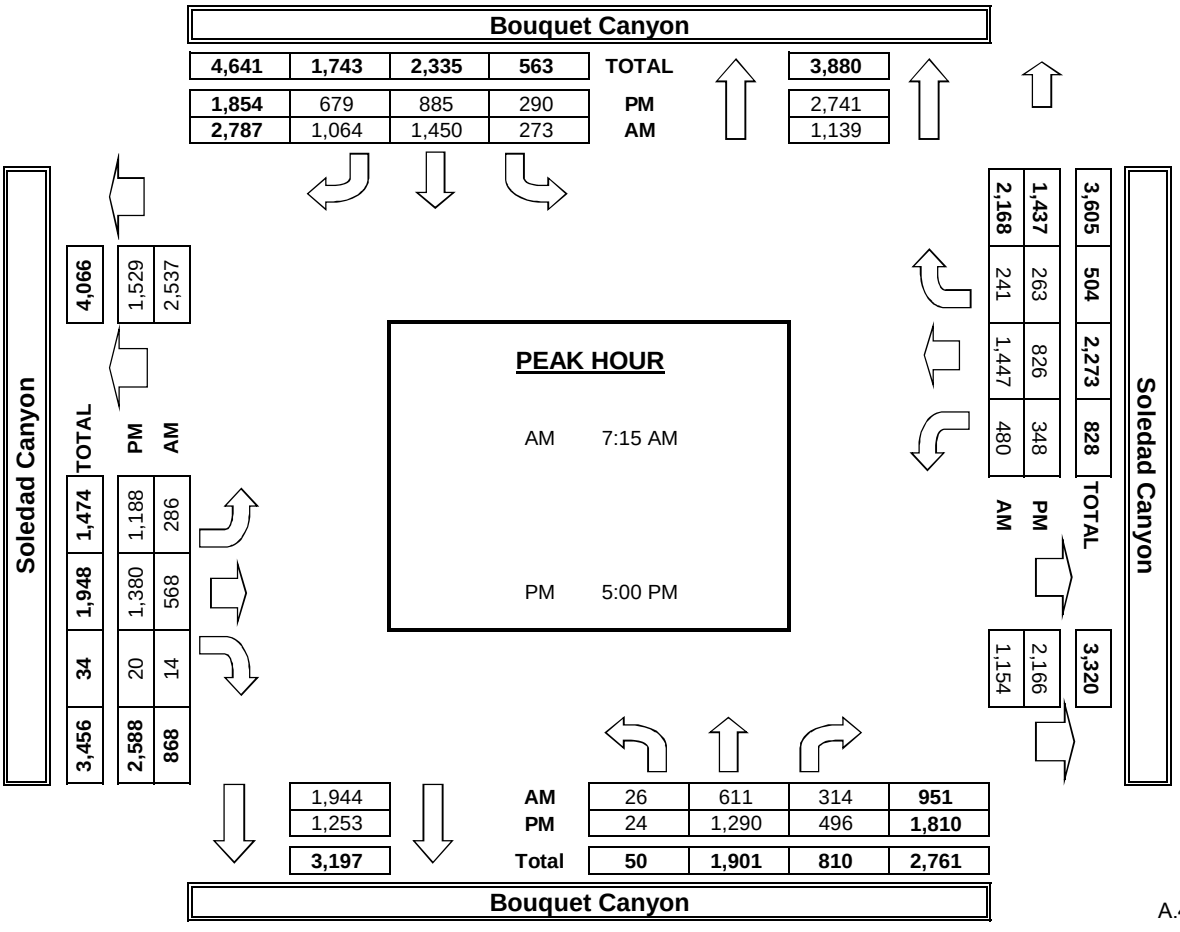
		NORTHBOUND Bouquet Canyon			SOUTHBOUND Bouquet Canyon			EASTBOUND Soledad Canyon			WESTBOUND Soledad Canyon				U-TURNS				
	LANES:	NL 1	NT 3	NR 1	SL 2	ST 3	SR 2	EL 3	ET 3	ER 0	WL 3	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	8	101	55	31	365	174	29	66	2	119	281	65	1,296	0	0	0	0	0
	7:15 AM	2	136	47	35	377	230	59	132	3	128	333	72	1,554	0	0	0	0	0
	7:30 AM	8	176	84	86	366	248	63	141	4	105	337	61	1,679	0	1	0	0	1
	7:45 AM	9	154	114	85	356	325	76	154	3	128	398	60	1,862	0	0	0	0	0
	8:00 AM	7	145	69	67	351	261	88	141	4	119	379	48	1,679	0	0	0	0	0
	8:15 AM	8	127	57	54	360	202	65	124	13	89	261	38	1,398	0	1	0	0	1
	8:30 AM	9	152	63	48	299	192	61	135	2	89	263	41	1,354	0	1	0	0	1
	8:45 AM	7	136	60	60	337	227	81	148	3	99	310	32	1,500	0	0	0	1	1
	VOLUMES	58	1,127	549	466	2,811	1,859	522	1,041	34	876	2,562	417	12,322	0	3	0	1	4
	APPROACH %	3%	65%	32%	9%	55%	36%	33%	65%	2%	23%	66%	11%						
	APP/DEPART	1,734	/	2,069	5,136	/	3,720	1,597	/	2,054	3,855	/	4,479	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	26	611	314	273	1,450	1,064	286	568	14	480	1,447	241	6,774					
	APPROACH %	3%	64%	33%	10%	52%	38%	33%	65%	2%	22%	67%	11%						
	PEAK HR FACTOR		0.858			0.910			0.931			0.925		0.910					
	APP/DEPART	951	/	1,139	2,787	/	1,944	868	/	1,154	2,168	/	2,537	0					
PM	4:00 PM	17	277	115	68	227	158	246	326	3	103	196	51	1,787	0	0	0	0	0
	4:15 PM	5	285	92	79	211	157	235	277	9	106	209	48	1,713	0	2	0	0	2
	4:30 PM	9	319	109	74	213	186	283	283	9	87	195	52	1,819	0	0	0	0	0
	4:45 PM	5	278	113	88	229	195	281	373	7	80	204	92	1,945	0	0	0	0	0
	5:00 PM	9	320	116	58	208	156	294	373	3	97	202	79	1,915	0	0	0	0	0
	5:15 PM	9	316	131	92	208	154	286	301	4	87	208	49	1,845	0	0	0	0	0
	5:30 PM	4	352	129	68	244	173	294	322	7	90	206	54	1,943	0	0	0	0	0
	5:45 PM	2	302	120	72	225	196	314	384	6	74	210	81	1,986	0	0	0	0	0
	VOLUMES	60	2,449	925	599	1,765	1,375	2,233	2,639	48	724	1,630	506	14,953	0	2	0	0	2
	APPROACH %	2%	71%	27%	16%	47%	37%	45%	54%	1%	25%	57%	18%						
	APP/DEPART	3,434	/	5,190	3,739	/	2,537	4,920	/	4,161	2,860	/	3,065	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	24	1,290	496	290	885	679	1,188	1,380	20	348	826	263	7,689					
	APPROACH %	1%	71%	27%	16%	48%	37%	46%	53%	1%	24%	57%	18%						
	PEAK HR FACTOR		0.933			0.940			0.919			0.950		0.968					
	APP/DEPART	1,810	/	2,741	1,854	/	1,253	2,588	/	2,166	1,437	/	1,529	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3	1	1	0	5	3	1	1	0	5	0	0	0	0	0
	7:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	7:30 AM	2	1	2	0	5	1	1	2	0	4	1	0	0	0	1
	7:45 AM	1	1	2	0	4	1	1	2	0	4	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	1	2	1	4	0	1	1	0	2	0	0	1	1	2
	8:30 AM	0	6	0	0	6	0	5	0	0	5	0	1	0	0	1
	8:45 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	TOTAL	6	10	10	1	27	5	9	9	0	23	1	1	1	1	4
	AM BEGIN PEAK HR			7:15 AM			2	2	5	0	9					
PM	4:00 PM	0	6	5	0	11	0	4	4	0	8	0	2	1	0	3
	4:15 PM	0	3	2	0	5	0	2	2	0	4	0	1	0	0	1
	4:30 PM	0	1	3	0	4	0	1	3	0	4	0	0	0	0	0
	4:45 PM	1	1	4	0	6	1	1	2	0	4	0	0	2	0	2
	5:00 PM	2	3	4	0	9	2	3	3	0	8	0	0	1	0	1
	5:15 PM	1	3	1	0	5	1	3	1	0	5	0	0	0	0	0
	5:30 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	TOTAL	4	17	21	0	42	4	14	16	0	34	0	3	5	0	8
	PM BEGIN PEAK HR			5:00 PM			3	6	5	0	14					

AimTD LLC
TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Golden Valley
EAST & WEST: Newhall Ranch

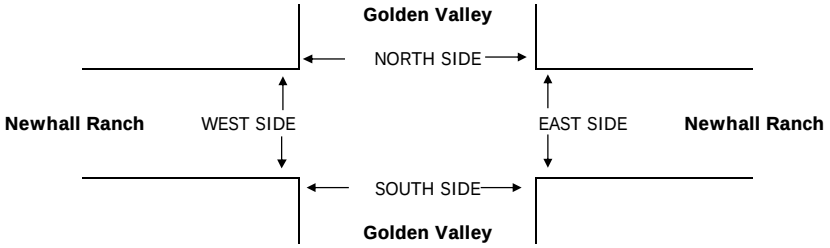
PROJECT #: SC1841
LOCATION #: 19
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

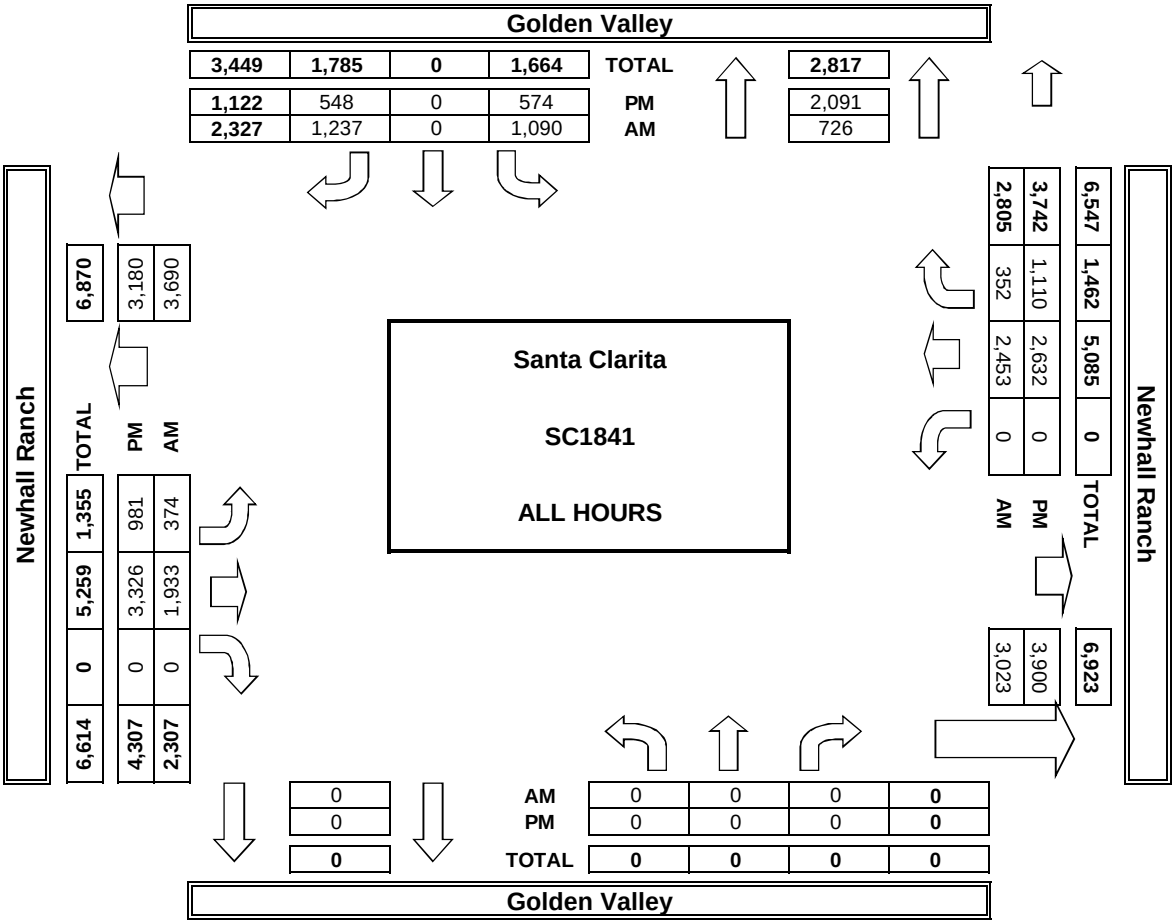
		NORTHBOUND Golden Valley			SOUTHBOUND Golden Valley			EASTBOUND Newhall Ranch			WESTBOUND Newhall Ranch				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 2	ST X	SR 2	EL 2	ET 3	ER X	WL X	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	102	0	97	36	184	0	0	243	39	701	0	0	0	0	0
	7:15 AM	0	0	0	142	0	176	34	239	0	0	337	31	959	0	0	0	0	0
	7:30 AM	0	0	0	158	0	252	44	253	0	0	334	42	1,083	0	0	0	0	0
	7:45 AM	0	0	0	193	0	195	46	264	0	0	351	62	1,111	0	0	0	0	0
	8:00 AM	0	0	0	164	0	146	72	243	0	0	344	50	1,019	0	0	0	0	0
	8:15 AM	0	0	0	125	0	131	53	267	0	0	273	42	891	0	0	0	0	0
	8:30 AM	0	0	0	89	0	108	45	225	0	0	272	51	790	0	0	0	0	0
	8:45 AM	0	0	0	117	0	132	44	258	0	0	299	35	885	0	0	0	0	0
	VOLUMES	0	0	0	1,090	0	1,237	374	1,933	0	0	2,453	352	7,439	0	0	0	0	0
	APPROACH %	0%	0%	0%	47%	0%	53%	16%	84%	0%	0%	87%	13%						
	APP/DEPART	0	/	726	2,327	/	0	2,307	/	3,023	2,805	/	3,690	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	657	0	769	196	999	0	0	1,366	185	4,172					
	APPROACH %	0%	0%	0%	46%	0%	54%	16%	84%	0%	0%	88%	12%						
	PEAK HR FACTOR		0.000			0.870			0.948			0.939		0.939					
	APP/DEPART	0	/	381	1,426	/	0	1,195	/	1,656	1,551	/	2,135	0					
PM	4:00 PM	0	0	0	83	0	60	107	367	0	0	325	128	1,070	0	0	0	0	0
	4:15 PM	0	0	0	81	0	76	125	419	0	0	302	121	1,124	0	0	0	0	0
	4:30 PM	0	0	0	56	0	76	104	416	0	0	352	133	1,137	0	0	0	0	0
	4:45 PM	0	0	0	67	0	75	133	460	0	0	297	129	1,161	0	0	0	0	0
	5:00 PM	0	0	0	56	0	59	140	421	0	0	360	167	1,203	0	0	0	0	0
	5:15 PM	0	0	0	71	0	60	111	441	0	0	352	157	1,192	0	0	0	0	0
	5:30 PM	0	0	0	78	0	77	143	401	0	0	329	131	1,159	0	0	0	0	0
	5:45 PM	0	0	0	82	0	65	118	401	0	0	315	144	1,125	0	0	0	0	0
	VOLUMES	0	0	0	574	0	548	981	3,326	0	0	2,632	1,110	9,171	0	0	0	0	0
	APPROACH %	0%	0%	0%	51%	0%	49%	23%	77%	0%	0%	70%	30%						
	APP/DEPART	0	/	2,091	1,122	/	0	4,307	/	3,900	3,742	/	3,180	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	0	272	0	271	527	1,723	0	0	1,338	584	4,715					
	APPROACH %	0%	0%	0%	50%	0%	50%	23%	77%	0%	0%	70%	30%						
	PEAK HR FACTOR		0.000			0.876			0.949			0.912		0.980					
	APP/DEPART	0	/	1,111	543	/	0	2,250	/	1,995	1,922	/	1,609	0					

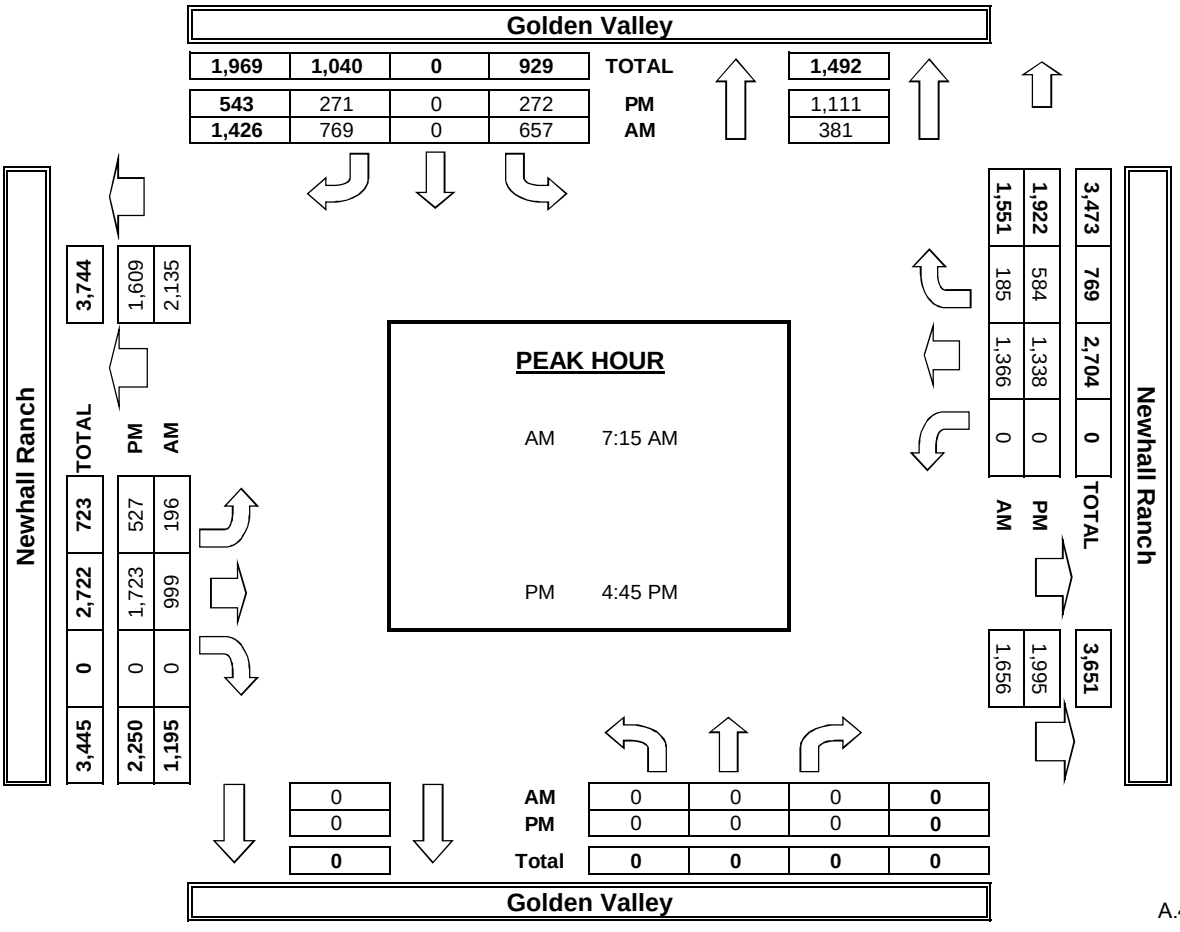


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	3	0	0	0	3	2	0	0	0	2	1	0	0	0	1
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	1	1	0	2	0	0	0	0	0	0	1	1	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	2	1	0	3	0	0	0	0	0	0	2	1	0	3
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Oct 17, 18

LOCATION: Santa Clarita
NORTH & SOUTH: Whites Canyon
EAST & WEST: Soledad Canyon

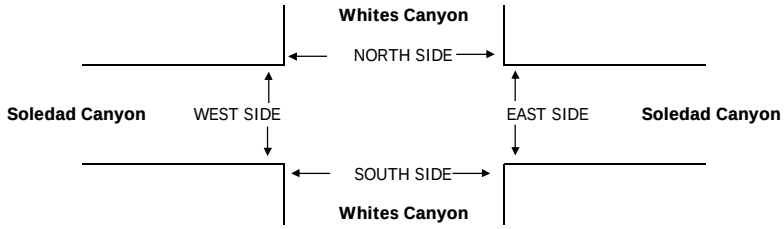
PROJECT #: SC1841
LOCATION #: 20
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

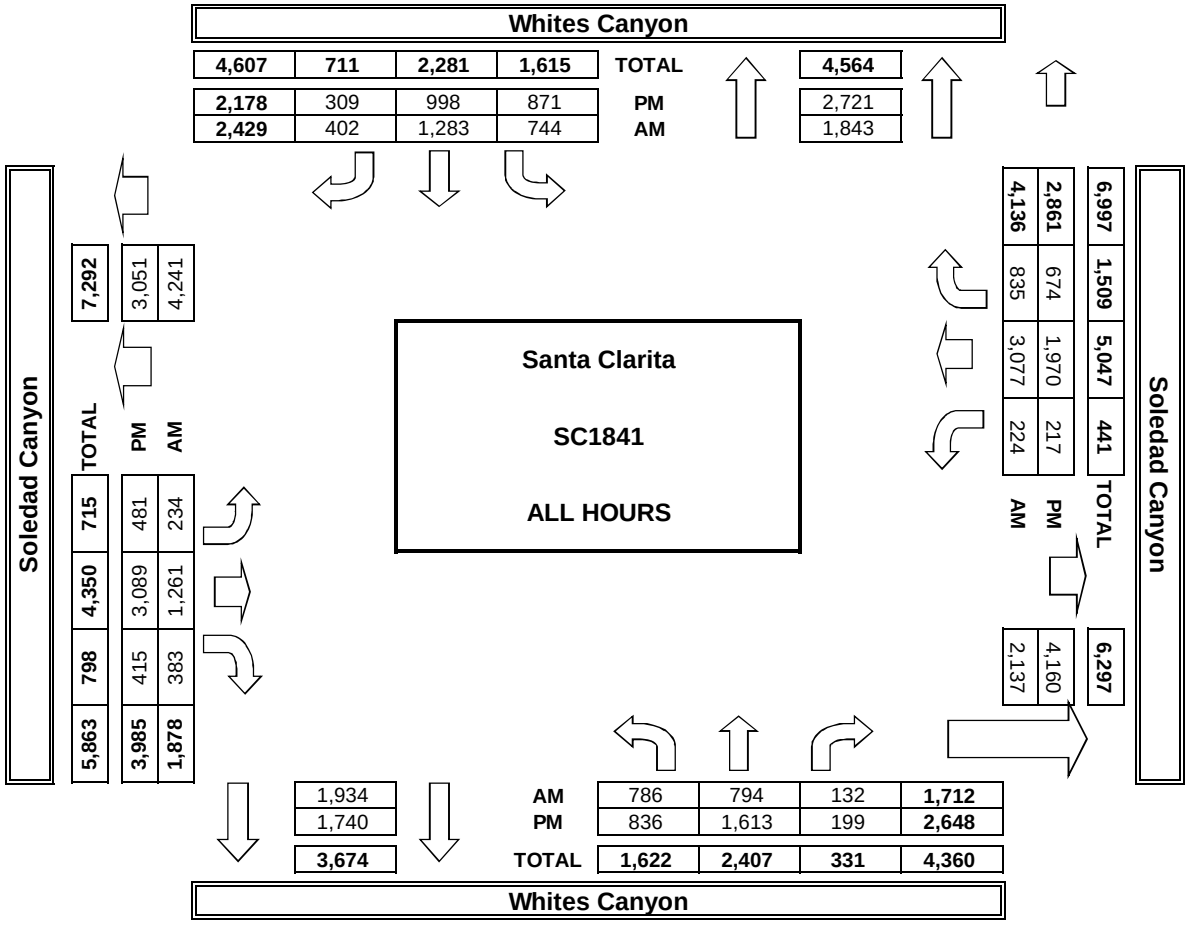
Add U-Turns to Left Turns

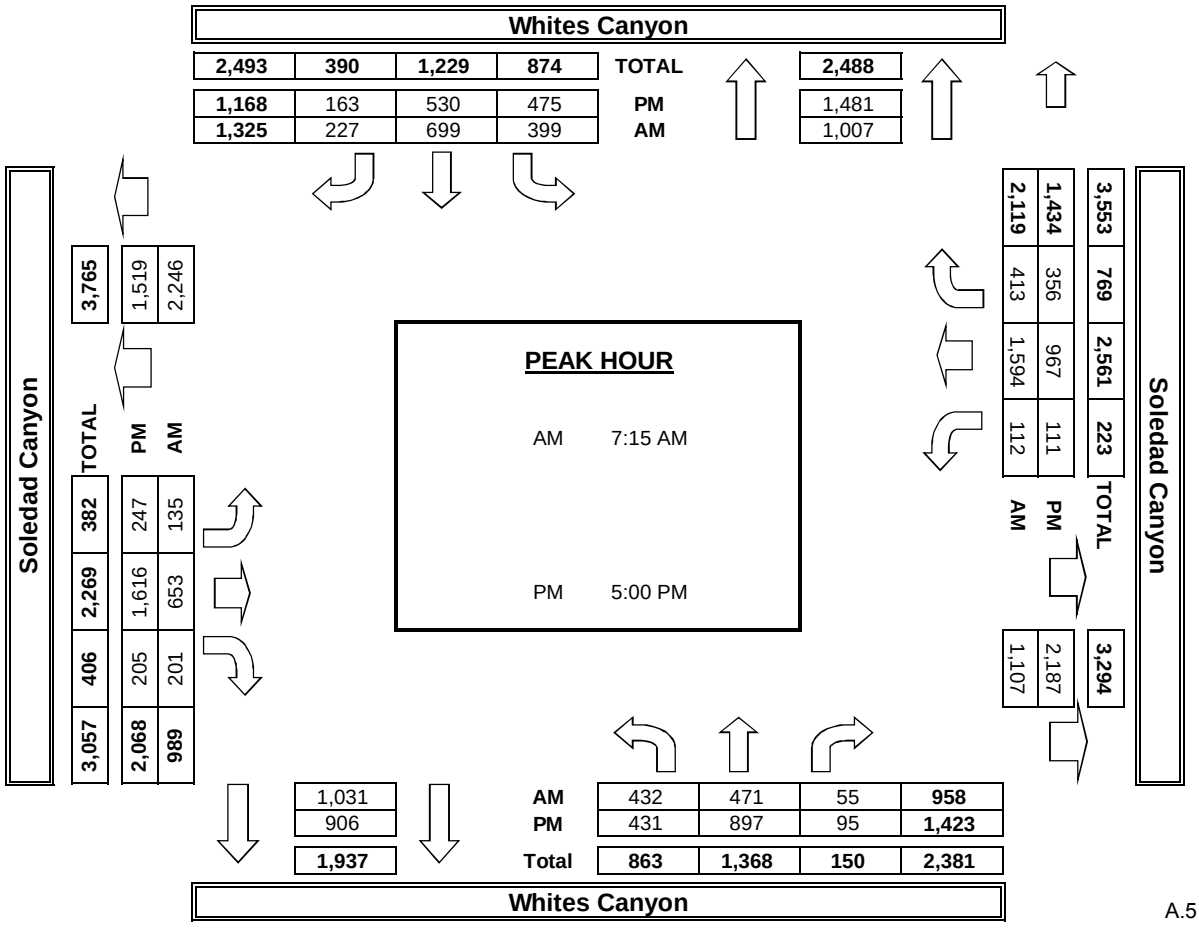
		NORTHBOUND Whites Canyon			SOUTHBOUND Whites Canyon			EASTBOUND Soledad Canyon			WESTBOUND Soledad Canyon				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 3	ER 0	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	87	84	9	65	148	39	26	99	53	20	411	117	1,158	6	0	0	0	6
	7:15 AM	109	97	17	79	159	62	42	132	45	17	451	124	1,334	2	0	2	0	4
	7:30 AM	111	149	14	111	173	79	31	198	52	21	436	116	1,491	2	0	1	0	3
	7:45 AM	106	118	13	125	188	46	33	166	42	37	390	90	1,354	5	0	5	0	10
	8:00 AM	106	107	11	84	179	40	29	157	62	37	317	83	1,212	10	0	4	0	14
	8:15 AM	96	79	21	95	158	39	23	159	48	39	307	103	1,167	4	0	4	0	8
	8:30 AM	101	75	27	98	131	50	28	161	50	35	386	110	1,252	8	0	3	0	11
	8:45 AM	70	85	20	87	147	47	22	189	31	18	379	92	1,187	7	0	1	0	8
	VOLUMES	786	794	132	744	1,283	402	234	1,261	383	224	3,077	835	10,155	44	0	20	0	64
	APPROACH %	46%	46%	8%	31%	53%	17%	12%	67%	20%	5%	74%	20%						
	APP/DEPART	1,712	/	1,843	2,429	/	1,934	1,878	/	2,137	4,136	/	4,241	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	432	471	55	399	699	227	135	653	201	112	1,594	413	5,391					
	APPROACH %	45%	49%	6%	30%	53%	17%	14%	66%	20%	5%	75%	19%						
	PEAK HR FACTOR		0.874			0.913			0.880			0.895		0.904					
	APP/DEPART	958	/	1,007	1,325	/	1,031	989	/	1,107	2,119	/	2,246	0					
PM	4:00 PM	103	187	31	94	125	39	74	348	48	32	276	77	1,434	11	0	11	0	22
	4:15 PM	100	172	13	99	112	34	52	357	56	20	231	71	1,317	18	0	6	0	24
	4:30 PM	100	188	32	92	107	41	54	365	58	19	260	81	1,397	9	0	5	0	14
	4:45 PM	102	169	28	111	124	32	54	403	48	35	236	89	1,431	12	0	6	0	18
	5:00 PM	100	223	31	111	113	33	68	419	56	26	266	100	1,546	16	0	9	0	25
	5:15 PM	106	235	21	121	131	42	68	394	49	20	201	79	1,467	17	0	2	0	19
	5:30 PM	114	219	21	113	139	43	57	384	48	30	247	84	1,499	14	0	3	0	17
	5:45 PM	111	220	22	130	147	45	54	419	52	35	253	93	1,581	14	0	5	1	20
	VOLUMES	836	1,613	199	871	998	309	481	3,089	415	217	1,970	674	11,672	111	0	47	1	159
	APPROACH %	32%	61%	8%	40%	46%	14%	12%	78%	10%	8%	69%	24%						
	APP/DEPART	2,648	/	2,721	2,178	/	1,740	3,985	/	4,160	2,861	/	3,051	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	431	897	95	475	530	163	247	1,616	205	111	967	356	6,093					
	APPROACH %	30%	63%	7%	41%	45%	14%	12%	78%	10%	8%	67%	25%						
	PEAK HR FACTOR		0.983			0.907			0.952			0.915		0.963					
	APP/DEPART	1,423	/	1,481	1,168	/	906	2,068	/	2,187	1,434	/	1,519	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	0	3	1	5	1	0	3	1	5	0	0	0	0	0
	7:15 AM	9	0	2	4	15	9	0	1	4	14	0	0	1	0	1
	7:30 AM	6	1	4	2	13	5	1	4	2	12	1	0	0	0	1
	7:45 AM	1	1	3	4	9	1	1	3	3	8	0	0	0	1	1
	8:00 AM	0	1	0	4	5	0	1	0	4	5	0	0	0	0	0
	8:15 AM	4	5	1	2	12	4	5	1	2	12	0	0	0	0	0
	8:30 AM	5	0	1	1	7	5	0	1	1	7	0	0	0	0	0
	8:45 AM	1	2	4	1	8	1	2	4	1	8	0	0	0	0	0
	TOTAL	27	10	18	19	74	26	10	17	18	71	1	0	1	1	3
	AM BEGIN PEAK HR	7:15 AM					15	3	8	13	39					
PM	4:00 PM	5	4	8	6	23	4	4	8	6	22	1	0	0	0	1
	4:15 PM	7	5	10	0	22	6	5	8	0	19	1	0	2	0	3
	4:30 PM	6	5	5	6	22	6	5	5	5	21	0	0	0	1	1
	4:45 PM	1	1	4	0	6	1	1	4	0	6	0	0	0	0	0
	5:00 PM	4	2	5	3	14	4	1	5	1	11	0	1	0	2	3
	5:15 PM	7	3	8	6	24	6	3	7	4	20	1	0	1	2	4
	5:30 PM	5	4	7	6	22	5	4	7	6	22	0	0	0	0	0
	5:45 PM	7	8	4	4	23	7	7	4	4	22	0	1	0	0	1
	TOTAL	42	32	51	31	156	39	30	48	26	143	3	2	3	5	13
	PM BEGIN PEAK HR	5:00 PM					22	15	23	15	75					

AimTD LLC
TURNING MOVEMENT COUNTS





Appendix B INTERSECTION LOS WORKSHEET

Existing

Intersection						
Int Delay, s/veh	63.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	645	12	41	217	13	230
Future Vol, veh/h	645	12	41	217	13	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	672	13	43	226	14	240

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	424	156	0	0	269	0
Stage 1	156	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 587	890	-	-	1295	-
Stage 1	872	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 580	890	-	-	1295	-
Mov Cap-2 Maneuver	~ 580	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	580	890	1295	-
HCM Lane V/C Ratio	-	-	1.158	0.014	0.01	-
HCM Control Delay (s)	-	-	114	9.1	7.8	0
HCM Lane LOS	-	-	F	A	A	A
HCM 95th %tile Q(veh)	-	-	22.6	0	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	8					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	161	506	18	81	25
Future Vol, veh/h	5	161	506	18	81	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	187	588	21	94	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1306	109	123	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	1197	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	176	945	1464	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	945	1464	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	286	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10.7	8.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1464	-	105	945	-	-
HCM Lane V/C Ratio	0.402	-	0.055	0.198	-	-
HCM Control Delay (s)	9.1	0	41.3	9.7	-	-
HCM Lane LOS	A	A	E	A	-	-
HCM 95th %tile Q(veh)	2	-	0.2	0.7	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	164	520	465	135	105
Future Volume (vph)	58	164	520	465	135	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1744	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1744	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			98			117
Link Speed (mph)		45	50		25	
Link Distance (ft)		387	310		132	
Travel Time (s)		5.9	4.2		3.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	182	1095	0	150	117
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	12.0	74.0	62.0		16.0	16.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	7.2	62.2	53.3		11.3	11.3
Actuated g/C Ratio	0.09	0.74	0.64		0.13	0.13
v/c Ratio	0.42	0.13	0.96		0.63	0.37
Control Delay	48.9	3.0	33.4		50.7	11.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	48.9	3.0	33.4		50.7	11.4
LOS	D	A	C		D	B
Approach Delay		15.0	33.4		33.5	
Approach LOS		B	C		C	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 83.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 30.6		Intersection LOS: C	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Bouquet Cyn & David

Intersection	
Intersection Delay, s/veh	30.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	147	3	4	524	2	4	5	3	13	24	79
Future Vol, veh/h	19	147	3	4	524	2	4	5	3	13	24	79
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	177	4	5	631	2	5	6	4	16	29	95
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	10.5	41.5	9.9	10.9
HCM LOS	B	E	A	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	33%	100%	0%	0%	100%	0%	0%	11%
Vol Thru, %	42%	0%	100%	0%	0%	100%	0%	21%
Vol Right, %	25%	0%	0%	100%	0%	0%	100%	68%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	19	147	3	4	524	2	116
LT Vol	4	19	0	0	4	0	0	13
Through Vol	5	0	147	0	0	524	0	24
RT Vol	3	0	0	3	0	0	2	79
Lane Flow Rate	14	23	177	4	5	631	2	140
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.028	0.04	0.281	0.005	0.008	0.93	0.003	0.241
Departure Headway (Hd)	6.954	6.219	5.713	5.005	5.81	5.305	4.599	6.218
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	514	577	631	716	620	688	783	577
Service Time	4.702	3.944	3.438	2.73	3.51	3.005	2.299	3.956
HCM Lane V/C Ratio	0.027	0.04	0.281	0.006	0.008	0.917	0.003	0.243
HCM Control Delay	9.9	9.2	10.7	7.8	8.6	41.9	7.3	10.9
HCM Lane LOS	A	A	B	A	A	E	A	B
HCM 95th-tile Q	0.1	0.1	1.1	0	0	12.7	0	0.9

Intersection						
Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	188	63	1	576	138	1
Future Vol, veh/h	188	63	1	576	138	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	221	74	1	678	162	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	295	0	901	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	680	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1266	-	309	819
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1266	-	309	819
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	503	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	-	-	1266	-
HCM Lane V/C Ratio	0.528	-	-	0.001	-
HCM Control Delay (s)	28.9	-	-	7.8	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	2.9	-	-	0	-

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	84	11	23	111	6	21	3	58	21	18	4
Future Vol, veh/h	1	84	11	23	111	6	21	3	58	21	18	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	90	12	25	119	6	23	3	62	23	19	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	8.3	7.7	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	1%	16%	49%
Vol Thru, %	4%	88%	79%	42%
Vol Right, %	71%	11%	4%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	96	140	43
LT Vol	21	1	23	21
Through Vol	3	84	111	18
RT Vol	58	11	6	4
Lane Flow Rate	88	103	151	46
Geometry Grp	1	1	1	1
Degree of Util (X)	0.103	0.124	0.182	0.06
Departure Headway (Hd)	4.187	4.332	4.355	4.645
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	858	830	826	773
Service Time	2.202	2.348	2.369	2.662
HCM Lane V/C Ratio	0.103	0.124	0.183	0.06
HCM Control Delay	7.7	8	8.3	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.4	0.7	0.2

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	156	139	231	638	5
Future Vol, veh/h	6	156	139	231	638	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	168	149	248	686	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1235	689	691	0	-	0
Stage 1	689	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	195	446	904	-	-	-
Stage 1	498	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	446	904	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	580	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	3.7	0
HCM LOS	C		

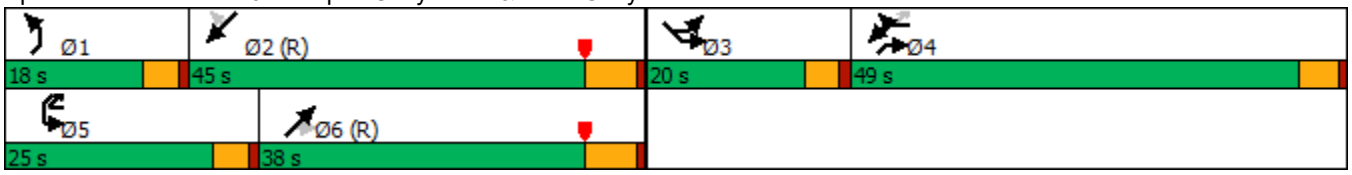
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	904	-	419	-	-
HCM Lane V/C Ratio	0.165	-	0.416	-	-
HCM Control Delay (s)	9.8	-	19.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	2	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	676	4	203	4	11	52	19	209	469	217	547	5
Future Volume (vph)	676	4	203	4	11	52	19	209	469	217	547	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1649	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.989		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1649	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			221		140				510			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	735	4	221	0	73	0	21	227	510	236	595	5
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	49.0	49.0	25.0	20.0	20.0		18.0	38.0	49.0	25.0	45.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	36.8	36.8	63.1		6.0		7.6	52.9	90.5	22.3	71.7	71.7
Actuated g/C Ratio	0.28	0.28	0.48		0.05		0.06	0.40	0.69	0.17	0.54	0.54
v/c Ratio	0.77	0.01	0.25		0.35		0.21	0.16	0.41	0.79	0.31	0.01
Control Delay	58.5	43.2	4.0		4.6		80.5	25.5	8.7	70.8	19.6	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	43.2	4.0		4.6		80.5	25.5	8.7	70.8	19.6	0.0
LOS	E	D	A		A		F	C	A	E	B	A
Approach Delay	45.9				4.6			15.7			34.0	
Approach LOS	D				A			B			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 83 (63%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 32.2		Intersection LOS: C	
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

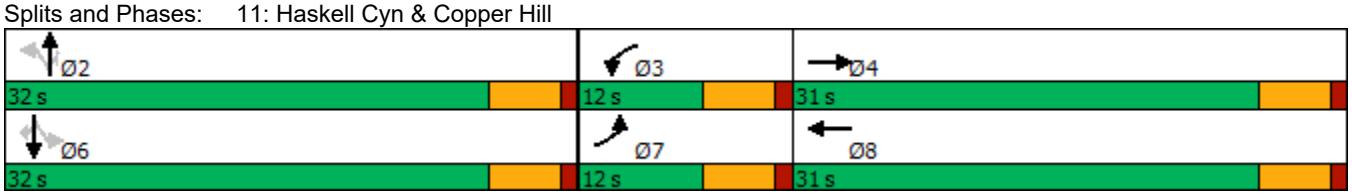


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	225	181	86	775	34	232	92	45	33	168	71
Future Volume (vph)	29	225	181	86	775	34	232	92	45	33	168	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3302	0	1770	3518	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.642			0.692		
Satd. Flow (perm)	1770	3302	0	1770	3518	0	1196	1863	1583	1289	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		197			6				102			102
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	442	0	93	879	0	252	100	49	36	183	77
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	12.0	31.0		12.0	31.0		32.0	32.0	32.0	32.0	32.0	32.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	7.2	16.5		7.2	21.7		27.6	27.6	27.6	27.6	27.6	27.6
Actuated g/C Ratio	0.11	0.26		0.11	0.34		0.43	0.43	0.43	0.43	0.43	0.43
v/c Ratio	0.16	0.44		0.47	0.73		0.49	0.12	0.07	0.06	0.23	0.10
Control Delay	31.8	12.0		38.9	22.9		20.0	14.5	0.7	14.7	15.0	2.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	12.0		38.9	22.9		20.0	14.5	0.7	14.7	15.0	2.8
LOS	C	B		D	C		B	B	A	B	B	A
Approach Delay		13.4			24.4			16.3			11.8	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Haskell Cyn & Copper Hill

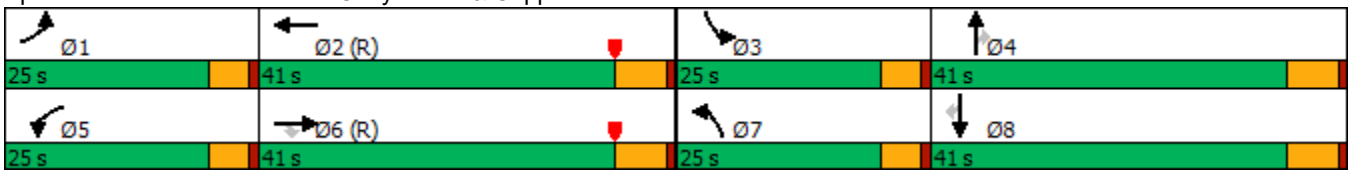


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	360	134	229	1109	49	229	137	109	111	247	346
Future Volume (vph)	147	360	134	229	1109	49	229	137	109	111	247	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	5055	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5055	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146		5				118			266
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	391	146	249	1258	0	249	149	118	121	268	376
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	25.0	41.0	41.0	25.0	41.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	12.4	54.4	54.4	15.9	57.9		14.4	31.3	31.3	14.4	31.4	31.4
Actuated g/C Ratio	0.09	0.41	0.41	0.12	0.44		0.11	0.24	0.24	0.11	0.24	0.24
v/c Ratio	0.50	0.27	0.20	0.60	0.57		0.67	0.34	0.25	0.63	0.61	0.65
Control Delay	61.1	37.9	16.6	61.1	30.2		65.3	42.7	7.7	70.5	50.1	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	37.9	16.6	61.1	30.2		65.3	42.7	7.7	70.5	50.1	18.0
LOS	E	D	B	E	C		E	D	A	E	D	B
Approach Delay		38.8			35.3			45.6			37.6	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive

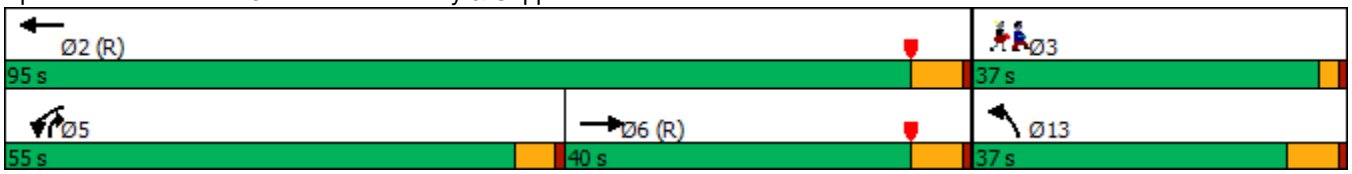


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	483	462	776	1640	286	282	
Future Volume (vph)	483	462	776	1640	286	282	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	310		230	0	
Storage Lanes		0	2		1	2	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3281	0	3433	3539	3433	2787	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3281	0	3433	3539	3433	2787	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	179					307	
Link Speed (mph)	50			50	50		
Link Distance (ft)	1501			578	607		
Travel Time (s)	20.5			7.9	8.3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1027	0	843	1783	311	307	
Turn Type	NA		Prot	NA	Prot	Over	
Protected Phases	6		5	2	13	5	3
Permitted Phases							
Total Split (s)	40.0		55.0	95.0	37.0	55.0	37.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0	
Act Effct Green (s)	59.7		41.1	104.7	19.3	41.1	
Actuated g/C Ratio	0.45		0.31	0.79	0.15	0.31	
v/c Ratio	0.65		0.79	0.64	0.62	0.28	
Control Delay	15.1		31.5	13.4	58.2	3.7	
Queue Delay	0.0		0.2	9.7	0.0	0.0	
Total Delay	15.1		31.7	23.1	58.2	3.7	
LOS	B		C	C	E	A	
Approach Delay	15.1			25.9	31.1		
Approach LOS	B			C	C		

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 120 (91%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 24.0 Intersection LOS: C
Intersection Capacity Utilization 68.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: McBean Parkway & Copper Hill Drive

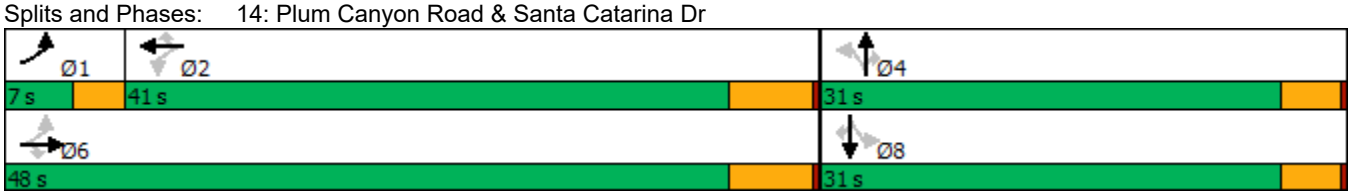


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	358	274	307	531	143	146	51	98	105	151	104
Future Volume (vph)	66	358	274	307	531	143	146	51	98	105	151	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1825	1583
Flt Permitted	0.220			0.522			0.479				0.850	
Satd. Flow (perm)	410	3539	1583	972	1863	1583	892	1863	1583	0	1583	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			298			115			107			84
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	389	298	334	577	155	159	55	107	0	278	113
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	29.8	29.8	29.8	26.4	26.4	26.4	16.9	16.9	16.9		16.9	16.9
Actuated g/C Ratio	0.53	0.53	0.53	0.47	0.47	0.47	0.30	0.30	0.30		0.30	0.30
v/c Ratio	0.24	0.21	0.30	0.73	0.66	0.19	0.59	0.10	0.19		0.58	0.21
Control Delay	8.8	7.2	2.0	25.3	17.0	4.8	30.2	17.7	5.4		24.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	8.8	7.2	2.0	25.3	17.0	4.8	30.2	17.7	5.4		24.6	8.4
LOS	A	A	A	C	B	A	C	B	A		C	A
Approach Delay		5.3			17.8			19.8			19.9	
Approach LOS		A			B			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 56			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

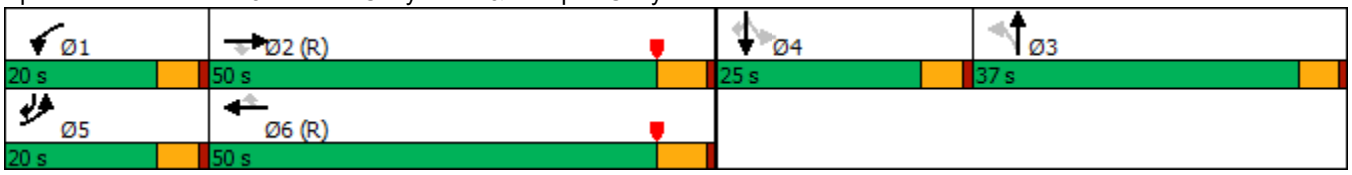


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	517	2	4	1334	234	2	1	10	196	1	328
Future Volume (vph)	172	517	2	4	1334	234	2	1	10	196	1	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1654	0	1681	1615	1504
Flt Permitted	0.950			0.950				0.965		0.190	0.190	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1607	0	336	322	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			153		11				357
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	187	562	2	4	1450	254	0	14	0	106	108	357
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	20.0	50.0	50.0	20.0	50.0	50.0	37.0	37.0		25.0	25.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	12.1	84.0	84.0	5.4	70.0	70.0		17.1		21.0	21.0	34.7
Actuated g/C Ratio	0.09	0.64	0.64	0.04	0.53	0.53		0.13		0.16	0.16	0.26
v/c Ratio	0.60	0.25	0.00	0.06	0.77	0.28		0.06		2.00	2.12	0.54
Control Delay	84.3	5.4	0.0	82.5	21.6	4.5		21.8		538.8	590.0	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	84.3	5.4	0.0	82.5	21.6	4.5		21.8		538.8	590.0	5.1
LOS	F	A	A	F	C	A		C		F	F	A
Approach Delay		25.0			19.2			21.8			214.8	
Approach LOS		C			B			C			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 103 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.12			
Intersection Signal Delay: 57.4		Intersection LOS: E	
Intersection Capacity Utilization 67.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

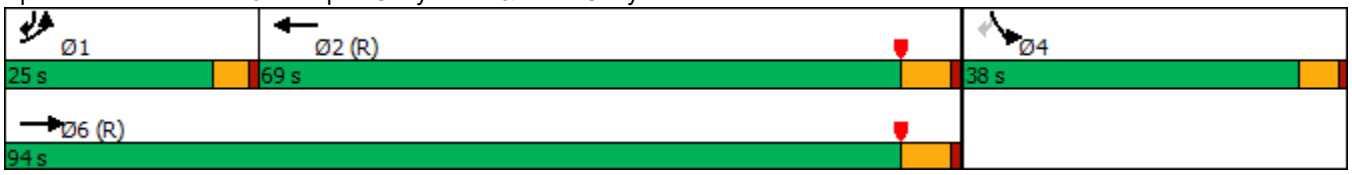


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	431	651	1802	244	202	792
Future Volume (vph)	431	651	1802	244	202	792
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	4994	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	4994	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			26			8
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	468	708	2224	0	220	861
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	25.0	94.0	69.0		38.0	25.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	22.6	100.5	73.9		23.5	50.1
Actuated g/C Ratio	0.17	0.76	0.56		0.18	0.38
v/c Ratio	0.80	0.26	0.79		0.70	0.81
Control Delay	38.9	12.6	9.1		52.5	50.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	38.9	12.6	9.1		52.5	50.2
LOS	D	B	A		D	D
Approach Delay		23.1	9.1		50.7	
Approach LOS		C	A		D	

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 62 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 74.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

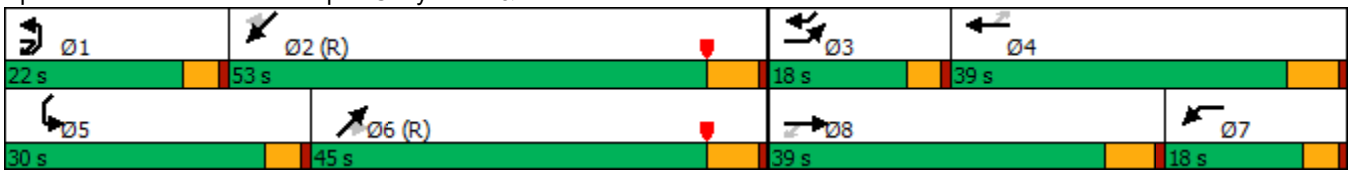


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	224	736	369	446	1469	403	333	717	133	451	2076	457
Future Volume (vph)	224	736	369	446	1469	403	333	717	133	451	2076	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			341			186			112
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	800	401	485	1597	438	362	779	145	490	2257	497
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	18.0	39.0	22.0	18.0	39.0	39.0	22.0	45.0	45.0	30.0	53.0	18.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	10.3	27.3	44.0	21.7	38.7	38.7	16.6	44.8	44.8	22.2	50.4	64.7
Actuated g/C Ratio	0.08	0.21	0.33	0.16	0.29	0.29	0.13	0.34	0.34	0.17	0.38	0.49
v/c Ratio	0.62	0.60	0.67	0.86	0.85	0.62	0.84	0.36	0.22	0.85	0.92	0.60
Control Delay	65.9	49.0	20.3	69.7	49.5	13.7	57.4	54.0	16.7	73.9	33.8	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.6
Total Delay	65.9	49.0	20.3	69.7	49.5	13.7	57.4	54.0	16.7	73.9	35.7	14.3
LOS	E	D	C	E	D	B	E	D	B	E	D	B
Approach Delay		43.9			47.1			50.8			38.2	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 105 (80%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

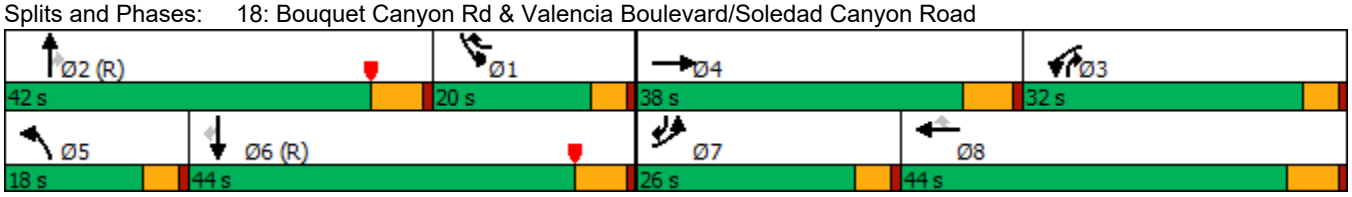


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	286	568	14	480	1447	241	26	611	314	273	1450	1064
Future Volume (vph)	286	568	14	480	1447	241	26	611	314	273	1450	1064
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5065	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5065	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				99			112			407
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	311	632	0	522	1573	262	28	664	341	297	1576	1157
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	26.0	38.0		32.0	44.0	20.0	18.0	42.0	32.0	20.0	44.0	26.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	18.4	24.0		38.0	43.6	59.6	8.1	38.0	80.0	16.0	50.1	72.5
Actuated g/C Ratio	0.14	0.18		0.29	0.33	0.45	0.06	0.29	0.61	0.12	0.38	0.55
v/c Ratio	0.45	0.68		0.36	0.94	0.34	0.26	0.45	0.34	0.71	0.82	0.68
Control Delay	53.8	54.0		38.9	54.5	9.1	64.2	39.7	9.8	41.7	19.9	13.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	54.0		38.9	54.5	9.1	64.2	39.7	9.8	41.7	19.9	13.5
LOS	D	D		D	D	A	E	D	A	D	B	B
Approach Delay		53.9			46.0			30.5			19.6	
Approach LOS		D			D			C			B	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 117 (89%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 34.0	Intersection LOS: C
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

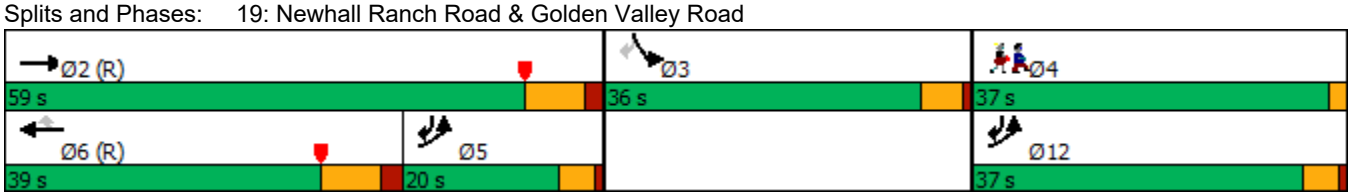


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	196	999	1366	185	657	769			
Future Volume (vph)	196	999	1366	185	657	769			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				92		1			
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	213	1086	1485	201	714	836			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	39.0	39.0	36.0		37.0	20.0	37.0
Total Lost Time (s)		4.0	4.0	8.0	4.0				
Act Effct Green (s)	27.4	77.6	57.6	53.6	31.1	66.9			
Actuated g/C Ratio	0.21	0.59	0.44	0.41	0.24	0.51			
v/c Ratio	0.30	0.36	0.67	0.29	0.88	0.59			
Control Delay	12.8	4.6	28.3	15.6	62.3	24.5			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	12.8	4.6	28.3	15.6	62.3	24.5			
LOS	B	A	C	B	E	C			
Approach Delay		5.9	26.7		41.9				
Approach LOS		A	C		D				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 106 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 60.7% ICU Level of Service B
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

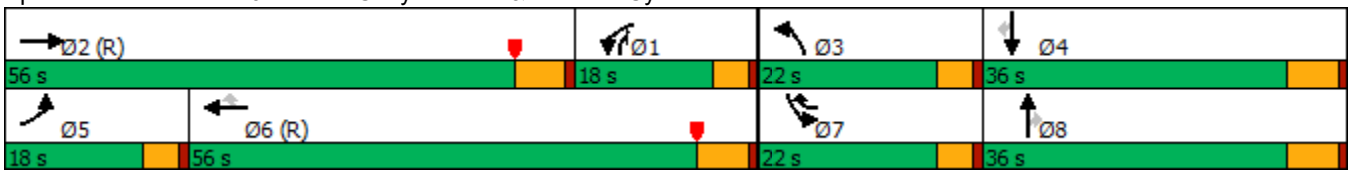


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	653	201	112	1594	413	432	471	55	399	699	227
Future Volume (vph)	135	653	201	112	1594	413	432	471	55	399	699	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	4907	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4907	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		69				100			99			200
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	928	0	122	1733	449	470	512	60	434	760	247
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	18.0	56.0		18.0	56.0	22.0	22.0	36.0	18.0	22.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	9.6	52.1		14.0	56.5	78.3	18.0	32.1	46.1	17.8	31.9	31.9
Actuated g/C Ratio	0.07	0.39		0.11	0.43	0.59	0.14	0.24	0.35	0.13	0.24	0.24
v/c Ratio	0.59	0.47		0.34	1.14	0.46	1.00	0.60	0.10	0.94	0.89	0.46
Control Delay	87.6	6.2		38.2	94.9	10.7	99.1	47.6	1.0	100.2	49.1	10.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.6	6.2		38.2	94.9	10.7	99.1	47.6	1.0	100.2	49.1	10.8
LOS	F	A		D	F	B	F	D	A	F	D	B
Approach Delay		17.3			75.5			68.2			57.9	
Approach LOS		B			E			E			E	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 121 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 59.2		Intersection LOS: E	
Intersection Capacity Utilization 92.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn



Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	195	25	265	726	16	75
Future Vol, veh/h	195	25	265	726	16	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	26	270	741	16	77

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	750	641	0	0	1011	0
Stage 1	641	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	379	475	-	-	686	-
Stage 1	525	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	370	475	-	-	686	-
Mov Cap-2 Maneuver	370	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.1	0	1.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	370	475	686	-
HCM Lane V/C Ratio	-	-	0.538	0.054	0.024	-
HCM Control Delay (s)	-	-	25.5	13	10.4	0
HCM Lane LOS	-	-	D	B	B	A
HCM 95th %tile Q(veh)	-	-	3.1	0.2	0.1	-

Intersection						
Int Delay, s/veh	9.9					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	11	518	140	56	50	13
Future Vol, veh/h	11	518	140	56	50	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	545	147	59	53	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	413	60	67	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	595	1005	1535	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	536	1005	1535	-	-	-
Mov Cap-2 Maneuver	536	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	711	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.7	5.4	0
HCM LOS	B		

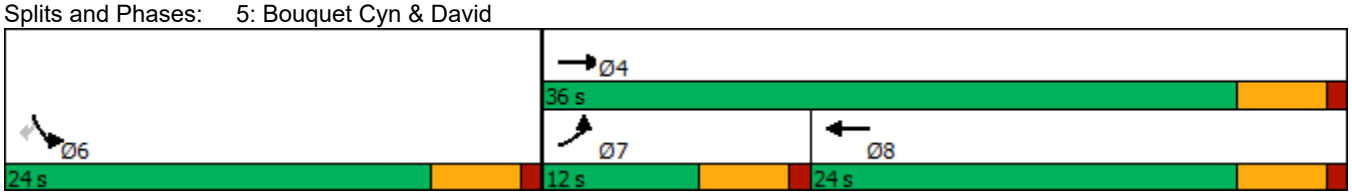
Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1535	-	536	1005	-	-
HCM Lane V/C Ratio	0.096	-	0.022	0.543	-	-
HCM Control Delay (s)	7.6	0	11.9	12.7	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	3.4	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	566	221	108	492	75
Future Volume (vph)	90	566	221	108	492	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1781	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1781	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			43			77
Link Speed (mph)		45	50		25	
Link Distance (ft)		387	310		132	
Travel Time (s)		5.9	4.2		3.6	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	584	339	0	507	77
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	12.0	36.0	24.0		24.0	24.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	7.1	24.1	15.0		19.3	19.3
Actuated g/C Ratio	0.13	0.45	0.28		0.36	0.36
v/c Ratio	0.40	0.70	0.64		0.80	0.12
Control Delay	29.2	16.4	21.7		30.2	4.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	29.2	16.4	21.7		30.2	4.9
LOS	C	B	C		C	A
Approach Delay		18.1	21.7		26.9	
Approach LOS		B	C		C	

Intersection Summary

Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 53.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 22.1		Intersection LOS: C	
Intersection Capacity Utilization 65.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Bouquet Cyn & David



Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	510	40	0	168	11	6	17	0	9	14	35
Future Vol, veh/h	74	510	40	0	168	11	6	17	0	9	14	35
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	573	45	0	189	12	7	19	0	10	16	39
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	21.5	10.2	9.9	9.8
HCM LOS	C	B	A	A

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	26%	100%	0%	0%	0%	0%	0%	16%
Vol Thru, %	74%	0%	100%	0%	100%	100%	0%	24%
Vol Right, %	0%	0%	0%	100%	0%	0%	100%	60%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	74	510	40	0	168	11	58
LT Vol	6	74	0	0	0	0	0	9
Through Vol	17	0	510	0	0	168	0	14
RT Vol	0	0	0	40	0	0	11	35
Lane Flow Rate	26	83	573	45	0	189	12	65
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.049	0.127	0.796	0.054	0	0.286	0.016	0.113
Departure Headway (Hd)	6.881	5.501	4.999	4.295	5.447	5.447	4.743	6.22
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	524	649	722	829	0	655	748	572
Service Time	4.581	3.252	2.749	2.045	3.219	3.219	2.514	4.012
HCM Lane V/C Ratio	0.05	0.128	0.794	0.054	0	0.289	0.016	0.114
HCM Control Delay	9.9	9.1	24.4	7.3	8.2	10.4	7.6	9.8
HCM Lane LOS	A	A	C	A	N	B	A	A
HCM 95th-tile Q	0.2	0.4	8.1	0.2	0	1.2	0	0.4

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	621	82	1	210	71	3
Future Vol, veh/h	621	82	1	210	71	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	661	87	1	223	76	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	748	0	886	661
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	225	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	861	-	315	462
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	861	-	315	462
Mov Cap-2 Maneuver	-	-	-	-	315	-
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	-	-	861	-
HCM Lane V/C Ratio	0.247	-	-	0.001	-
HCM Control Delay (s)	19.9	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	81	13	47	103	17	16	6	34	22	6	4
Future Vol, veh/h	5	81	13	47	103	17	16	6	34	22	6	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	88	14	51	112	18	17	7	37	24	7	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	8.4	7.7	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	5%	28%	69%
Vol Thru, %	11%	82%	62%	19%
Vol Right, %	61%	13%	10%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	99	167	32
LT Vol	16	5	47	22
Through Vol	6	81	103	6
RT Vol	34	13	17	4
Lane Flow Rate	61	108	182	35
Geometry Grp	1	1	1	1
Degree of Util (X)	0.073	0.128	0.211	0.045
Departure Headway (Hd)	4.31	4.273	4.178	4.708
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	835	843	846	764
Service Time	2.316	2.281	2.272	2.716
HCM Lane V/C Ratio	0.073	0.128	0.215	0.046
HCM Control Delay	7.7	7.9	8.4	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0.8	0.1

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	133	153	685	306	10
Future Vol, veh/h	5	133	153	685	306	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	141	163	729	326	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1387	332	337	0	-	0
Stage 1	332	-	-	-	-	-
Stage 2	1055	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	158	710	1222	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	137	710	1222	-	-	-
Mov Cap-2 Maneuver	137	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	335	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	1.5	0
HCM LOS	B		

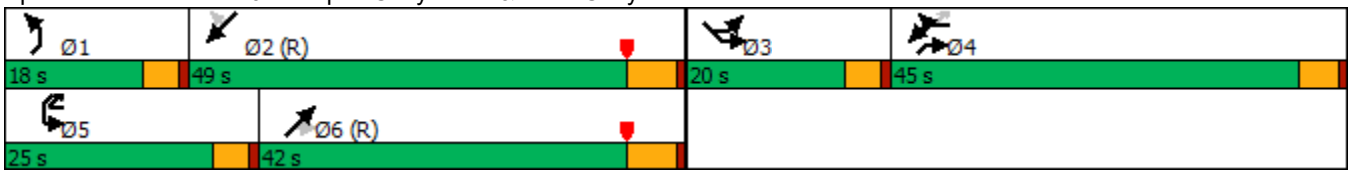
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1222	-	617	-	-
HCM Lane V/C Ratio	0.133	-	0.238	-	-
HCM Control Delay (s)	8.4	-	12.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.9	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	568	14	268	3	12	26	47	628	616	202	305	8
Future Volume (vph)	568	14	268	3	12	26	47	628	616	202	305	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1672	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.982		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1672	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			291		140				558			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	617	15	291	0	44	0	51	683	670	220	332	9
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	45.0	45.0	25.0	20.0	20.0		18.0	42.0	45.0	25.0	49.0	49.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	32.5	32.5	57.3		6.0		9.7	58.7	92.0	20.8	71.9	71.9
Actuated g/C Ratio	0.25	0.25	0.43		0.05		0.07	0.44	0.70	0.16	0.54	0.54
v/c Ratio	0.73	0.04	0.34		0.21		0.40	0.43	0.53	0.79	0.17	0.01
Control Delay	44.3	30.7	9.5		2.3		65.6	30.4	9.0	73.0	17.9	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	30.7	9.5		2.3		65.6	30.4	9.0	73.0	17.9	0.0
LOS	D	C	A		A		E	C	A	E	B	A
Approach Delay	33.1				2.3			21.5			39.3	
Approach LOS	C				A			C			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 50 (38%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 61.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

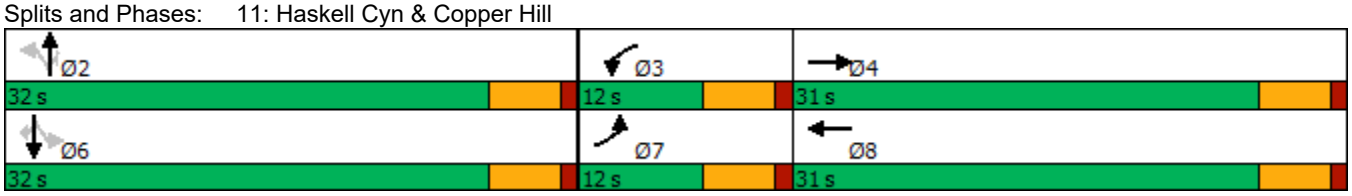


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	701	239	80	239	21	202	136	90	34	125	37
Future Volume (vph)	45	701	239	80	239	21	202	136	90	34	125	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3405	0	1770	3497	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.675			0.668		
Satd. Flow (perm)	1770	3405	0	1770	3497	0	1257	1863	1583	1244	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		69			13				102			102
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	959	0	82	265	0	206	139	92	35	128	38
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	12.0	31.0		12.0	31.0		32.0	32.0	32.0	32.0	32.0	32.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	7.1	23.1		7.1	25.5		27.5	27.5	27.5	27.5	27.5	27.5
Actuated g/C Ratio	0.10	0.33		0.10	0.36		0.39	0.39	0.39	0.39	0.39	0.39
v/c Ratio	0.26	0.82		0.46	0.21		0.42	0.19	0.13	0.07	0.17	0.06
Control Delay	35.5	26.8		40.9	15.8		21.0	17.2	4.0	16.4	17.1	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	26.8		40.9	15.8		21.0	17.2	4.0	16.4	17.1	0.2
LOS	D	C		D	B		C	B	A	B	B	A
Approach Delay		27.2			21.7			16.2			13.8	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 69.9			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Haskell Cyn & Copper Hill

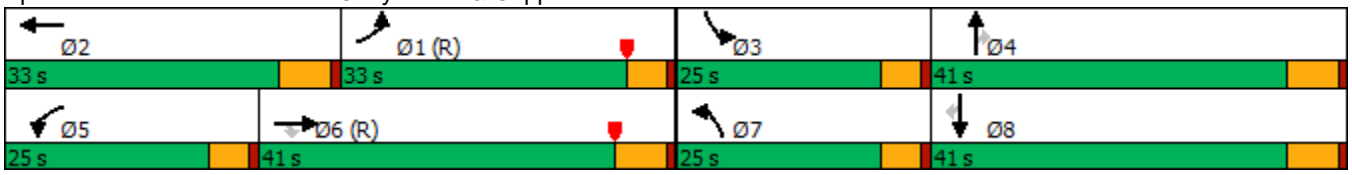


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	366	1099	194	140	421	58	186	266	211	66	185	166
Future Volume (vph)	366	1099	194	140	421	58	186	266	211	66	185	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	4994	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	4994	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			114		17				229			170
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	398	1195	211	152	521	0	202	289	229	72	201	180
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	33.0	41.0	41.0	25.0	33.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	45.8	59.5	59.5	13.0	26.7		13.1	34.3	34.3	12.4	30.4	30.4
Actuated g/C Ratio	0.35	0.45	0.45	0.10	0.20		0.10	0.26	0.26	0.09	0.23	0.23
v/c Ratio	0.33	0.75	0.27	0.45	0.51		0.59	0.60	0.39	0.44	0.47	0.36
Control Delay	40.2	37.2	21.1	60.3	46.7		64.2	48.2	6.5	65.0	46.3	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	37.2	21.1	60.3	46.7		64.2	48.2	6.5	65.0	46.3	8.6
LOS	D	D	C	E	D		E	D	A	E	D	A
Approach Delay		36.0			49.7			39.4			34.3	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 22 (17%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 39.0	Intersection LOS: D
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3	Ø14
Lane Configurations								
Traffic Volume (vph)	1548	229	319	505	310	749		
Future Volume (vph)	1548	229	319	505	310	749		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Storage Length (ft)		0	310		230	0		
Storage Lanes		0	2		1	2		
Taper Length (ft)			25		25			
Satd. Flow (prot)	3472	0	3433	3539	3433	2787		
Flt Permitted			0.950		0.950			
Satd. Flow (perm)	3472	0	3433	3539	3433	2787		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)	15					766		
Link Speed (mph)	50			50	50			
Link Distance (ft)	1501			578	607			
Travel Time (s)	20.5			7.9	8.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	1932	0	347	549	337	814		
Turn Type	NA		Prot	NA	Prot	pt+ov		
Protected Phases	6		5	2	13	5 14	3	14
Permitted Phases						14		
Total Split (s)	56.0		30.0	86.0	46.0		36.0	10.0
Total Lost Time (s)	4.0		4.0	4.0	4.0			
Act Effct Green (s)	79.8		21.3	105.1	18.9	44.2		
Actuated g/C Ratio	0.60		0.16	0.80	0.14	0.33		
v/c Ratio	0.92		0.63	0.19	0.69	0.56		
Control Delay	28.8		86.3	0.6	60.9	4.3		
Queue Delay	0.1		0.0	0.0	0.0	0.1		
Total Delay	28.9		86.3	0.6	60.9	4.4		
LOS	C		F	A	E	A		
Approach Delay	28.9			33.8	20.9			
Approach LOS	C			C	C			

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 100 (76%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 27.7		Intersection LOS: C	
Intersection Capacity Utilization 83.0%		ICU Level of Service E	
Analysis Period (min) 15			

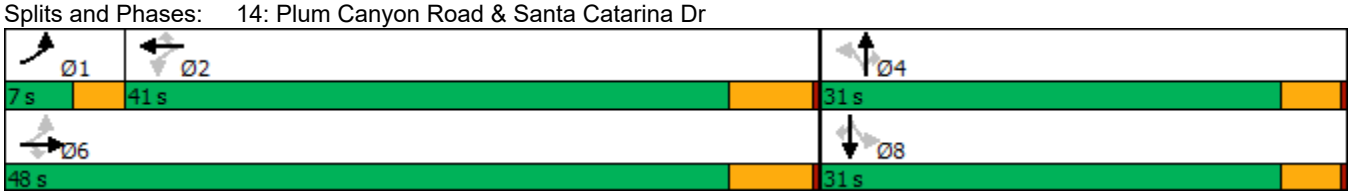
Splits and Phases: 13: McBean Parkway & Copperhill Drive

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	492	171	134	535	13	293	91	276	26	42	39
Future Volume (vph)	31	492	171	134	535	13	293	91	276	26	42	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1827	1583
Flt Permitted	0.187			0.453			0.709				0.899	
Satd. Flow (perm)	348	3539	1583	844	1863	1583	1321	1863	1583	0	1675	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			55			300			76
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	535	186	146	582	14	318	99	300	0	74	42
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	27.0	27.0	27.0	24.9	24.9	24.9	19.6	19.6	19.6		19.6	19.6
Actuated g/C Ratio	0.48	0.48	0.48	0.45	0.45	0.45	0.35	0.35	0.35		0.35	0.35
v/c Ratio	0.13	0.31	0.22	0.39	0.70	0.02	0.68	0.15	0.40		0.13	0.07
Control Delay	9.2	9.3	2.2	16.1	19.0	0.1	26.9	15.9	4.3		15.9	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	9.2	9.3	2.2	16.1	19.0	0.1	26.9	15.9	4.3		15.9	2.0
LOS	A	A	A	B	B	A	C	B	A		B	A
Approach Delay		7.5			18.1			15.9			10.8	
Approach LOS		A			B			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 55.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

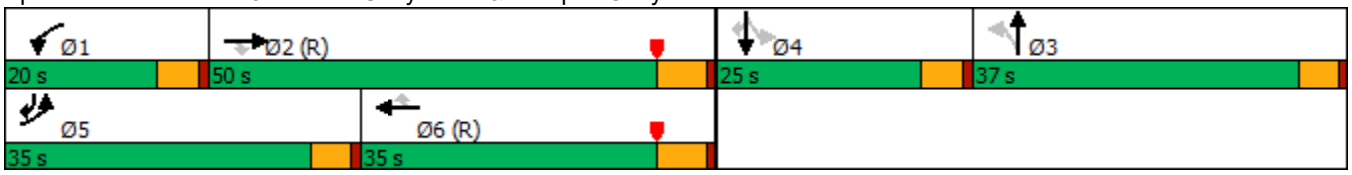


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	1281	22	15	833	182	9	19	10	223	10	253
Future Volume (vph)	389	1281	22	15	833	182	9	19	10	223	10	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1776	0	1681	1621	1504
Flt Permitted	0.950			0.950				0.919		0.253	0.269	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1652	0	448	456	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			163		11				275
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	423	1392	24	16	905	198	0	42	0	121	132	275
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	35.0	50.0	50.0	20.0	35.0	35.0	37.0	37.0		25.0	25.0	35.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	21.2	78.7	78.7	6.3	58.1	58.1		17.8		21.0	21.0	43.0
Actuated g/C Ratio	0.16	0.60	0.60	0.05	0.44	0.44		0.13		0.16	0.16	0.33
v/c Ratio	0.77	0.66	0.02	0.19	0.58	0.25		0.18		1.70	1.83	0.41
Control Delay	77.4	17.3	0.0	85.1	21.6	9.7		36.5		403.1	455.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	77.4	17.3	0.0	85.1	21.6	9.7		36.5		403.1	455.0	3.5
LOS	E	B	A	F	C	A		D		F	F	A
Approach Delay		30.9			20.4			36.5			208.0	
Approach LOS		C			C			D			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.83			
Intersection Signal Delay: 54.1		Intersection LOS: D	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

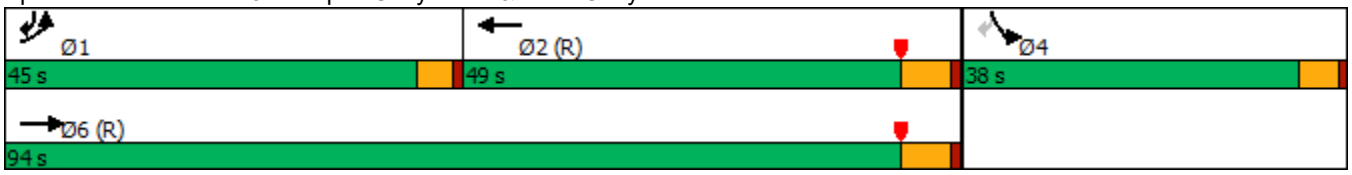


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	953	1906	1078	121	391	569
Future Volume (vph)	953	1906	1078	121	391	569
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	5009	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	5009	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			16			17
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1036	2072	1304	0	425	618
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	45.0	94.0	49.0		38.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	40.9	90.5	45.6		33.5	78.4
Actuated g/C Ratio	0.31	0.69	0.35		0.25	0.59
v/c Ratio	0.97	0.85	0.75		0.95	0.37
Control Delay	44.4	27.2	28.4		65.4	7.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	44.4	27.2	28.4		65.4	7.6
LOS	D	C	C		E	A
Approach Delay		32.9	28.4		31.1	
Approach LOS		C	C		C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 12 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 31.5		Intersection LOS: C	
Intersection Capacity Utilization 82.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

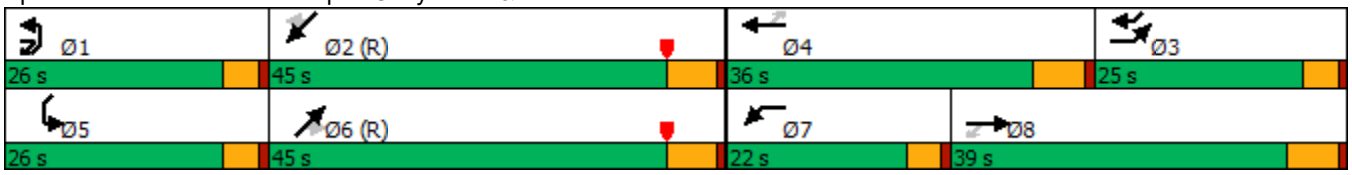


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	841	1575	401	369	936	432	497	1872	369	403	1117	263
Future Volume (vph)	841	1575	401	369	936	432	497	1872	369	403	1117	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			295			295			99
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	914	1712	436	401	1017	470	540	2035	401	438	1214	286
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	25.0	39.0	26.0	22.0	36.0	36.0	26.0	45.0	45.0	26.0	45.0	25.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	22.6	35.6	61.4	17.4	30.4	30.4	21.8	43.2	43.2	19.8	41.2	63.8
Actuated g/C Ratio	0.17	0.27	0.47	0.13	0.23	0.23	0.17	0.33	0.33	0.15	0.31	0.48
v/c Ratio	1.07	0.99	0.57	0.89	0.69	0.80	0.95	0.97	0.56	0.85	0.61	0.35
Control Delay	103.0	67.3	25.2	78.4	49.0	28.0	77.9	43.4	8.7	87.9	32.4	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.0	67.3	25.2	78.4	49.0	28.0	77.9	43.4	8.7	87.9	32.4	7.8
LOS	F	E	C	E	D	C	E	D	A	F	C	A
Approach Delay		71.9			50.0			45.0			41.3	
Approach LOS		E			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 55 (42%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 53.6	Intersection LOS: D
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

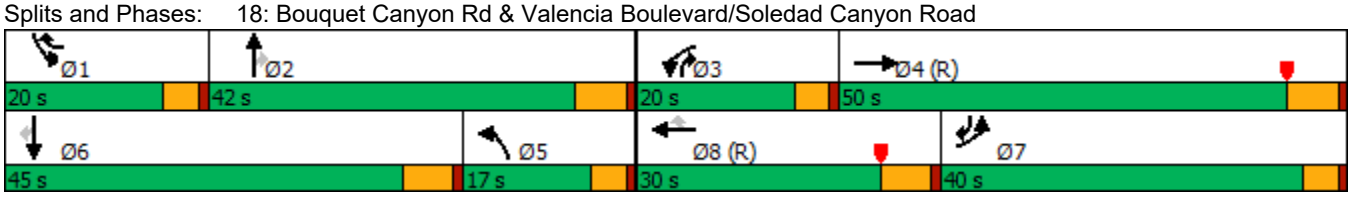


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1188	1380	20	348	826	263	24	1290	496	290	885	679
Future Volume (vph)	1188	1380	20	348	826	263	24	1290	496	290	885	679
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				124			112			497
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1291	1522	0	378	898	286	26	1402	539	315	962	738
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	40.0	50.0		20.0	30.0	20.0	17.0	42.0	20.0	20.0	45.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	36.0	46.9		15.1	26.0	41.5	13.1	38.5	57.6	15.5	45.1	85.1
Actuated g/C Ratio	0.27	0.36		0.11	0.20	0.31	0.10	0.29	0.44	0.12	0.34	0.64
v/c Ratio	0.95	0.84		0.66	0.90	0.49	0.15	0.95	0.71	0.78	0.55	0.37
Control Delay	62.1	44.7		61.9	64.2	13.1	54.2	59.5	29.9	63.9	50.1	10.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	44.7		61.9	64.2	13.1	54.2	59.5	29.9	63.9	50.1	10.4
LOS	E	D		E	E	B	D	E	C	E	D	B
Approach Delay		52.7			54.3			51.3			37.7	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 51 (39%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 49.0 Intersection LOS: D
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

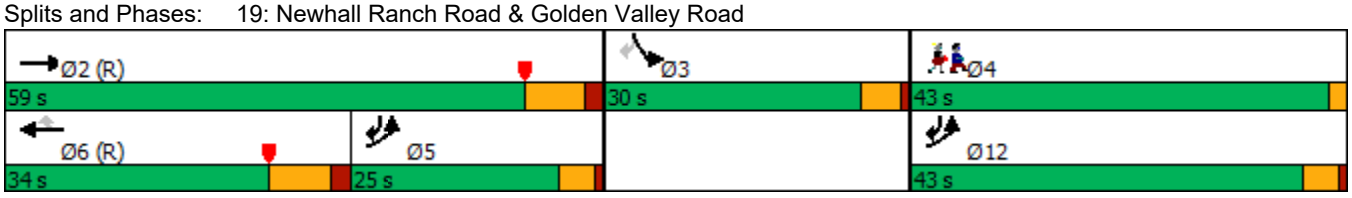


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	527	1723	1338	584	272	271			
Future Volume (vph)	527	1723	1338	584	272	271			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				294					
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	573	1873	1454	635	296	295			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	34.0	34.0	30.0		43.0	25.0	43.0
Total Lost Time (s)		4.0	4.0	4.0	4.0				
Act Effct Green (s)	33.0	89.5	65.3	65.3	17.7	59.2			
Actuated g/C Ratio	0.25	0.68	0.49	0.49	0.13	0.45			
v/c Ratio	0.67	0.54	0.58	0.68	0.64	0.24			
Control Delay	18.4	13.7	24.7	17.8	60.6	22.0			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	18.4	13.7	24.7	17.8	60.6	22.0			
LOS	B	B	C	B	E	C			
Approach Delay		14.8	22.6		41.4				
Approach LOS		B	C		D				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 79 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 58.6% ICU Level of Service B
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

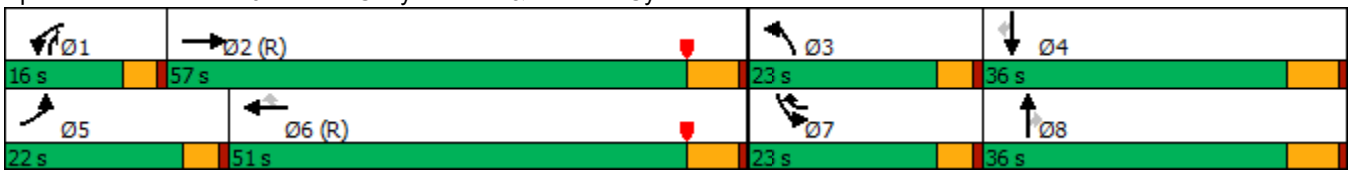


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	1616	205	111	967	356	431	897	95	475	530	163
Future Volume (vph)	247	1616	205	111	967	356	431	897	95	475	530	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	4999	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4999	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				99			99			177
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	1980	0	121	1051	387	468	975	103	516	576	177
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	22.0	57.0		16.0	51.0	23.0	23.0	36.0	16.0	23.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	14.1	56.4		8.6	50.9	73.9	18.9	32.0	44.6	19.0	32.1	32.1
Actuated g/C Ratio	0.11	0.43		0.07	0.39	0.56	0.14	0.24	0.34	0.14	0.24	0.24
v/c Ratio	0.73	0.92		0.55	0.77	0.42	0.95	1.14	0.17	1.04	0.67	0.34
Control Delay	83.8	22.1		87.3	21.1	2.8	85.9	121.0	6.6	115.8	37.1	4.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	22.1		87.3	21.1	2.8	85.9	121.0	6.6	115.8	37.1	4.3
LOS	F	C		F	C	A	F	F	A	F	D	A
Approach Delay		29.4			21.7			102.8			64.6	
Approach LOS		C			C			F			E	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 14 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 51.5		Intersection LOS: D	
Intersection Capacity Utilization 90.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn



Exiting Plus Project

Intersection						
Int Delay, s/veh	65.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	645	12	43	219	13	230
Future Vol, veh/h	645	12	43	219	13	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	672	13	45	228	14	240

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	427	159	0	0	273	0
Stage 1	159	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 584	886	-	-	1290	-
Stage 1	870	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 576	886	-	-	1290	-
Mov Cap-2 Maneuver	~ 576	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	115.1	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	576	886	1290	-
HCM Lane V/C Ratio	-	-	1.166	0.014	0.01	-
HCM Control Delay (s)	-	-	117.1	9.1	7.8	0
HCM Lane LOS	-	-	F	A	A	A
HCM 95th %tile Q(veh)	-	-	23	0	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	141	36	241	655	1
Future Vol, veh/h	5	141	36	241	655	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	153	39	262	712	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	922	357	713	0	-	0
Stage 1	713	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	269	639	883	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	806	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	257	639	883	-	-	-
Mov Cap-2 Maneuver	257	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	806	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.6	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	883	-	257	639	-	-
HCM Lane V/C Ratio	0.044	-	0.021	0.24	-	-
HCM Control Delay (s)	9.3	-	19.3	12.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.9	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	12	159	140	265	784	29
Future Vol, veh/h	12	159	140	265	784	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	173	152	288	852	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1316	442	884	0	-	0
Stage 1	868	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	149	563	761	-	-	-
Stage 1	371	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	119	563	761	-	-	-
Mov Cap-2 Maneuver	119	-	-	-	-	-
Stage 1	297	-	-	-	-	-
Stage 2	611	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	15.9	3.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	761	-	119	563	-	-
HCM Lane V/C Ratio	0.2	-	0.11	0.307	-	-
HCM Control Delay (s)	10.9	-	38.9	14.2	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.7	-	0.4	1.3	-	-

Intersection						
Int Delay, s/veh	8.1					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	162	512	18	81	25
Future Vol, veh/h	5	162	512	18	81	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	188	595	21	94	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1320	109	123	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	1211	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	173	945	1464	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	282	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	102	945	1464	-	-	-
Mov Cap-2 Maneuver	102	-	-	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	282	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10.8	8.8	0
HCM LOS	B		

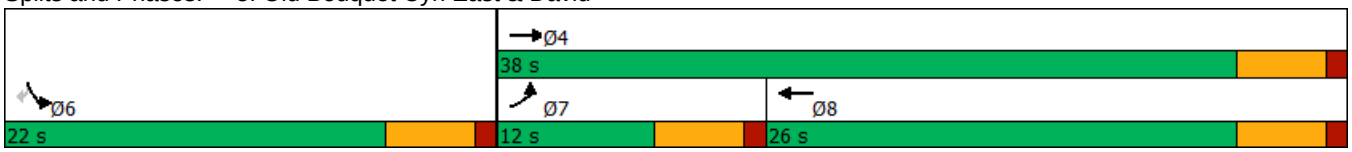
Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1464	-	102	945	-	-
HCM Lane V/C Ratio	0.407	-	0.057	0.199	-	-
HCM Control Delay (s)	9.1	0	42.4	9.8	-	-
HCM Lane LOS	A	A	E	A	-	-
HCM 95th %tile Q(veh)	2	-	0.2	0.7	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	10	10	530	241	10
Future Volume (vph)	10	10	10	530	241	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1615	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1615	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			589			11
Link Speed (mph)		50	50		25	
Link Distance (ft)		579	310		132	
Travel Time (s)		7.9	4.2		3.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	11	600	0	268	11
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	12.0	38.0	26.0		22.0	22.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	7.4	11.4	9.9		17.9	17.9
Actuated g/C Ratio	0.19	0.29	0.25		0.45	0.45
v/c Ratio	0.03	0.02	0.71		0.34	0.02
Control Delay	18.5	8.2	7.1		11.6	7.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	18.5	8.2	7.1		11.6	7.4
LOS	B	A	A		B	A
Approach Delay		13.3	7.1		11.5	
Approach LOS		B	A		B	

Intersection Summary

Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 39.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 55.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Old Bouquet Cyn East & David



Intersection	
Intersection Delay, s/veh	32
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	148	3	4	530	2	4	5	3	13	24	79
Future Vol, veh/h	19	148	3	4	530	2	4	5	3	13	24	79
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	178	4	5	639	2	5	6	4	16	29	95
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	10.5	43.8	9.9	11
HCM LOS	B	E	A	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	33%	100%	0%	0%	100%	0%	0%	11%
Vol Thru, %	42%	0%	100%	0%	0%	100%	0%	21%
Vol Right, %	25%	0%	0%	100%	0%	0%	100%	68%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	19	148	3	4	530	2	116
LT Vol	4	19	0	0	4	0	0	13
Through Vol	5	0	148	0	0	530	0	24
RT Vol	3	0	0	3	0	0	2	79
Lane Flow Rate	14	23	178	4	5	639	2	140
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.028	0.04	0.283	0.005	0.008	0.942	0.003	0.242
Departure Headway (Hd)	6.979	6.226	5.721	5.013	5.813	5.309	4.503	6.24
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	512	576	629	714	619	690	782	576
Service Time	4.729	3.956	3.45	2.741	3.513	3.009	2.303	3.979
HCM Lane V/C Ratio	0.027	0.04	0.283	0.006	0.008	0.926	0.003	0.243
HCM Control Delay	9.9	9.2	10.7	7.8	8.6	44.2	7.3	11
HCM Lane LOS	A	A	B	A	A	E	A	B
HCM 95th-tile Q	0.1	0.1	1.2	0	0	13.2	0	0.9

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	189	69	1	582	163	1
Future Vol, veh/h	189	69	1	582	163	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	222	81	1	685	192	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	303	0	909	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	687	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1258	-	305	818
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	499	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1258	-	305	818
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	499	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	34.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	306	-	-	1258	-
HCM Lane V/C Ratio	0.631	-	-	0.001	-
HCM Control Delay (s)	34.9	-	-	7.9	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	4	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	90	11	23	136	6	58	3	21	4	18	21
Future Vol, veh/h	1	90	11	23	136	6	58	3	21	4	18	21
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	97	12	25	146	6	62	3	23	4	19	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.6	8.2	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	1%	14%	9%
Vol Thru, %	4%	88%	82%	42%
Vol Right, %	26%	11%	4%	49%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	102	165	43
LT Vol	58	1	23	4
Through Vol	3	90	136	18
RT Vol	21	11	6	21
Lane Flow Rate	88	110	177	46
Geometry Grp	1	1	1	1
Degree of Util (X)	0.113	0.133	0.216	0.057
Departure Headway (Hd)	4.622	4.377	4.373	4.413
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	777	820	823	812
Service Time	2.644	2.397	2.39	2.436
HCM Lane V/C Ratio	0.113	0.134	0.215	0.057
HCM Control Delay	8.2	8.1	8.6	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.5	0.8	0.2

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	152	163	6	8	6
Future Vol, veh/h	5	152	163	6	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	163	175	6	9	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	368	12	15	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	632	1069	1603	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	563	1069	1603	-	-	-
Mov Cap-2 Maneuver	563	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	709	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	7.3	0
HCM LOS	A		

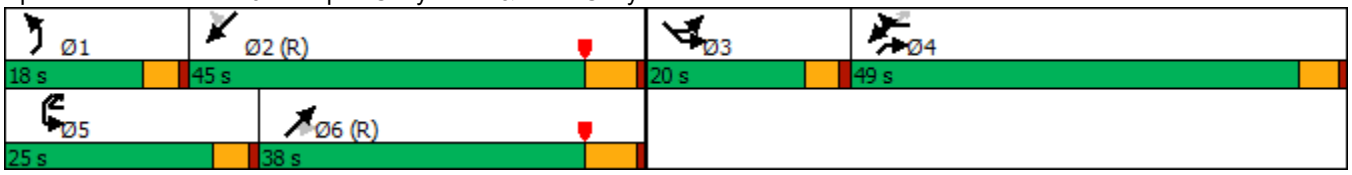
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1603	-	1039	-	-
HCM Lane V/C Ratio	0.109	-	0.162	-	-
HCM Control Delay (s)	7.5	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.6	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	676	4	215	4	11	52	19	234	469	267	652	5
Future Volume (vph)	676	4	215	4	11	52	19	234	469	267	652	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1649	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.989		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1649	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			234		140				510			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	735	4	234	0	73	0	21	254	510	290	709	5
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	49.0	49.0	25.0	20.0	20.0		18.0	38.0	49.0	25.0	45.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	36.8	36.8	70.6		6.0		7.6	45.4	83.1	29.7	71.7	71.7
Actuated g/C Ratio	0.28	0.28	0.53		0.05		0.06	0.34	0.63	0.22	0.54	0.54
v/c Ratio	0.77	0.01	0.25		0.35		0.21	0.21	0.43	0.73	0.37	0.01
Control Delay	58.4	42.8	3.9		4.6		81.3	30.7	9.8	58.9	20.5	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	42.8	3.9		4.6		81.3	30.7	9.8	58.9	20.5	0.0
LOS	E	D	A		A		F	C	A	E	C	A
Approach Delay	45.2				4.6			18.5			31.5	
Approach LOS	D				A			B			C	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 83 (63%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 31.9	Intersection LOS: C
Intersection Capacity Utilization 59.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

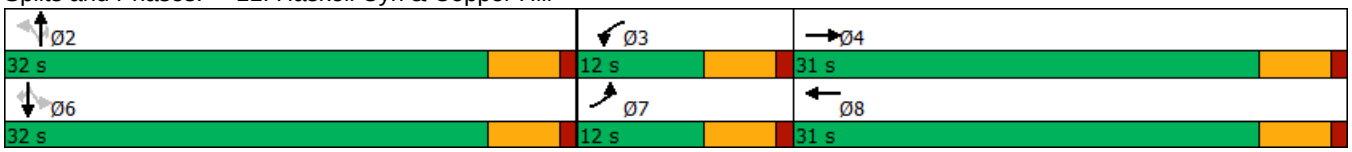


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	232	181	86	804	34	232	92	45	33	168	71
Future Volume (vph)	29	232	181	86	804	34	232	92	45	33	168	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3306	0	1770	3518	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.642			0.692		
Satd. Flow (perm)	1770	3306	0	1770	3518	0	1196	1863	1583	1289	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		197			6				102			102
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	449	0	93	911	0	252	100	49	36	183	77
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	12.0	31.0		12.0	31.0		32.0	32.0	32.0	32.0	32.0	32.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	7.1	16.6		7.1	21.8		27.6	27.6	27.6	27.6	27.6	27.6
Actuated g/C Ratio	0.11	0.26		0.11	0.34		0.43	0.43	0.43	0.43	0.43	0.43
v/c Ratio	0.16	0.45		0.47	0.75		0.49	0.12	0.07	0.06	0.23	0.10
Control Delay	31.7	12.2		39.0	23.6		20.0	14.6	0.7	14.7	15.0	2.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	12.2		39.0	23.6		20.0	14.6	0.7	14.7	15.0	2.8
LOS	C	B		D	C		B	B	A	B	B	A
Approach Delay		13.5			25.0			16.3			11.8	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 11: Haskell Cyn & Copper Hill

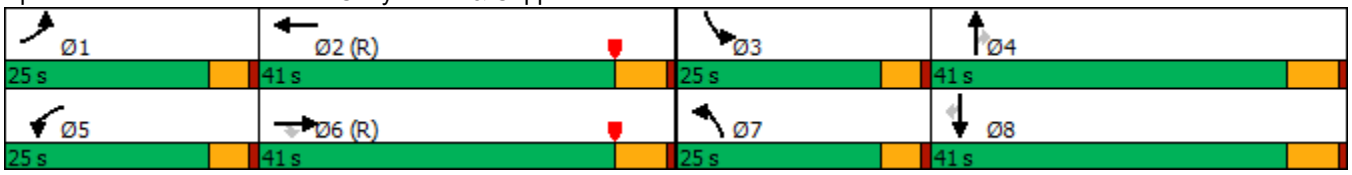


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	365	134	229	1132	49	229	137	109	111	247	346
Future Volume (vph)	147	365	134	229	1132	49	229	137	109	111	247	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	5055	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5055	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146		5				118			266
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	397	146	249	1283	0	249	149	118	121	268	376
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	25.0	41.0	41.0	25.0	41.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	12.4	54.4	54.4	15.9	57.9		14.4	31.3	31.3	14.4	31.4	31.4
Actuated g/C Ratio	0.09	0.41	0.41	0.12	0.44		0.11	0.24	0.24	0.11	0.24	0.24
v/c Ratio	0.50	0.27	0.20	0.60	0.58		0.67	0.34	0.25	0.63	0.61	0.65
Control Delay	61.1	37.9	16.6	61.1	30.4		65.3	42.7	7.7	70.5	50.1	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	37.9	16.6	61.1	30.4		65.3	42.7	7.7	70.5	50.1	18.0
LOS	E	D	B	E	C		E	D	A	E	D	B
Approach Delay		38.8			35.4			45.6			37.6	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 38.1	Intersection LOS: D
Intersection Capacity Utilization 66.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive

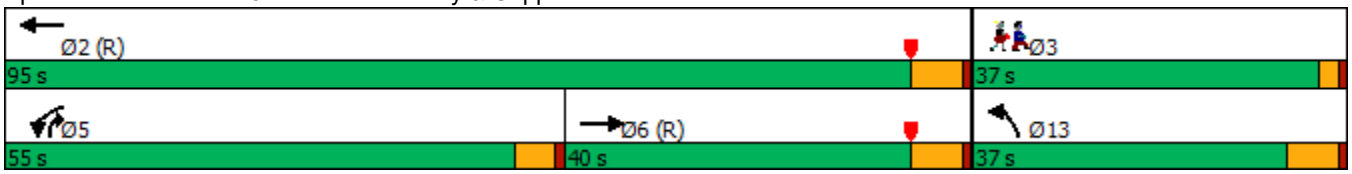


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3
Lane Configurations							
Traffic Volume (vph)	487	462	780	1655	286	283	
Future Volume (vph)	487	462	780	1655	286	283	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	310		230	0	
Storage Lanes		0	2		1	2	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3281	0	3433	3539	3433	2787	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3281	0	3433	3539	3433	2787	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	179					308	
Link Speed (mph)	50			50	50		
Link Distance (ft)	1501			578	607		
Travel Time (s)	20.5			7.9	8.3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1031	0	848	1799	311	308	
Turn Type	NA		Prot	NA	Prot	Over	
Protected Phases	6		5	2	13	5	3
Permitted Phases							
Total Split (s)	40.0		55.0	95.0	37.0	55.0	37.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0	
Act Effct Green (s)	59.5		41.2	104.7	19.3	41.2	
Actuated g/C Ratio	0.45		0.31	0.79	0.15	0.31	
v/c Ratio	0.65		0.79	0.64	0.62	0.28	
Control Delay	15.2		31.5	13.5	58.2	3.7	
Queue Delay	0.0		0.2	11.7	0.0	0.0	
Total Delay	15.2		31.7	25.2	58.2	3.7	
LOS	B		C	C	E	A	
Approach Delay	15.2			27.3	31.1		
Approach LOS	B			C	C		

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 120 (91%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 24.9 Intersection LOS: C
Intersection Capacity Utilization 68.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: McBean Parkway & Copper Hill Drive

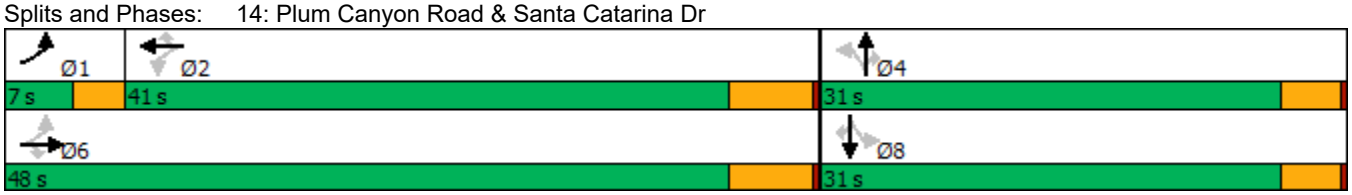


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	373	299	307	535	143	152	51	98	106	151	104
Future Volume (vph)	70	373	299	307	535	143	152	51	98	106	151	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1825	1583
Flt Permitted	0.217			0.514			0.477				0.850	
Satd. Flow (perm)	404	3539	1583	957	1863	1583	889	1863	1583	0	1583	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			325			114			107			84
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	405	325	334	582	155	165	55	107	0	279	113
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	30.3	30.3	30.3	26.9	26.9	26.9	17.2	17.2	17.2		17.2	17.2
Actuated g/C Ratio	0.53	0.53	0.53	0.47	0.47	0.47	0.30	0.30	0.30		0.30	0.30
v/c Ratio	0.25	0.21	0.33	0.74	0.66	0.19	0.61	0.10	0.19		0.58	0.21
Control Delay	9.1	7.4	2.1	26.2	17.2	4.8	31.3	17.7	5.4		24.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	9.1	7.4	2.1	26.2	17.2	4.8	31.3	17.7	5.4		24.6	8.4
LOS	A	A	A	C	B	A	C	B	A		C	A
Approach Delay		5.4			18.2			20.5			20.0	
Approach LOS		A			B			C			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 56.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

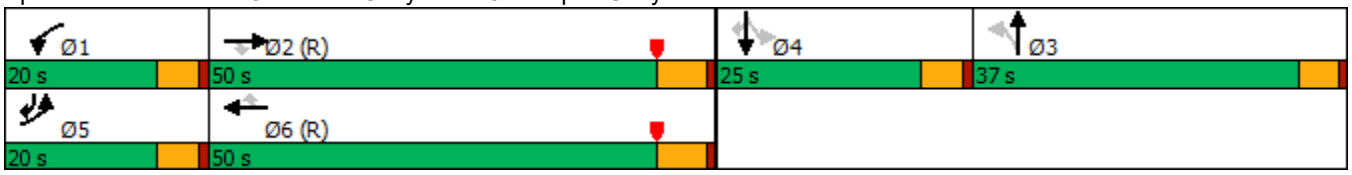


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	539	2	4	1426	236	2	1	10	196	1	328
Future Volume (vph)	172	539	2	4	1426	236	2	1	10	196	1	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1654	0	1681	1615	1504
Flt Permitted	0.950			0.950				0.965		0.190	0.190	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1607	0	336	322	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			145		11				357
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	187	586	2	4	1550	257	0	14	0	106	108	357
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	20.0	50.0	50.0	20.0	50.0	50.0	37.0	37.0		25.0	25.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	12.1	84.0	84.0	5.4	70.0	70.0		17.1		21.0	21.0	34.7
Actuated g/C Ratio	0.09	0.64	0.64	0.04	0.53	0.53		0.13		0.16	0.16	0.26
v/c Ratio	0.60	0.26	0.00	0.06	0.83	0.28		0.06		2.00	2.12	0.54
Control Delay	84.5	5.3	0.0	83.5	23.3	4.4		21.8		538.8	590.0	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	84.5	5.3	0.0	83.5	23.3	4.4		21.8		538.8	590.0	5.1
LOS	F	A	A	F	C	A		C		F	F	A
Approach Delay		24.4			20.7			21.8			214.8	
Approach LOS		C			C			C			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 103 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.12			
Intersection Signal Delay: 56.6		Intersection LOS: E	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

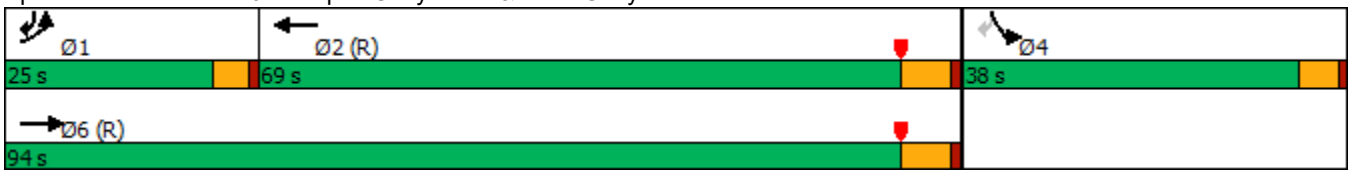


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	431	664	1855	265	207	792
Future Volume (vph)	431	664	1855	265	207	792
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	4989	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	4989	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28			6
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	468	722	2304	0	225	861
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	25.0	94.0	69.0		38.0	25.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	22.5	100.2	73.7		23.8	50.3
Actuated g/C Ratio	0.17	0.76	0.56		0.18	0.38
v/c Ratio	0.80	0.27	0.82		0.71	0.81
Control Delay	39.2	12.9	9.4		52.9	50.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	39.2	12.9	9.4		52.9	50.2
LOS	D	B	A		D	D
Approach Delay		23.2	9.4		50.8	
Approach LOS		C	A		D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 22.8		Intersection LOS: C	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

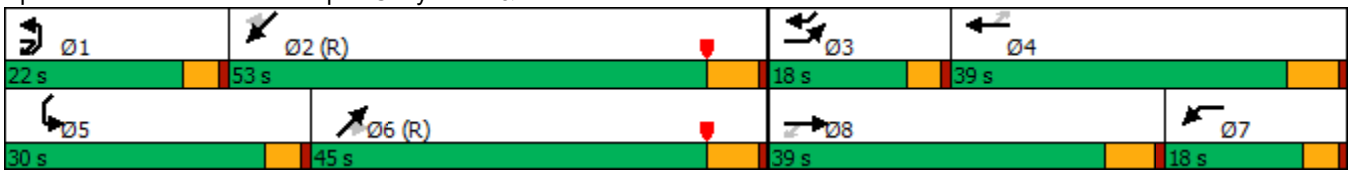


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	225	736	369	446	1469	403	333	727	133	451	2118	463
Future Volume (vph)	225	736	369	446	1469	403	333	727	133	451	2118	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			339			186			112
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	800	401	485	1597	438	362	790	145	490	2302	503
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	18.0	39.0	22.0	18.0	39.0	39.0	22.0	45.0	45.0	30.0	53.0	18.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	10.4	27.3	44.0	21.7	38.6	38.6	16.6	44.8	44.8	22.2	50.4	64.8
Actuated g/C Ratio	0.08	0.21	0.33	0.16	0.29	0.29	0.13	0.34	0.34	0.17	0.38	0.49
v/c Ratio	0.62	0.60	0.67	0.86	0.85	0.62	0.84	0.36	0.22	0.85	0.94	0.60
Control Delay	66.0	49.0	20.3	69.7	49.5	13.9	56.7	54.5	17.0	73.8	35.6	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.7
Total Delay	66.0	49.0	20.3	69.7	49.5	13.9	56.7	54.5	17.0	73.8	38.6	14.5
LOS	E	D	C	E	D	B	E	D	B	E	D	B
Approach Delay		43.9			47.2			50.9			40.2	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 105 (80%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 44.5	Intersection LOS: D
Intersection Capacity Utilization 79.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

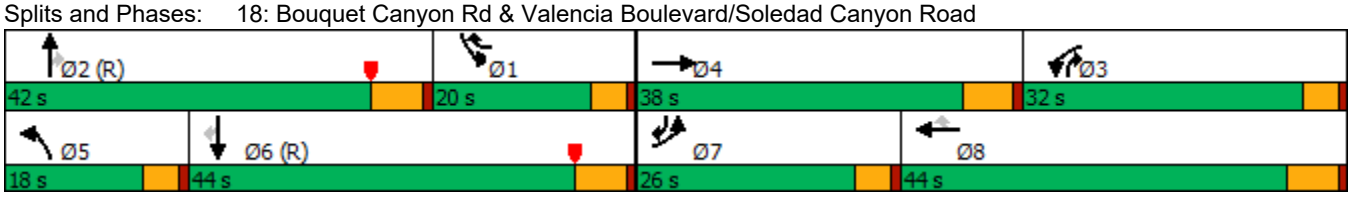


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	568	14	480	1447	241	26	616	314	275	1469	1083
Future Volume (vph)	291	568	14	480	1447	241	26	616	314	275	1469	1083
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5065	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5065	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				99			112			407
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	316	632	0	522	1573	262	28	670	341	299	1597	1177
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	26.0	38.0		32.0	44.0	20.0	18.0	42.0	32.0	20.0	44.0	26.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	18.5	24.0		38.0	43.5	59.5	8.1	38.0	80.0	16.0	50.1	72.6
Actuated g/C Ratio	0.14	0.18		0.29	0.33	0.45	0.06	0.29	0.61	0.12	0.38	0.55
v/c Ratio	0.45	0.68		0.36	0.94	0.34	0.26	0.46	0.34	0.72	0.83	0.69
Control Delay	53.8	54.0		38.9	54.8	9.1	64.2	39.8	9.8	41.5	20.1	13.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	54.0		38.9	54.8	9.1	64.2	39.8	9.8	41.5	20.1	13.6
LOS	D	D		D	D	A	E	D	A	D	C	B
Approach Delay		53.9			46.2			30.6			19.7	
Approach LOS		D			D			C			B	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 117 (89%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 34.0	Intersection LOS: C
Intersection Capacity Utilization 79.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

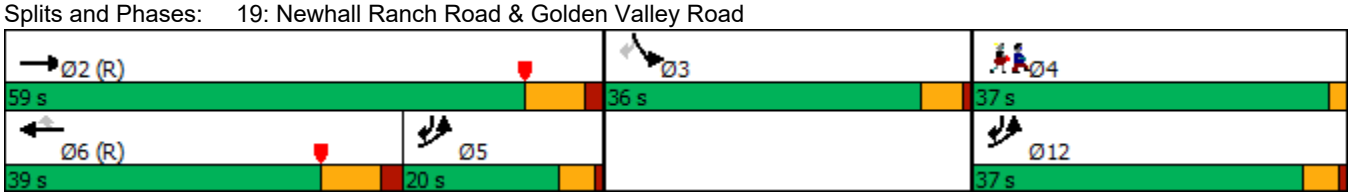


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	196	999	1366	190	678	769			
Future Volume (vph)	196	999	1366	190	678	769			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				95		1			
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	213	1086	1485	207	737	836			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	39.0	39.0	36.0		37.0	20.0	37.0
Total Lost Time (s)		4.0	4.0	8.0	4.0				
Act Effct Green (s)	27.4	77.4	57.4	53.4	31.3	67.1			
Actuated g/C Ratio	0.21	0.59	0.43	0.40	0.24	0.51			
v/c Ratio	0.30	0.36	0.67	0.30	0.91	0.59			
Control Delay	12.8	4.6	28.4	15.5	64.7	24.4			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	12.8	4.6	28.4	15.5	64.7	24.4			
LOS	B	A	C	B	E	C			
Approach Delay		5.9	26.8		43.3				
Approach LOS		A	C		D				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 106 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 26.6 Intersection LOS: C
Intersection Capacity Utilization 61.3% ICU Level of Service B
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

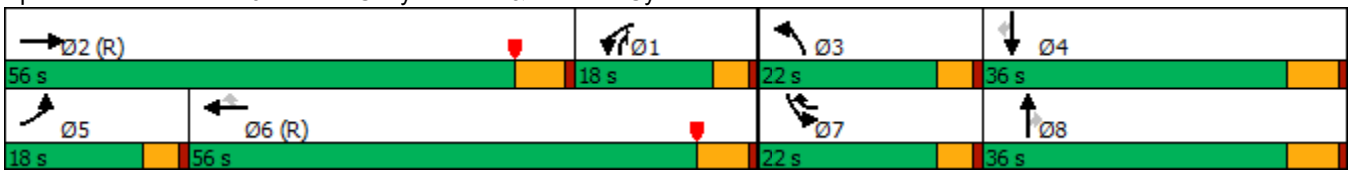


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	653	201	112	1594	413	432	471	55	401	701	227
Future Volume (vph)	135	653	201	112	1594	413	432	471	55	401	701	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	4907	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4907	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		69				100			99			200
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	928	0	122	1733	449	470	512	60	436	762	247
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	18.0	56.0		18.0	56.0	22.0	22.0	36.0	18.0	22.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	9.6	52.1		14.0	56.5	78.4	18.0	32.1	46.1	17.8	31.9	31.9
Actuated g/C Ratio	0.07	0.39		0.11	0.43	0.59	0.14	0.24	0.35	0.13	0.24	0.24
v/c Ratio	0.59	0.47		0.34	1.14	0.46	1.00	0.60	0.10	0.94	0.89	0.46
Control Delay	87.6	6.2		38.2	95.1	10.7	99.1	47.6	1.0	100.4	49.3	10.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.6	6.2		38.2	95.1	10.7	99.1	47.6	1.0	100.4	49.3	10.8
LOS	F	A		D	F	B	F	D	A	F	D	B
Approach Delay		17.3			75.6			68.2			58.1	
Approach LOS		B			E			E			E	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 121 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 59.3		Intersection LOS: E	
Intersection Capacity Utilization 92.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	136	135	62	169	521	465
Future Volume (vph)	136	135	62	169	521	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0	150			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	1863	1744	0
Flt Permitted	0.950		0.128			
Satd. Flow (perm)	1770	1583	238	1863	1744	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		147			111	
Link Speed (mph)	30			30	30	
Link Distance (ft)	354			292	382	
Travel Time (s)	8.0			6.6	8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	147	67	184	1071	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Total Split (s)	24.0	24.0	66.0	66.0	66.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	11.8	11.8	49.5	49.5	49.5	
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.69	
v/c Ratio	0.51	0.38	0.41	0.14	0.87	
Control Delay	36.1	9.0	14.3	4.4	17.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	36.1	9.0	14.3	4.4	17.3	
LOS	D	A	B	A	B	
Approach Delay	22.6			7.0	17.3	
Approach LOS	C			A	B	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 71.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	1	4	524	6	31
Future Vol, veh/h	240	1	4	524	6	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	261	1	4	570	7	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	262	0	840	262
Stage 1	-	-	-	-	262	-
Stage 2	-	-	-	-	578	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1302	-	335	777
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1302	-	334	777
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	561	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	639	-	-	1302	-
HCM Lane V/C Ratio	0.063	-	-	0.003	-
HCM Control Delay (s)	11	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	197	25	266	727	16	77
Future Vol, veh/h	197	25	266	727	16	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	26	271	742	16	79

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	753	642	0	0	1013	0
Stage 1	642	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	377	474	-	-	684	-
Stage 1	524	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	368	474	-	-	684	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.4	0	1.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	368	474	684	-
HCM Lane V/C Ratio	-	-	0.546	0.054	0.024	-
HCM Control Delay (s)	-	-	25.9	13	10.4	0
HCM Lane LOS	-	-	D	B	B	A
HCM 95th %tile Q(veh)	-	-	3.1	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	3	88	149	714	312	5
Future Vol, veh/h	3	88	149	714	312	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	96	162	776	339	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1054	172	344	0	-	0
Stage 1	342	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	221	842	1212	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	191	842	1212	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10.3	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1212	-	191	842	-	-
HCM Lane V/C Ratio	0.134	-	0.017	0.114	-	-
HCM Control Delay (s)	8.4	-	24.2	9.8	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	0.4	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	31	135	156	833	395	25
Future Vol, veh/h	31	135	156	833	395	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	147	170	905	429	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1236	228	456	0	-	0
Stage 1	443	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	168	775	1101	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	775	1101	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	406	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	15.8	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1101	-	142	775	-	-
HCM Lane V/C Ratio	0.154	-	0.237	0.189	-	-
HCM Control Delay (s)	8.9	-	38.1	10.7	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.9	0.7	-	-

Intersection						
Int Delay, s/veh	10					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	11	524	143	56	50	13
Future Vol, veh/h	11	524	143	56	50	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	552	151	59	53	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	421	60	67	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	589	1005	1535	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	529	1005	1535	-	-	-
Mov Cap-2 Maneuver	529	-	-	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	705	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.9	5.5	0
HCM LOS	B		

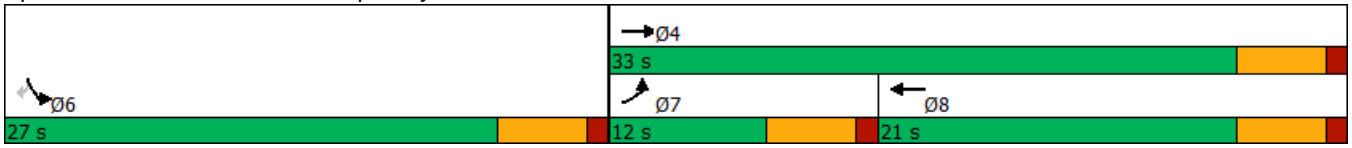
Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1535	-	529	1005	-	-
HCM Lane V/C Ratio	0.098	-	0.022	0.549	-	-
HCM Control Delay (s)	7.6	0	12	12.9	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	3.4	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	10	10	199	573	10
Future Volume (vph)	10	10	10	199	573	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1622	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1622	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			205			10
Link Speed (mph)		30	30		25	
Link Distance (ft)		387	310		132	
Travel Time (s)		8.8	7.0		3.6	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	10	215	0	591	10
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	12.0	33.0	21.0		27.0	27.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	7.2	9.9	7.9		25.9	25.9
Actuated g/C Ratio	0.16	0.22	0.17		0.56	0.56
v/c Ratio	0.04	0.02	0.48		0.59	0.01
Control Delay	18.1	11.3	7.8		13.1	5.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	18.1	11.3	7.8		13.1	5.0
LOS	B	B	A		B	A
Approach Delay		14.7	7.8		13.0	
Approach LOS		B	A		B	

Intersection Summary

Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 46			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Old Bouquet Cyn East & David



Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	516	40	0	171	11	6	17	0	9	14	35
Future Vol, veh/h	74	516	40	0	171	11	6	17	0	9	14	35
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	580	45	0	192	12	7	19	0	10	16	39
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	22.2	10.3	10	9.8
HCM LOS	C	B	A	A

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	26%	100%	0%	0%	0%	0%	0%	16%
Vol Thru, %	74%	0%	100%	0%	100%	100%	0%	24%
Vol Right, %	0%	0%	0%	100%	0%	0%	100%	60%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	74	516	40	0	171	11	58
LT Vol	6	74	0	0	0	0	0	9
Through Vol	17	0	516	0	0	171	0	14
RT Vol	0	0	0	40	0	0	11	35
Lane Flow Rate	26	83	580	45	0	192	12	65
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.05	0.127	0.806	0.054	0	0.291	0.016	0.113
Departure Headway (Hd)	6.904	5.504	5.002	4.298	5.453	5.453	4.749	6.241
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	522	649	719	828	0	653	746	570
Service Time	4.604	3.257	2.754	2.05	3.228	3.228	2.524	4.035
HCM Lane V/C Ratio	0.05	0.128	0.807	0.054	0	0.294	0.016	0.114
HCM Control Delay	10	9.1	25.2	7.3	8.2	10.5	7.6	9.8
HCM Lane LOS	A	A	D	A	N	B	A	A
HCM 95th-tile Q	0.2	0.4	8.4	0.2	0	1.2	0	0.4

Intersection						
Int Delay, s/veh	1.9					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	627	109	1	213	87	3
Future Vol, veh/h	627	109	1	213	87	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	667	116	1	227	93	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	783	0	896	667
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	835	-	311	459
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	835	-	311	459
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	314	-	-	835	-
HCM Lane V/C Ratio	0.305	-	-	0.001	-
HCM Control Delay (s)	21.4	-	-	9.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	108	13	47	119	17	16	6	34	22	6	4
Future Vol, veh/h	5	108	13	47	119	17	16	6	34	22	6	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	117	14	51	129	18	17	7	37	24	7	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	8.7	7.8	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	4%	26%	69%
Vol Thru, %	11%	86%	65%	19%
Vol Right, %	61%	10%	9%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	126	183	32
LT Vol	16	5	47	22
Through Vol	6	108	119	6
RT Vol	34	13	17	4
Lane Flow Rate	61	137	199	35
Geometry Grp	1	1	1	1
Degree of Util (X)	0.075	0.164	0.238	0.047
Departure Headway (Hd)	4.414	4.311	4.312	4.814
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	813	834	837	745
Service Time	2.435	2.328	2.312	2.837
HCM Lane V/C Ratio	0.075	0.164	0.238	0.047
HCM Control Delay	7.8	8.2	8.7	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.9	0.1

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	154	173	8	7	6
Future Vol, veh/h	7	154	173	8	7	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	164	184	9	7	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	387	10	13	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	616	1071	1606	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	545	1071	1606	-	-	-
Mov Cap-2 Maneuver	545	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	694	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	7.2	0
HCM LOS	A		

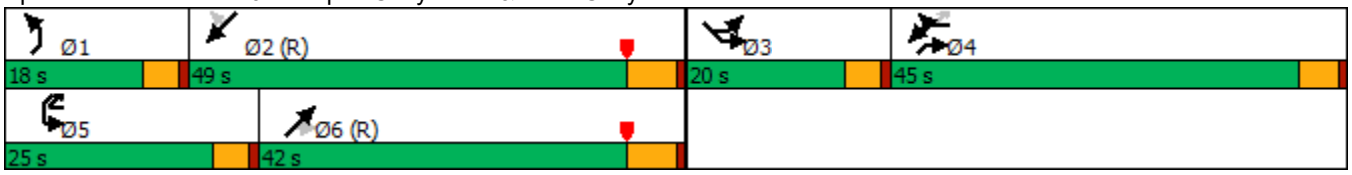
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1028	-	-
HCM Lane V/C Ratio	0.115	-	0.167	-	-
HCM Control Delay (s)	7.5	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.6	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	568	14	321	3	12	26	47	739	616	232	369	8
Future Volume (vph)	568	14	321	3	12	26	47	739	616	232	369	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1672	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.982		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1672	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			335		140				536			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	617	15	349	0	44	0	51	803	670	252	401	9
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	45.0	45.0	25.0	20.0	20.0		18.0	42.0	45.0	25.0	49.0	49.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	32.5	32.5	60.6		6.0		9.7	55.4	88.7	24.1	71.9	71.9
Actuated g/C Ratio	0.25	0.25	0.46		0.05		0.07	0.42	0.67	0.18	0.54	0.54
v/c Ratio	0.73	0.04	0.38		0.21		0.40	0.54	0.54	0.78	0.21	0.01
Control Delay	44.2	30.7	9.8		2.3		64.7	36.2	9.6	68.0	18.3	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	30.7	9.8		2.3		64.7	36.2	9.6	68.0	18.3	0.0
LOS	D	C	A		A		E	D	A	E	B	A
Approach Delay	31.7				2.3			25.4			36.9	
Approach LOS	C				A			C			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 50 (38%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 29.4		Intersection LOS: C	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

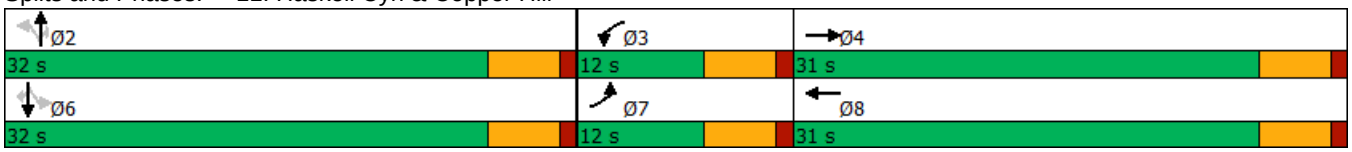


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	732	239	80	257	21	202	136	90	34	125	37
Future Volume (vph)	45	732	239	80	257	21	202	136	90	34	125	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3408	0	1770	3500	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.675			0.668		
Satd. Flow (perm)	1770	3408	0	1770	3500	0	1257	1863	1583	1244	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64			12				102			102
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	991	0	82	283	0	206	139	92	35	128	38
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	12.0	31.0		12.0	31.0		32.0	32.0	32.0	32.0	32.0	32.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	7.1	23.6		7.1	25.9		27.5	27.5	27.5	27.5	27.5	27.5
Actuated g/C Ratio	0.10	0.34		0.10	0.37		0.39	0.39	0.39	0.39	0.39	0.39
v/c Ratio	0.26	0.84		0.46	0.22		0.42	0.19	0.14	0.07	0.18	0.06
Control Delay	35.6	28.0		41.1	15.9		21.2	17.3	3.9	16.4	17.2	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	28.0		41.1	15.9		21.2	17.3	3.9	16.4	17.2	0.2
LOS	D	C		D	B		C	B	A	B	B	A
Approach Delay		28.4			21.6			16.3			13.8	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 70.3	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 23.1	Intersection LOS: C
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 11: Haskell Cyn & Copper Hill

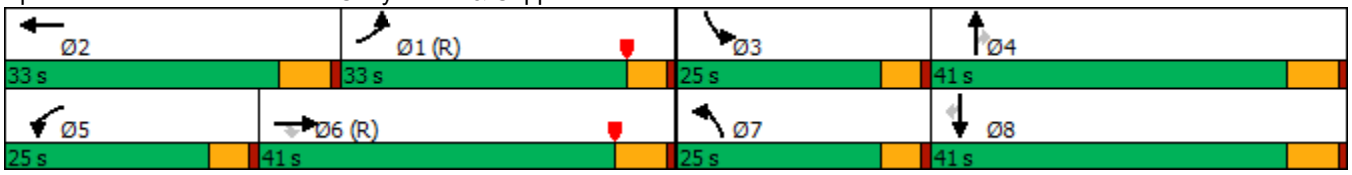


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	366	1123	194	140	435	58	186	266	211	66	185	166
Future Volume (vph)	366	1123	194	140	435	58	186	266	211	66	185	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	4994	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	4994	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112		17				229			170
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	398	1221	211	152	536	0	202	289	229	72	201	180
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	33.0	41.0	41.0	25.0	33.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	45.7	59.5	59.5	13.0	26.8		13.1	34.3	34.3	12.4	30.4	30.4
Actuated g/C Ratio	0.35	0.45	0.45	0.10	0.20		0.10	0.26	0.26	0.09	0.23	0.23
v/c Ratio	0.34	0.77	0.27	0.45	0.52		0.59	0.60	0.39	0.44	0.47	0.36
Control Delay	40.4	37.6	21.4	60.3	46.9		64.2	48.2	6.5	65.0	46.3	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	37.6	21.4	60.3	46.9		64.2	48.2	6.5	65.0	46.3	8.6
LOS	D	D	C	E	D		E	D	A	E	D	A
Approach Delay		36.4			49.9			39.4			34.3	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 22 (17%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 39.2		Intersection LOS: D	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø3	Ø14
Lane Configurations								
Traffic Volume (vph)	1564	229	321	514	310	753		
Future Volume (vph)	1564	229	321	514	310	753		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Storage Length (ft)		0	310		230	0		
Storage Lanes		0	2		1	2		
Taper Length (ft)			25		25			
Satd. Flow (prot)	3472	0	3433	3539	3433	2787		
Flt Permitted			0.950		0.950			
Satd. Flow (perm)	3472	0	3433	3539	3433	2787		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)	14					766		
Link Speed (mph)	50			50	50			
Link Distance (ft)	1501			578	607			
Travel Time (s)	20.5			7.9	8.3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	1949	0	349	559	337	818		
Turn Type	NA		Prot	NA	Prot	pt+ov		
Protected Phases	6		5	2	13	5 14	3	14
Permitted Phases						14		
Total Split (s)	56.0		30.0	86.0	46.0		36.0	10.0
Total Lost Time (s)	4.0		4.0	4.0	4.0			
Act Effct Green (s)	79.5		21.6	105.1	18.9	44.5		
Actuated g/C Ratio	0.60		0.16	0.80	0.14	0.34		
v/c Ratio	0.93		0.62	0.20	0.69	0.57		
Control Delay	29.9		86.1	0.6	60.9	4.4		
Queue Delay	0.3		0.0	0.0	0.0	0.1		
Total Delay	30.2		86.1	0.6	60.9	4.4		
LOS	C		F	A	E	A		
Approach Delay	30.2			33.5	20.9			
Approach LOS	C			C	C			

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 100 (76%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

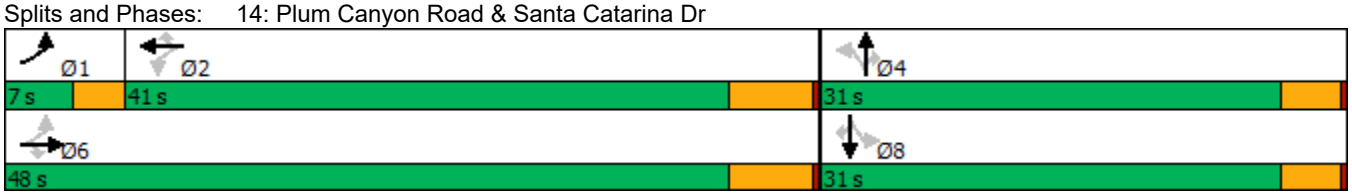
Splits and Phases: 13: McBean Parkway & Copperhill Drive

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	501	186	134	551	13	319	91	276	26	42	43
Future Volume (vph)	33	501	186	134	551	13	319	91	276	26	42	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1827	1583
Flt Permitted	0.172			0.449			0.709				0.900	
Satd. Flow (perm)	320	3539	1583	836	1863	1583	1321	1863	1583	0	1676	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			55			300			76
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	545	202	146	599	14	347	99	300	0	74	47
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	28.1	28.1	28.1	26.0	26.0	26.0	21.0	21.0	21.0		21.0	21.0
Actuated g/C Ratio	0.48	0.48	0.48	0.45	0.45	0.45	0.36	0.36	0.36		0.36	0.36
v/c Ratio	0.15	0.32	0.23	0.39	0.72	0.02	0.73	0.15	0.39		0.12	0.08
Control Delay	9.6	9.6	2.2	16.4	20.0	0.1	29.6	16.1	4.3		16.1	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	9.6	9.6	2.2	16.4	20.0	0.1	29.6	16.1	4.3		16.1	2.4
LOS	A	A	A	B	C	A	C	B	A		B	A
Approach Delay		7.7			19.0			17.6			10.8	
Approach LOS		A			B			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 58			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

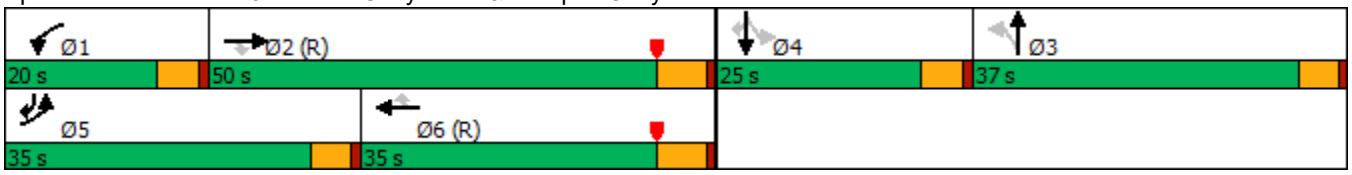


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	1378	22	15	889	183	9	19	10	223	10	253
Future Volume (vph)	389	1378	22	15	889	183	9	19	10	223	10	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1776	0	1681	1621	1504
Flt Permitted	0.950			0.950				0.919		0.253	0.269	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1652	0	448	456	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			154		11				275
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	423	1498	24	16	966	199	0	42	0	121	132	275
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	35.0	50.0	50.0	20.0	35.0	35.0	37.0	37.0		25.0	25.0	35.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	21.2	78.7	78.7	6.3	58.1	58.1		17.8		21.0	21.0	43.0
Actuated g/C Ratio	0.16	0.60	0.60	0.05	0.44	0.44		0.13		0.16	0.16	0.33
v/c Ratio	0.77	0.71	0.02	0.19	0.62	0.25		0.18		1.70	1.83	0.41
Control Delay	76.3	19.2	0.0	86.6	22.7	9.5		36.5		403.1	455.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	76.3	19.2	0.0	86.6	22.7	9.5		36.5		403.1	455.0	3.5
LOS	E	B	A	F	C	A		D		F	F	A
Approach Delay		31.4			21.3			36.5			208.0	
Approach LOS		C			C			D			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.83			
Intersection Signal Delay: 53.5		Intersection LOS: D	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

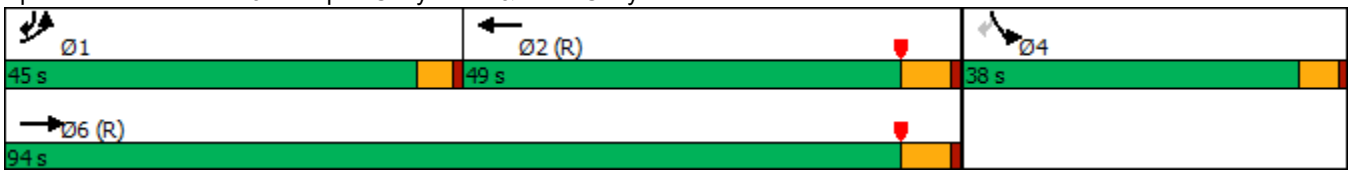


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	953	1963	1111	134	413	569
Future Volume (vph)	953	1963	1111	134	413	569
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	5004	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	5004	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			17			14
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1036	2134	1354	0	449	618
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	45.0	94.0	49.0		38.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	40.9	90.0	45.1		34.0	78.9
Actuated g/C Ratio	0.31	0.68	0.34		0.26	0.60
v/c Ratio	0.97	0.88	0.79		0.99	0.37
Control Delay	44.6	28.8	29.5		73.9	7.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	44.6	28.8	29.5		73.9	7.5
LOS	D	C	C		E	A
Approach Delay		34.0	29.5		35.5	
Approach LOS		C	C		D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 12 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 33.2		Intersection LOS: C	
Intersection Capacity Utilization 84.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

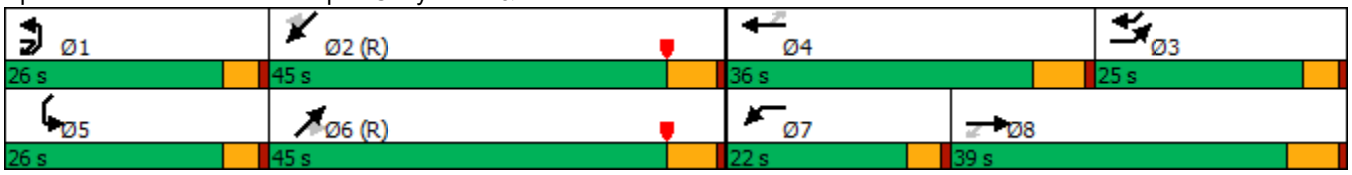


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	847	1575	401	369	936	432	497	1916	369	403	1143	267
Future Volume (vph)	847	1575	401	369	936	432	497	1916	369	403	1143	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			295			288			99
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	921	1712	436	401	1017	470	540	2083	401	438	1242	290
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	25.0	39.0	26.0	22.0	36.0	36.0	26.0	45.0	45.0	26.0	45.0	25.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	22.6	35.6	61.4	17.4	30.4	30.4	21.8	43.2	43.2	19.8	41.2	63.8
Actuated g/C Ratio	0.17	0.27	0.47	0.13	0.23	0.23	0.17	0.33	0.33	0.15	0.31	0.48
v/c Ratio	1.08	0.99	0.57	0.89	0.69	0.80	0.95	0.99	0.56	0.85	0.62	0.36
Control Delay	105.5	67.3	25.2	78.4	49.0	28.0	77.5	48.1	9.2	87.6	32.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.5	67.3	25.2	78.4	49.0	28.0	77.5	48.1	9.2	87.6	32.1	7.8
LOS	F	E	C	E	D	C	E	D	A	F	C	A
Approach Delay		72.8			50.0			48.2			40.8	
Approach LOS		E			D			D			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 55 (42%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 54.7		Intersection LOS: D	
Intersection Capacity Utilization 85.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

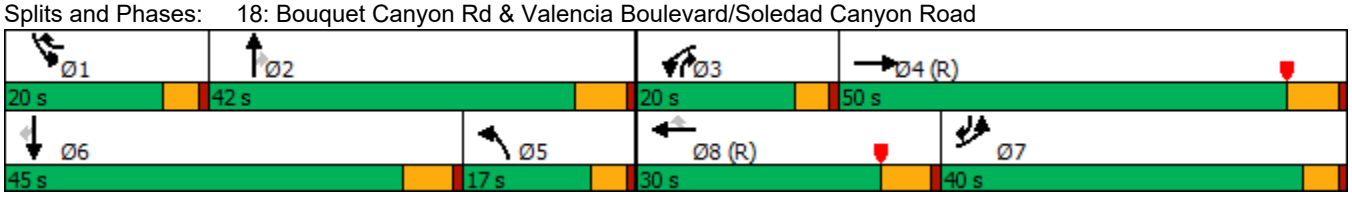


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1208	1380	20	348	826	265	24	1310	496	291	897	691
Future Volume (vph)	1208	1380	20	348	826	265	24	1310	496	291	897	691
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				124			112			497
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1313	1522	0	378	898	288	26	1424	539	316	975	751
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	40.0	50.0		20.0	30.0	20.0	17.0	42.0	20.0	20.0	45.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	36.0	46.9		15.1	26.0	41.5	12.9	38.5	57.6	15.5	45.3	85.3
Actuated g/C Ratio	0.27	0.36		0.11	0.20	0.31	0.10	0.29	0.44	0.12	0.34	0.65
v/c Ratio	0.97	0.84		0.66	0.90	0.49	0.15	0.96	0.71	0.78	0.56	0.38
Control Delay	64.8	44.7		61.9	64.2	13.2	54.5	61.8	29.9	63.9	50.1	10.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	44.7		61.9	64.2	13.2	54.5	61.8	29.9	63.9	50.1	10.5
LOS	E	D		E	E	B	D	E	C	E	D	B
Approach Delay		54.0			54.2			53.0			37.7	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 51 (39%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 49.9		Intersection LOS: D	
Intersection Capacity Utilization 85.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

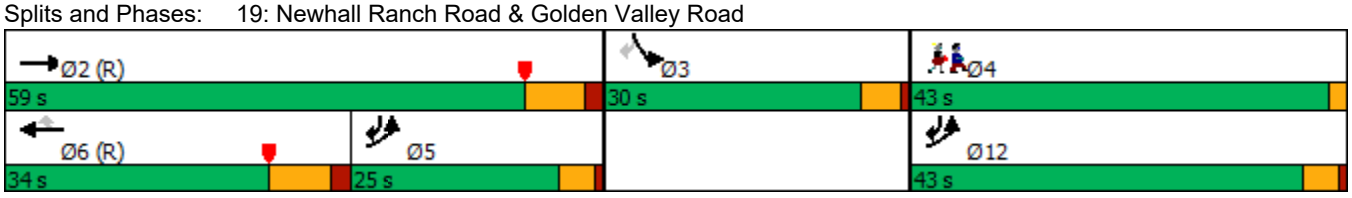


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	527	1723	1338	606	285	271			
Future Volume (vph)	527	1723	1338	606	285	271			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				305					
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	573	1873	1454	659	310	295			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	34.0	34.0	30.0		43.0	25.0	43.0
Total Lost Time (s)		4.0	4.0	4.0	4.0				
Act Effct Green (s)	33.1	88.8	64.7	64.7	18.2	59.8			
Actuated g/C Ratio	0.25	0.67	0.49	0.49	0.14	0.45			
v/c Ratio	0.67	0.55	0.58	0.71	0.66	0.23			
Control Delay	18.5	13.9	25.3	18.9	60.5	21.6			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	18.5	13.9	25.3	18.9	60.5	21.6			
LOS	B	B	C	B	E	C			
Approach Delay		15.0	23.3		41.5				
Approach LOS		B	C		D				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 79 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 59.2% ICU Level of Service B
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

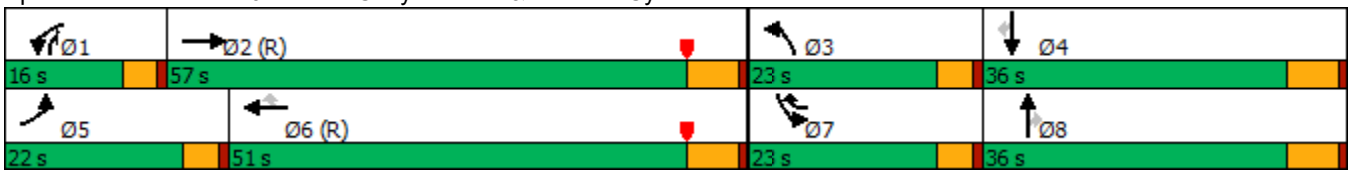


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	1616	205	111	967	358	431	899	95	476	531	163
Future Volume (vph)	247	1616	205	111	967	358	431	899	95	476	531	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	4999	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4999	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				99			99			177
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	1980	0	121	1051	389	468	977	103	517	577	177
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	22.0	57.0		16.0	51.0	23.0	23.0	36.0	16.0	23.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	14.1	56.4		8.6	50.9	73.9	18.9	32.0	44.6	19.0	32.1	32.1
Actuated g/C Ratio	0.11	0.43		0.07	0.39	0.56	0.14	0.24	0.34	0.14	0.24	0.24
v/c Ratio	0.73	0.92		0.55	0.77	0.42	0.95	1.14	0.17	1.05	0.67	0.34
Control Delay	83.8	22.1		87.3	21.1	2.9	85.9	121.9	6.6	116.3	37.2	4.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	22.1		87.3	21.1	2.9	85.9	121.9	6.6	116.3	37.2	4.3
LOS	F	C		F	C	A	F	F	A	F	D	A
Approach Delay		29.4			21.7			103.3			64.8	
Approach LOS		C			C			F			E	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 14 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 51.6		Intersection LOS: D	
Intersection Capacity Utilization 90.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn

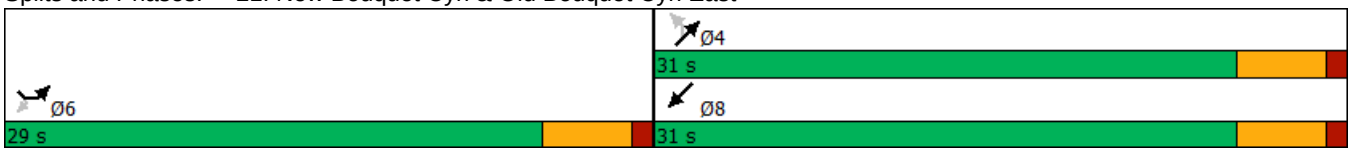


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	493	91	114	569	226	109
Future Volume (vph)	493	91	114	569	226	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0	150			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	1863	1781	0
Flt Permitted	0.950		0.480			
Satd. Flow (perm)	1770	1583	894	1863	1781	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		99			51	
Link Speed (mph)	30			30	30	
Link Distance (ft)	393			359	295	
Travel Time (s)	8.9			8.2	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	536	99	124	618	364	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	6			4	8	
Permitted Phases		6	4			
Total Split (s)	29.0	29.0	31.0	31.0	31.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	19.8	19.8	21.6	21.6	21.6	
Actuated g/C Ratio	0.38	0.38	0.42	0.42	0.42	
v/c Ratio	0.80	0.15	0.33	0.80	0.47	
Control Delay	25.6	3.7	14.1	23.2	12.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.6	3.7	14.1	23.2	12.2	
LOS	C	A	B	C	B	
Approach Delay	22.2			21.7	12.2	
Approach LOS	C			C	B	

Intersection Summary

Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 51.9			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East



Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	567	6	31	196	3	17
Future Vol, veh/h	567	6	31	196	3	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	616	7	34	213	3	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	623	0	901	620
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	281	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	958	-	309	488
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	767	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	958	-	297	488
Mov Cap-2 Maneuver	-	-	-	-	297	-
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	767	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	445	-	-	958	-
HCM Lane V/C Ratio	0.049	-	-	0.035	-
HCM Control Delay (s)	13.5	-	-	8.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Existing Plus Project Mitigation

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	5	243	512	18	0	25
Future Vol, veh/h	5	243	512	18	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	92	92	92	92	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	264	557	20	0	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	577	0	-	0	-	567
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	996	-	-	-	0	523
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	996	-	-	-	-	523
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0.2	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	996	-	523
HCM Lane V/C Ratio	-	-	0.006	-	0.056
HCM Control Delay (s)	-	-	8.6	-	12.3
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	189	69	1	641	0	60
Future Vol, veh/h	189	69	1	641	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	-	0
Veh in Median Storage, #0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	222	81	1	754	0	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	303	0	-	152
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.13	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.219	-	-	3.319
Pot Cap-1 Maneuver	-	-	1256	-	0	868
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1256	-	-	868
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	868	-	-	1256	-
HCM Lane V/C Ratio	0.081	-	-	0.001	-
HCM Control Delay (s)	9.5	-	-	7.9	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	136	135	62	169	521	465
Future Volume (vph)	136	135	62	169	521	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0	150			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	1863	1744	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1744	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		147			82	
Link Speed (mph)	30			30	30	
Link Distance (ft)	327			417	272	
Travel Time (s)	7.4			9.5	6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	147	67	184	1071	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Total Split (s)	22.0	22.0	12.0	110.0	98.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	13.5	13.5	7.6	78.3	69.4	
Actuated g/C Ratio	0.13	0.13	0.07	0.76	0.68	
v/c Ratio	0.64	0.44	0.52	0.13	0.89	
Control Delay	61.0	12.7	69.2	3.3	24.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.0	12.7	69.2	3.3	24.0	
LOS	E	B	E	A	C	
Approach Delay	36.9			20.9	24.0	
Approach LOS	D			C	C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 102.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 25.9		Intersection LOS: C	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East

Intersection	
Int Delay, s/veh	0.3

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	11	574	143	56	0	13
Future Vol, veh/h	11	574	143	56	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	92	92	92	92	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	624	155	61	0	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	216	0	-	0	-	186
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1354	-	-	-	0	856
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1354	-	-	-	-	856
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0.2	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1354	-	856
HCM Lane V/C Ratio	-	-	0.009	-	0.018
HCM Control Delay (s)	-	-	7.7	-	9.3
HCM Lane LOS	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	627	109	1	245	0	35
Future Vol, veh/h	627	109	1	245	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	-	0
Veh in Median Storage, #0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	667	116	1	261	0	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	783	0	-	392
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.13	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.219	-	-	3.319
Pot Cap-1 Maneuver	-	-	833	-	0	608
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	833	-	-	608
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

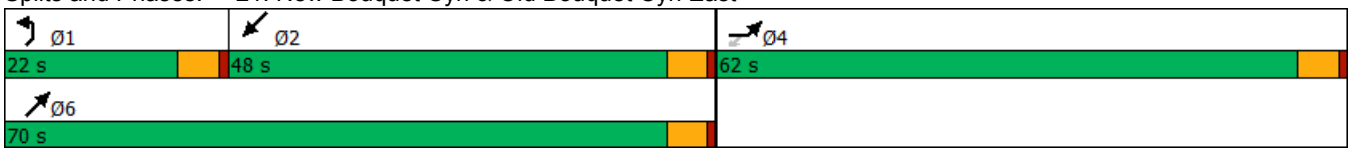
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	608	-	-	833	-
HCM Lane V/C Ratio	0.061	-	-	0.001	-
HCM Control Delay (s)	11.3	-	-	9.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	493	91	114	569	226	109
Future Volume (vph)	493	91	114	569	226	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0	150			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	1863	1781	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1781	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		98			19	
Link Speed (mph)	30			30	30	
Link Distance (ft)	327			417	420	
Travel Time (s)	7.4			9.5	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	536	99	124	618	364	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Total Split (s)	62.0	62.0	22.0	70.0	48.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	33.1	33.1	12.1	41.3	23.8	
Actuated g/C Ratio	0.39	0.39	0.14	0.48	0.28	
v/c Ratio	0.78	0.15	0.50	0.69	0.71	
Control Delay	33.0	4.9	47.4	23.3	37.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	33.0	4.9	47.4	23.3	37.0	
LOS	C	A	D	C	D	
Approach Delay	28.6			27.3	37.0	
Approach LOS	C			C	D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 85.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East



Interim Year No Project

Intersection						
Int Delay, s/veh	169.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	740	20	50	210	10	390
Future Vol, veh/h	740	20	50	210	10	390
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	771	21	52	219	10	406

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	588	162	0	0	271	0
Stage 1	162	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 471	883	-	-	1292	-
Stage 1	867	-	-	-	-	-
Stage 2	~ 659	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 466	883	-	-	1292	-
Mov Cap-2 Maneuver	~ 466	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	~ 659	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 317.2	0	0.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	466	883	1292	-
HCM Lane V/C Ratio	-	-	1.654	0.024	0.008	-
HCM Control Delay (s)	-	-	$ 325.5	9.2	7.8	0
HCM Lane LOS	-	-	F	A	A	A
HCM 95th %tile Q(veh)	-	-	44.6	0.1	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	15					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	20	280	730	30	100	90
Future Vol, veh/h	20	280	730	30	100	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	326	849	35	116	105

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1902	169	221	0	-	0
Stage 1	169	-	-	-	-	-
Stage 2	1733	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	76	875	1348	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	156	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	27	875	1348	-	-	-
Mov Cap-2 Maneuver	27	-	-	-	-	-
Stage 1	308	-	-	-	-	-
Stage 2	156	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	33.2	11.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1348	-	27	875	-	-
HCM Lane V/C Ratio	0.63	-	0.861	0.372	-	-
HCM Control Delay (s)	12.1	0	$ 336.6	11.5	-	-
HCM Lane LOS	B	A	F	B	-	-
HCM 95th %tile Q(veh)	4.7	-	2.7	1.7	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	200	320	970	560	210	170
Future Volume (vph)	200	320	970	560	210	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1771	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1771	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			44			189
Link Speed (mph)		30	30		25	
Link Distance (ft)		387	310		132	
Travel Time (s)		8.8	7.0		3.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	356	1700	0	233	189
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	19.0	127.0	108.0		23.0	23.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	14.0	122.0	103.0		18.0	18.0
Actuated g/C Ratio	0.09	0.81	0.69		0.12	0.12
v/c Ratio	1.35	0.23	1.38		1.10	0.53
Control Delay	238.8	3.6	201.4		149.5	13.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	238.8	3.6	201.4		149.5	13.4
LOS	F	A	F		F	B
Approach Delay		94.0	201.4		88.5	
Approach LOS		F	F		F	

Intersection Summary

Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay: 160.8		Intersection LOS: F	
Intersection Capacity Utilization 120.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 5: Bouquet Cyn & David

Intersection	
Intersection Delay, s/veh	174.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	270	10	10	800	10	10	10	10	20	30	90
Future Vol, veh/h	30	270	10	10	800	10	10	10	10	20	30	90
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	325	12	12	964	12	12	12	12	24	36	108
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	15.9	267.5	12	14
HCM LOS	C	F	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	33%	100%	0%	0%	100%	0%	0%	14%
Vol Thru, %	33%	0%	100%	0%	0%	100%	0%	21%
Vol Right, %	33%	0%	0%	100%	0%	0%	100%	64%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	30	270	10	10	800	10	140
LT Vol	10	30	0	0	10	0	0	20
Through Vol	10	0	270	0	0	800	0	30
RT Vol	10	0	0	10	0	0	10	90
Lane Flow Rate	36	36	325	12	12	964	12	169
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.076	0.065	0.54	0.018	0.021	1.556	0.017	0.317
Departure Headway (Hd)	8.603	7.109	6.598	5.883	6.319	5.812	5.102	7.717
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	419	507	550	612	570	636	706	469
Service Time	6.303	4.809	4.298	3.583	4.021	3.514	2.804	5.417
HCM Lane V/C Ratio	0.086	0.071	0.591	0.02	0.021	1.516	0.017	0.36
HCM Control Delay	12	10.3	16.8	8.7	9.2	274	7.9	14
HCM Lane LOS	B	B	C	A	A	F	A	B
HCM 95th-tile Q	0.2	0.2	3.2	0.1	0.1	50.2	0.1	1.3

Intersection						
Int Delay, s/veh	22					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	300	70	10	890	150	10
Future Vol, veh/h	300	70	10	890	150	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	353	82	12	1047	176	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	435	0	1424	353
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	1071	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1125	-	~ 150	691
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	329	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1125	-	~ 148	691
Mov Cap-2 Maneuver	-	-	-	-	~ 148	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	329	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	195.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	156	-	-	1125	-
HCM Lane V/C Ratio	1.207	-	-	0.01	-
HCM Control Delay (s)	195.8	-	-	8.2	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	10.7	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	90	10	30	120	10	30	10	60	20	20	10
Future Vol, veh/h	10	90	10	30	120	10	30	10	60	20	20	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	97	11	32	129	11	32	11	65	22	22	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8.7	8	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	9%	19%	40%
Vol Thru, %	10%	82%	75%	40%
Vol Right, %	60%	9%	6%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	110	160	50
LT Vol	30	10	30	20
Through Vol	10	90	120	20
RT Vol	60	10	10	10
Lane Flow Rate	108	118	172	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.13	0.147	0.212	0.07
Departure Headway (Hd)	4.362	4.459	4.436	4.682
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	823	805	810	765
Service Time	2.386	2.48	2.456	2.709
HCM Lane V/C Ratio	0.131	0.147	0.212	0.071
HCM Control Delay	8	8.3	8.7	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.5	0.8	0.2

Intersection						
Int Delay, s/veh	14.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	170	150	510	1130	10
Future Vol, veh/h	10	170	150	510	1130	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	183	161	548	1215	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2091	1221	1226	0	-	0
Stage 1	1221	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	58	219	569	-	-	-
Stage 1	279	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	42	219	569	-	-	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	200	-	-	-	-	-
Stage 2	410	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	148.6	3.1	0
HCM LOS	F		

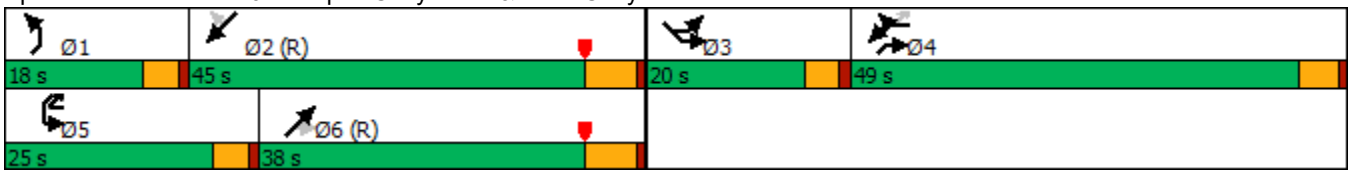
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	569	-	177	-	-
HCM Lane V/C Ratio	0.283	-	1.093	-	-
HCM Control Delay (s)	13.8	-	148.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.2	-	9.6	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	590	10	290	10	10	50	20	210	500	450	720	10
Future Volume (vph)	590	10	290	10	10	50	20	210	500	450	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1660	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.986		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1660	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			315		140				487			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	641	11	315	0	76	0	22	228	543	489	783	11
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	49.0	49.0	25.0	20.0	20.0		18.0	38.0	49.0	25.0	45.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	33.4	33.4	82.0		6.0		7.7	34.0	68.2	44.6	75.0	75.0
Actuated g/C Ratio	0.25	0.25	0.62		0.05		0.06	0.26	0.52	0.34	0.57	0.57
v/c Ratio	0.74	0.03	0.29		0.36		0.21	0.25	0.52	0.82	0.39	0.01
Control Delay	58.0	43.7	4.0		4.8		78.7	37.6	10.1	54.1	19.0	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	43.7	4.0		4.8		78.7	37.6	10.1	54.1	19.0	0.0
LOS	E	D	A		A		E	D	B	D	B	A
Approach Delay	40.3				4.8			19.9			32.2	
Approach LOS	D				A			B			C	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 83 (63%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 30.9	Intersection LOS: C
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

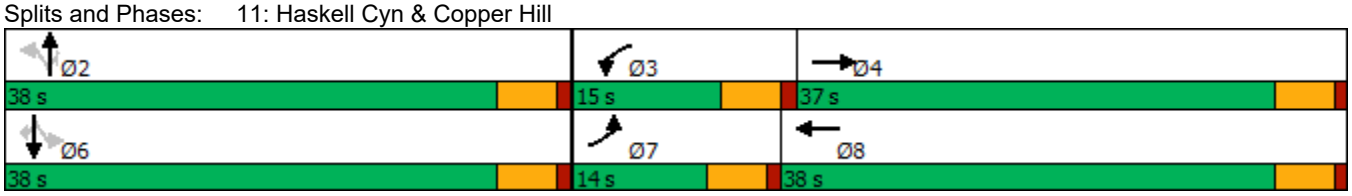


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	310	200	90	1060	90	190	130	20	80	360	190
Future Volume (vph)	140	310	200	90	1060	90	190	130	20	80	360	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3330	0	1770	3497	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.352			0.667		
Satd. Flow (perm)	1770	3330	0	1770	3497	0	656	1863	1583	1242	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		180			11				85			207
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	554	0	98	1250	0	207	141	22	87	391	207
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	14.0	37.0		15.0	38.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	9.0	35.3		9.1	33.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.10	0.39		0.10	0.37		0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.86	0.39		0.55	0.97		0.86	0.21	0.03	0.19	0.57	0.29
Control Delay	80.8	14.7		50.2	47.7		60.9	20.6	0.1	20.9	26.9	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	14.7		50.2	47.7		60.9	20.6	0.1	20.9	26.9	4.1
LOS	F	B		D	D		E	C	A	C	C	A
Approach Delay		28.9			47.9			41.9			19.3	
Approach LOS		C			D			D			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 36.6		Intersection LOS: D	
Intersection Capacity Utilization 86.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 11: Haskell Cyn & Copper Hill

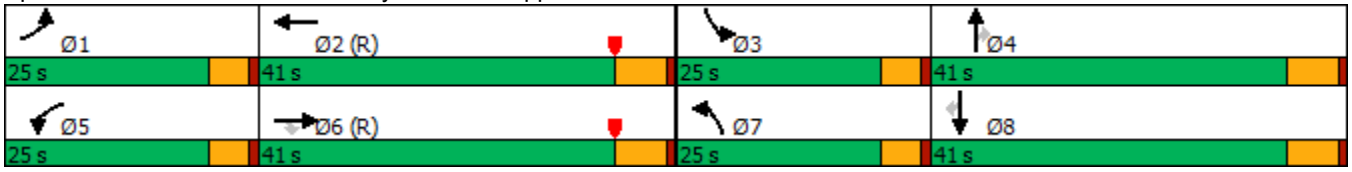


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	690	190	110	1450	20	250	100	80	90	210	510
Future Volume (vph)	160	690	190	110	1450	20	250	100	80	90	210	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	5075	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5075	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			179		1				107			321
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	750	207	120	1598	0	272	109	87	98	228	554
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	25.0	41.0	41.0	25.0	41.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	12.6	56.6	56.6	12.4	56.4		15.2	33.7	33.7	13.3	31.8	31.8
Actuated g/C Ratio	0.10	0.43	0.43	0.09	0.43		0.12	0.26	0.26	0.10	0.24	0.24
v/c Ratio	0.53	0.49	0.27	0.37	0.74		0.69	0.23	0.18	0.55	0.51	0.89
Control Delay	61.8	34.1	13.9	59.6	36.0		65.4	37.7	4.3	68.4	46.0	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	34.1	13.9	59.6	36.0		65.4	37.7	4.3	68.4	46.0	36.2
LOS	E	C	B	E	D		E	D	A	E	D	D
Approach Delay		34.7			37.6			47.6			42.3	
Approach LOS		C			D			D			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 38.9		Intersection LOS: D	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive



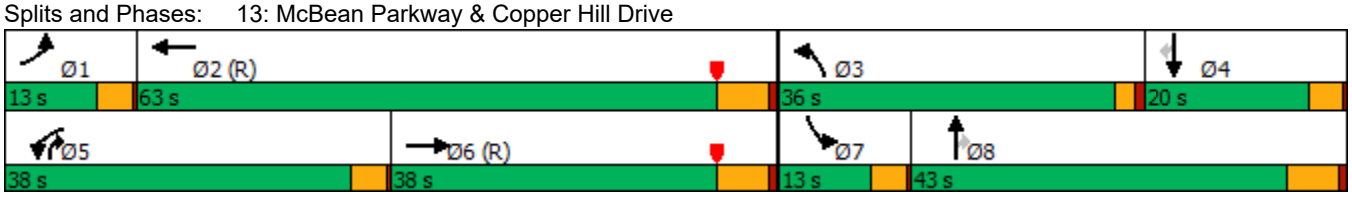
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	740	630	1130	1570	50	250	40	380	50	190	120
Future Volume (vph)	50	740	630	1130	1570	50	250	40	380	50	190	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	310		0	230		0	200		0
Storage Lanes	1		0	2		0	1		2	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	4734	0	3433	5060	0	3433	1863	2787	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4734	0	3433	5060	0	3433	1863	2787	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		157			5				172			149
Link Speed (mph)		50			50			50			30	
Link Distance (ft)		1501			578			607			504	
Travel Time (s)		20.5			7.9			8.3			11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	1489	0	1228	1761	0	272	43	413	54	207	130
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases									8			4
Total Split (s)	13.0	38.0		38.0	63.0		36.0	43.0	38.0	13.0	20.0	20.0
Total Lost Time (s)	4.0	4.0		3.0	4.0		1.0	6.0	3.0	4.0	4.0	4.0
Act Effct Green (s)	9.4	34.0		55.0	80.6		17.8	19.9	80.9	8.1	13.2	13.2
Actuated g/C Ratio	0.07	0.26		0.42	0.61		0.13	0.15	0.61	0.06	0.10	0.10
v/c Ratio	0.43	1.31dr		0.86	0.57		0.59	0.15	0.23	0.50	0.59	0.45
Control Delay	71.3	87.3		45.3	24.9		58.6	49.5	7.2	75.8	63.3	10.4
Queue Delay	0.0	0.1		0.0	0.5		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	87.4		45.3	25.4		58.6	49.5	7.2	75.8	63.3	10.4
LOS	E	F		D	C		E	D	A	E	E	B
Approach Delay		86.8			33.6			28.9			47.4	
Approach LOS		F			C			C			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 86.4%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 13: McBean Parkway & Copper Hill Drive

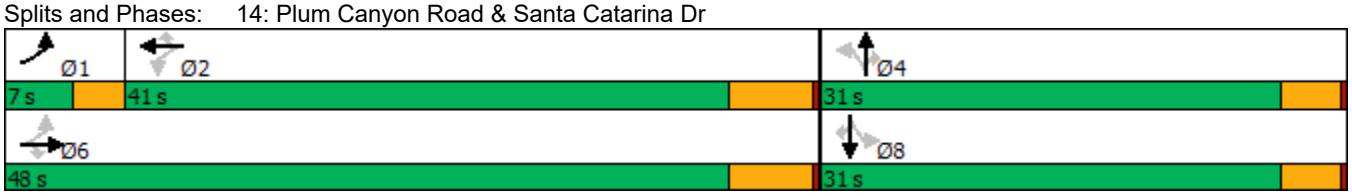


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	320	620	530	580	140	120	50	140	110	150	100
Future Volume (vph)	70	320	620	530	580	140	120	50	140	110	150	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1824	1583
Flt Permitted	0.240			0.543			0.398				0.839	
Satd. Flow (perm)	447	3539	1583	1011	1863	1583	741	1863	1583	0	1563	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			592			103			152			80
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	348	674	576	630	152	130	54	152	0	283	109
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	42.9	42.9	42.9	37.6	37.6	37.6	17.5	17.5	17.5		17.5	17.5
Actuated g/C Ratio	0.63	0.63	0.63	0.55	0.55	0.55	0.26	0.26	0.26		0.26	0.26
v/c Ratio	0.22	0.16	0.56	1.04	0.62	0.17	0.69	0.11	0.29		0.71	0.24
Control Delay	8.1	6.4	3.4	71.0	16.0	4.8	42.8	19.7	5.3		33.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	8.1	6.4	3.4	71.0	16.0	4.8	42.8	19.7	5.3		33.7	9.0
LOS	A	A	A	E	B	A	D	B	A		C	A
Approach Delay		4.7			38.1			22.1			26.8	
Approach LOS		A			D			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 68.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 91.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

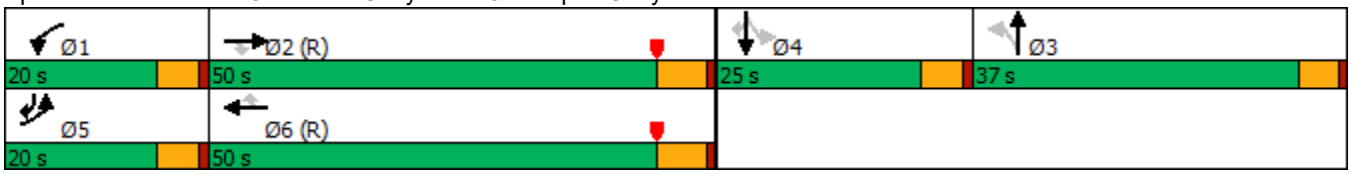


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	440	10	10	1400	230	10	10	10	210	10	520
Future Volume (vph)	160	440	10	10	1400	230	10	10	10	210	10	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1750	0	1681	1621	1504
Flt Permitted	0.950			0.950				0.890		0.338	0.359	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1583	0	598	609	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			144		11				436
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	174	478	11	11	1522	250	0	33	0	114	125	565
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	20.0	50.0	50.0	20.0	50.0	50.0	37.0	37.0		25.0	25.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	12.0	79.2	79.2	5.9	67.6	67.6		17.5		21.0	21.0	33.8
Actuated g/C Ratio	0.09	0.60	0.60	0.04	0.51	0.51		0.13		0.16	0.16	0.26
v/c Ratio	0.56	0.23	0.01	0.14	0.84	0.28		0.15		1.20	1.30	0.80
Control Delay	85.7	5.6	0.0	78.2	25.9	5.6		33.3		202.5	236.2	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	85.7	5.6	0.0	78.2	25.9	5.6		33.3		202.5	236.2	15.1
LOS	F	A	A	E	C	A		C		F	F	B
Approach Delay		26.5			23.3			33.3			76.1	
Approach LOS		C			C			C			E	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 103 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 37.0	Intersection LOS: D
Intersection Capacity Utilization 73.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

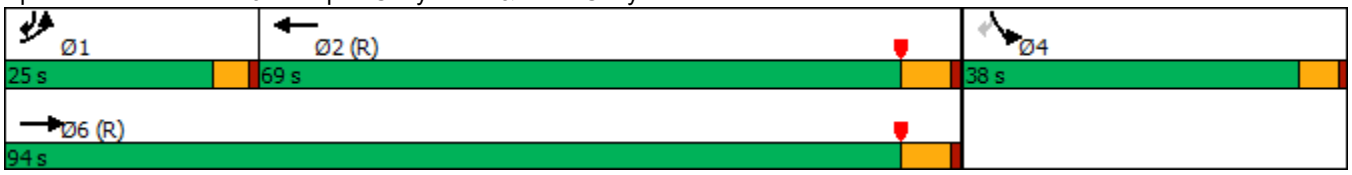


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	350	540	2400	350	280	830
Future Volume (vph)	350	540	2400	350	280	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	4989	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	4989	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			29			1
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	587	2989	0	304	902
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	25.0	94.0	69.0		38.0	25.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	19.8	95.9	72.0		28.1	52.0
Actuated g/C Ratio	0.15	0.73	0.55		0.21	0.39
v/c Ratio	0.74	0.23	1.09		0.81	0.82
Control Delay	44.2	9.9	56.4		58.0	49.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	44.2	9.9	56.4		58.0	49.4
LOS	D	A	E		E	D
Approach Delay		23.4	56.4		51.6	
Approach LOS		C	E		D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 49.1		Intersection LOS: D	
Intersection Capacity Utilization 89.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

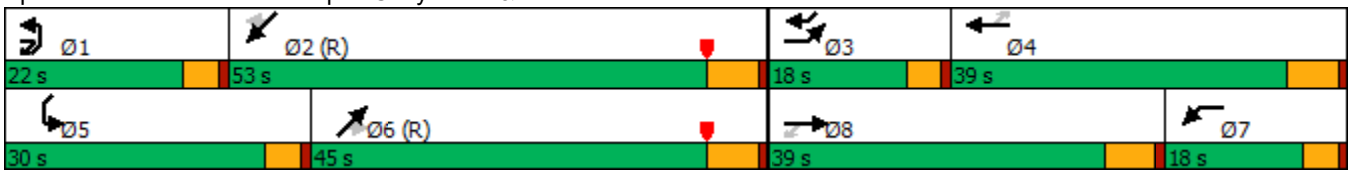


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	120	770	420	590	1790	70	380	690	140	300	2530	320
Future Volume (vph)	120	770	420	590	1790	70	380	690	140	300	2530	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			136			186			112
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	837	457	641	1946	76	413	750	152	326	2750	348
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	18.0	39.0	22.0	18.0	39.0	39.0	22.0	45.0	45.0	30.0	53.0	18.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	7.4	28.1	45.6	20.9	41.6	41.6	17.5	50.5	50.5	16.5	49.5	60.9
Actuated g/C Ratio	0.06	0.21	0.35	0.16	0.32	0.32	0.13	0.38	0.38	0.12	0.38	0.46
v/c Ratio	0.47	0.61	0.74	1.18	0.96	0.13	0.91	0.31	0.21	0.76	1.15	0.44
Control Delay	65.6	48.7	23.3	145.6	57.7	0.4	68.5	35.5	8.7	78.7	99.2	8.1
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	65.6	48.7	23.4	145.6	57.7	0.4	68.5	35.5	8.7	78.7	99.3	8.1
LOS	E	D	C	F	E	A	E	D	A	E	F	A
Approach Delay		42.2			77.2			42.7			88.1	
Approach LOS		D			E			D			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 105 (80%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 70.6		Intersection LOS: E	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

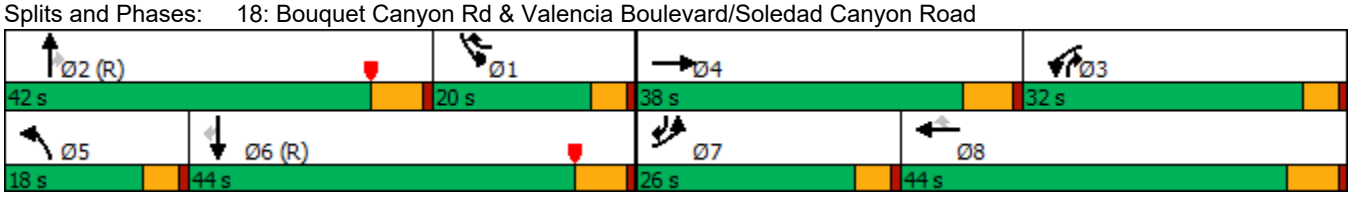


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	1060	40	540	720	480	20	490	270	760	1710	1430
Future Volume (vph)	320	1060	40	540	720	480	20	490	270	760	1710	1430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5060	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5060	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				99			112			478
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	348	1195	0	587	783	522	22	533	293	826	1859	1554
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	26.0	38.0		32.0	44.0	20.0	18.0	42.0	32.0	20.0	44.0	26.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	21.5	34.0		22.4	34.9	50.9	7.7	43.6	70.0	16.0	56.0	81.5
Actuated g/C Ratio	0.16	0.26		0.17	0.26	0.39	0.06	0.33	0.53	0.12	0.42	0.62
v/c Ratio	0.43	0.92		0.69	0.58	0.78	0.21	0.32	0.33	1.99	0.86	0.82
Control Delay	51.4	59.0		55.8	43.8	27.4	63.5	34.4	11.5	473.6	24.0	15.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	59.0		55.8	43.8	27.4	63.5	34.4	11.5	473.6	24.0	15.3
LOS	D	E		E	D	C	E	C	B	F	C	B
Approach Delay		57.3			43.0			27.3			108.4	
Approach LOS		E			D			C			F	

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 117 (89%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.99
Intersection Signal Delay: 76.6 Intersection LOS: E
Intersection Capacity Utilization 81.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

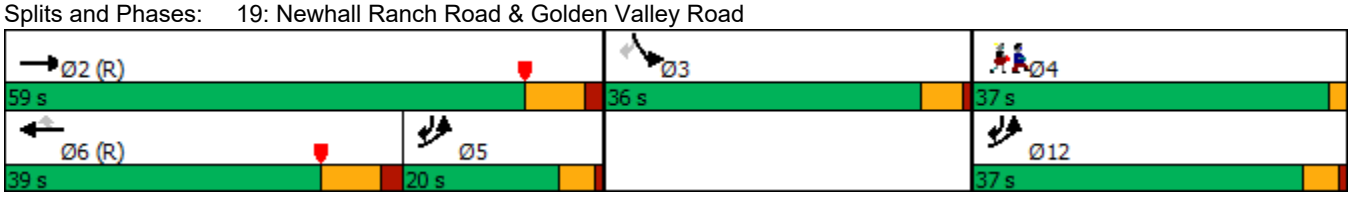


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	530	1840	2600	580	1800	1740			
Future Volume (vph)	530	1840	2600	580	1800	1740			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				152					
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	576	2000	2826	630	1957	1891			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	39.0	39.0	36.0		37.0	20.0	37.0
Total Lost Time (s)		4.0	4.0	8.0	4.0				
Act Effct Green (s)	47.0	55.0	35.0	31.0	32.0	89.5			
Actuated g/C Ratio	0.36	0.42	0.27	0.23	0.24	0.68			
v/c Ratio	0.47	0.94	2.10	1.29	2.35	1.00			
Control Delay	16.4	37.2	520.6	169.1	635.9	42.5			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	16.4	37.2	520.6	169.1	635.9	42.5			
LOS	B	D	F	F	F	D			
Approach Delay		32.5	456.5		344.3				
Approach LOS		C	F		F				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 106 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.35
Intersection Signal Delay: 302.3 Intersection LOS: F
Intersection Capacity Utilization 127.5% ICU Level of Service H
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

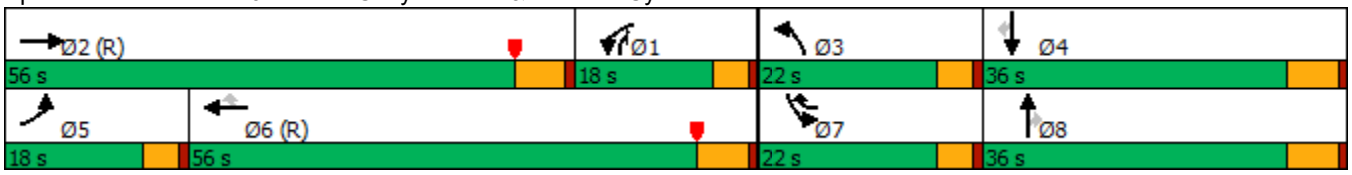


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	760	80	380	1830	280	90	550	190	340	660	180
Future Volume (vph)	90	760	80	380	1830	280	90	550	190	340	660	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	5014	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5014	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				129			99			196
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	913	0	413	1989	304	98	598	207	370	717	196
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	18.0	56.0		18.0	56.0	22.0	22.0	36.0	18.0	22.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	7.7	55.6		14.0	61.9	82.6	7.7	29.7	43.7	16.8	38.7	38.7
Actuated g/C Ratio	0.06	0.42		0.11	0.47	0.63	0.06	0.22	0.33	0.13	0.29	0.29
v/c Ratio	0.49	0.43		1.13	1.20	0.29	0.49	0.75	0.35	0.85	0.69	0.33
Control Delay	85.9	6.7		118.7	115.1	4.9	68.2	54.1	11.3	93.2	32.8	5.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.9	6.7		118.7	115.1	4.9	68.2	54.1	11.3	93.2	32.8	5.4
LOS	F	A		F	F	A	E	D	B	F	C	A
Approach Delay		14.3			103.3			45.8			46.0	
Approach LOS		B			F			D			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 121 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 66.8		Intersection LOS: E	
Intersection Capacity Utilization 92.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn



Intersection						
Int Delay, s/veh	14.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	250	30	450	820	10	110
Future Vol, veh/h	250	30	450	820	10	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	255	31	459	837	10	112

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1010	878	0	0	1296	0
Stage 1	878	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	266	347	-	-	535	-
Stage 1	406	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	261	347	-	-	535	-
Mov Cap-2 Maneuver	261	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	83.7	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	261	347	535	-
HCM Lane V/C Ratio	-	-	0.977	0.088	0.019	-
HCM Control Delay (s)	-	-	91.8	16.4	11.9	0
HCM Lane LOS	-	-	F	C	B	A
HCM 95th %tile Q(veh)	-	-	9.4	0.3	0.1	-

Intersection	
Int Delay, s/veh	15.2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	40	730	250	70	60	50
Future Vol, veh/h	40	730	250	70	60	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	768	263	74	63	53

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	690	90	116	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	411	968	1473	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	335	968	1473	-	-	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	21.1	6.2	0
HCM LOS	C		

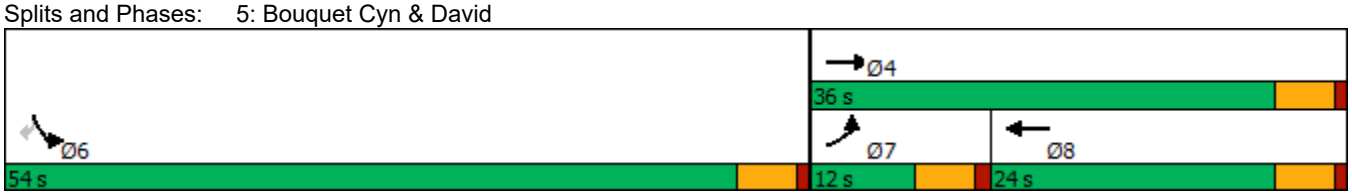
Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1473	-	335	968	-	-
HCM Lane V/C Ratio	0.179	-	0.126	0.794	-	-
HCM Control Delay (s)	8	0	17.3	21.3	-	-
HCM Lane LOS	A	A	C	C	-	-
HCM 95th %tile Q(veh)	0.7	-	0.4	8.6	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	150	950	300	170	530	260
Future Volume (vph)	150	950	300	170	530	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1771	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1771	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			29			268
Link Speed (mph)		30	30		25	
Link Distance (ft)		387	310		132	
Travel Time (s)		8.8	7.0		3.6	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	979	484	0	546	268
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	12.0	36.0	24.0		54.0	54.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	7.0	31.0	19.0		49.0	49.0
Actuated g/C Ratio	0.08	0.34	0.21		0.54	0.54
v/c Ratio	1.13	1.53	1.22		0.57	0.27
Control Delay	157.1	271.4	152.2		16.4	2.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	157.1	271.4	152.2		16.4	2.1
LOS	F	F	F		B	A
Approach Delay		255.7	152.2		11.7	
Approach LOS		F	F		B	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.53			
Intersection Signal Delay: 153.4		Intersection LOS: F	
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Bouquet Cyn & David



Intersection	
Intersection Delay, s/veh	94.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	740	50	10	270	20	10	30	10	20	20	50
Future Vol, veh/h	80	740	50	10	270	20	10	30	10	20	20	50
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	831	56	11	303	22	11	34	11	22	22	56
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	135.1	14.7	11.6	12
HCM LOS	F	B	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	20%	100%	0%	0%	100%	0%	0%	22%
Vol Thru, %	60%	0%	100%	0%	0%	100%	0%	22%
Vol Right, %	20%	0%	0%	100%	0%	0%	100%	56%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	80	740	50	10	270	20	90
LT Vol	10	80	0	0	10	0	0	20
Through Vol	30	0	740	0	0	270	0	20
RT Vol	10	0	0	50	0	0	20	50
Lane Flow Rate	56	90	831	56	11	303	22	101
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.115	0.151	1.283	0.076	0.02	0.507	0.033	0.195
Departure Headway (Hd)	7.856	6.059	5.554	4.846	6.809	6.302	5.591	7.46
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	595	657	742	529	576	644	484
Service Time	5.556	3.768	3.263	2.555	4.509	4.002	3.291	5.16
HCM Lane V/C Ratio	0.122	0.151	1.265	0.075	0.021	0.526	0.034	0.209
HCM Control Delay	11.6	9.8	157.2	8	9.6	15.3	8.5	12
HCM Lane LOS	B	A	F	A	A	C	A	B
HCM 95th-tile Q	0.4	0.5	32.5	0.2	0.1	2.9	0.1	0.7

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	860	100	10	320	80	10
Future Vol, veh/h	860	100	10	320	80	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	915	106	11	340	85	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1021	0	1277	915
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	362	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	680	-	184	331
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	680	-	181	331
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	704	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	41.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	191	-	-	680	-
HCM Lane V/C Ratio	0.501	-	-	0.016	-
HCM Control Delay (s)	41.4	-	-	10.4	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	2.5	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	90	20	50	100	20	20	10	30	20	10	10
Future Vol, veh/h	10	90	20	50	100	20	20	10	30	20	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	98	22	54	109	22	22	11	33	22	11	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.6	7.9	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	8%	29%	50%
Vol Thru, %	17%	75%	59%	25%
Vol Right, %	50%	17%	12%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	120	170	40
LT Vol	20	10	50	20
Through Vol	10	90	100	10
RT Vol	30	20	20	10
Lane Flow Rate	65	130	185	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.156	0.222	0.056
Departure Headway (Hd)	4.453	4.297	4.328	4.661
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	805	836	835	769
Service Time	2.474	2.315	2.328	2.684
HCM Lane V/C Ratio	0.081	0.156	0.222	0.056
HCM Control Delay	7.9	8.1	8.6	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.6	0.8	0.2

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	140	160	1090	540	20
Future Vol, veh/h	10	140	160	1090	540	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	149	170	1160	574	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2085	585	595	0	-	0
Stage 1	585	-	-	-	-	-
Stage 2	1500	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	58	511	981	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	48	511	981	-	-	-
Mov Cap-2 Maneuver	48	-	-	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	204	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.2	1.2	0
HCM LOS	D		

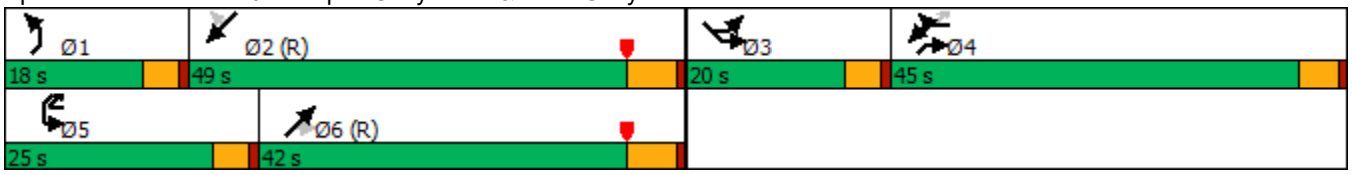
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	981	-	311	-	-
HCM Lane V/C Ratio	0.174	-	0.513	-	-
HCM Control Delay (s)	9.4	-	28.2	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.6	-	2.8	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	580	10	620	10	10	30	50	760	600	420	350	10
Future Volume (vph)	580	10	620	10	10	30	50	760	600	420	350	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1678	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.980		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1678	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			308		140				489			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	630	11	674	0	55	0	54	826	652	457	380	11
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	45.0	45.0	25.0	20.0	20.0		18.0	42.0	45.0	25.0	49.0	49.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	32.8	32.8	78.0		6.0		9.9	38.0	71.6	41.2	71.3	71.3
Actuated g/C Ratio	0.25	0.25	0.59		0.05		0.08	0.29	0.54	0.31	0.54	0.54
v/c Ratio	0.74	0.03	0.64		0.26		0.41	0.81	0.60	0.83	0.20	0.01
Control Delay	41.8	28.5	20.7		3.0		63.8	55.0	13.7	57.5	18.5	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	28.5	20.7		3.0		63.8	55.0	13.7	57.5	18.5	0.0
LOS	D	C	C		A		E	E	B	E	B	A
Approach Delay	30.9				3.0			37.7			39.3	
Approach LOS	C				A			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 50 (38%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

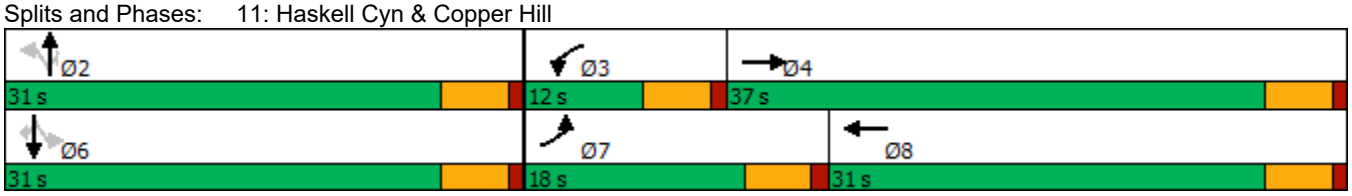


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1080	210	80	420	100	180	170	100	80	170	90
Future Volume (vph)	140	1080	210	80	420	100	180	170	100	80	170	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3454	0	1770	3437	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.636			0.636		
Satd. Flow (perm)	1770	3454	0	1770	3437	0	1185	1863	1583	1185	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			38				164			164
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	1316	0	82	531	0	184	173	102	82	173	92
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	18.0	37.0		12.0	31.0		31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	10.8	31.0		7.1	27.2		26.2	26.2	26.2	26.2	26.2	26.2
Actuated g/C Ratio	0.14	0.41		0.09	0.36		0.34	0.34	0.34	0.34	0.34	0.34
v/c Ratio	0.57	0.93		0.50	0.43		0.45	0.27	0.16	0.20	0.27	0.14
Control Delay	41.0	34.7		46.7	19.7		25.7	21.2	1.4	21.4	21.2	0.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	34.7		46.7	19.7		25.7	21.2	1.4	21.4	21.2	0.9
LOS	D	C		D	B		C	C	A	C	C	A
Approach Delay		35.3			23.3			18.6			15.8	
Approach LOS		D			C			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 76.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 27.7		Intersection LOS: C	
Intersection Capacity Utilization 78.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 11: Haskell Cyn & Copper Hill

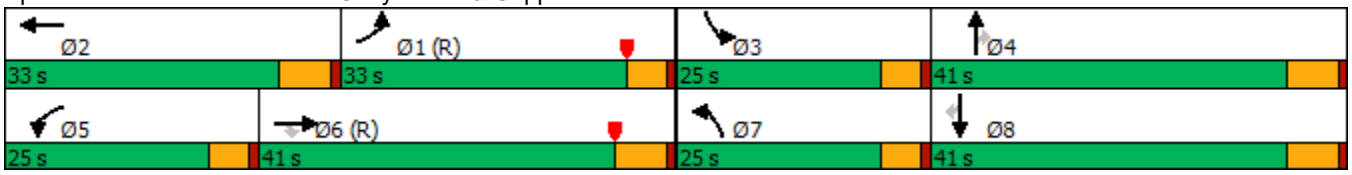


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	1230	160	140	660	60	190	170	120	70	130	180
Future Volume (vph)	390	1230	160	140	660	60	190	170	120	70	130	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	5024	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5024	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107		10				157			196
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	424	1337	174	152	782	0	207	185	130	76	141	196
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	33.0	41.0	41.0	25.0	33.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	43.8	60.0	60.0	13.0	29.2		13.3	33.7	33.7	12.5	29.7	29.7
Actuated g/C Ratio	0.33	0.45	0.45	0.10	0.22		0.10	0.26	0.26	0.09	0.22	0.22
v/c Ratio	0.37	0.83	0.22	0.45	0.70		0.60	0.39	0.25	0.46	0.34	0.39
Control Delay	43.7	40.7	20.2	60.3	50.1		64.2	42.6	3.9	65.6	43.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	40.7	20.2	60.3	50.1		64.2	42.6	3.9	65.6	43.3	7.2
LOS	D	D	C	E	D		E	D	A	E	D	A
Approach Delay		39.5			51.8			41.6			30.3	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 22 (17%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 41.8		Intersection LOS: D	
Intersection Capacity Utilization 73.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1780	280	480	730	50	400	190	920	50	120	70
Future Volume (vph)	150	1780	280	480	730	50	400	190	920	50	120	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	310		0	230		0	200		0
Storage Lanes	1		0	2		0	1		2	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	4984	0	3433	5034	0	3433	1863	2787	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4984	0	3433	5034	0	3433	1863	2787	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			11				77			124
Link Speed (mph)		50			50			50			30	
Link Distance (ft)		1501			578			607			382	
Travel Time (s)		20.5			7.9			8.3			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	2239	0	522	847	0	435	207	1000	54	130	76
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases									8			4
Total Split (s)	25.0	65.0		26.0	66.0		21.0	29.0	26.0	12.0	20.0	20.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		3.5	6.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	16.9	62.3		24.3	69.8		17.5	21.8	52.1	7.5	12.3	12.3
Actuated g/C Ratio	0.13	0.47		0.18	0.53		0.13	0.17	0.39	0.06	0.09	0.09
v/c Ratio	0.72	0.95		0.82	0.32		0.96	0.67	0.87	0.53	0.39	0.29
Control Delay	83.6	31.4		60.3	11.8		89.2	63.9	43.9	79.9	58.9	4.2
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0	48.2	0.0	0.0	0.0
Total Delay	83.6	31.4		60.3	11.8		89.2	63.9	92.1	79.9	58.9	4.2
LOS	F	C		E	B		F	E	F	E	E	A
Approach Delay		35.0			30.3			87.8			47.3	
Approach LOS		C			C			F			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 49.7		Intersection LOS: D	
Intersection Capacity Utilization 86.1%		ICU Level of Service E	
Analysis Period (min) 15			

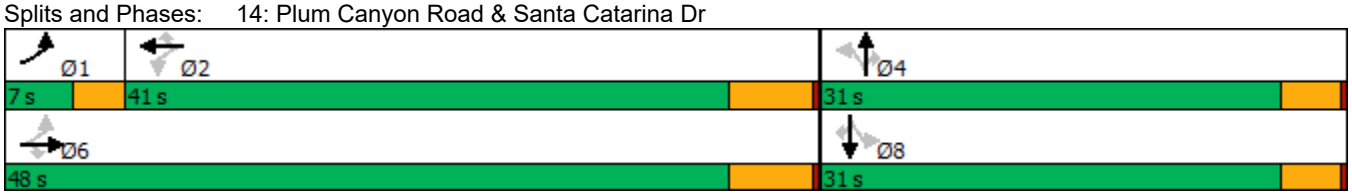
Splits and Phases: 13: McBean Parkway & Copperhill Drive

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	520	310	210	380	10	790	100	530	30	50	40
Future Volume (vph)	30	520	310	210	380	10	790	100	530	30	50	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1827	1583
Flt Permitted	0.269			0.440			0.701				0.897	
Satd. Flow (perm)	501	3539	1583	820	1863	1583	1306	1863	1583	0	1671	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			337			55			292			76
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	565	337	228	413	11	859	109	576	0	87	43
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	25.6	25.6	25.6	23.3	23.3	23.3	28.1	28.1	28.1		28.1	28.1
Actuated g/C Ratio	0.41	0.41	0.41	0.38	0.38	0.38	0.45	0.45	0.45		0.45	0.45
v/c Ratio	0.12	0.39	0.40	0.74	0.59	0.02	1.46	0.13	0.66		0.12	0.06
Control Delay	9.8	12.3	2.6	32.0	18.8	0.1	235.7	14.8	13.3		14.9	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	9.8	12.3	2.6	32.0	18.8	0.1	235.7	14.8	13.3		14.9	2.0
LOS	A	B	A	C	B	A	F	B	B		B	A
Approach Delay		8.8			23.1			137.2			10.6	
Approach LOS		A			C			F			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 62			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.46			
Intersection Signal Delay: 72.5		Intersection LOS: E	
Intersection Capacity Utilization 86.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

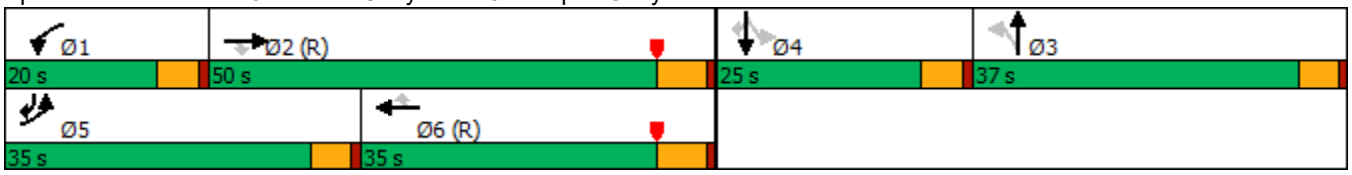


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	1320	20	20	840	190	10	20	10	230	10	230
Future Volume (vph)	420	1320	20	20	840	190	10	20	10	230	10	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1778	0	1681	1621	1504
Flt Permitted	0.950			0.950				0.912		0.263	0.279	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1641	0	465	473	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			169		11				250
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	457	1435	22	22	913	207	0	44	0	125	136	250
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	35.0	50.0	50.0	20.0	35.0	35.0	37.0	37.0		25.0	25.0	35.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	22.5	76.3	76.3	6.7	56.8	56.8		17.8		21.0	21.0	44.3
Actuated g/C Ratio	0.17	0.58	0.58	0.05	0.43	0.43		0.13		0.16	0.16	0.34
v/c Ratio	0.78	0.70	0.02	0.24	0.60	0.27		0.19		1.71	1.81	0.37
Control Delay	77.5	17.9	0.1	85.9	23.1	10.3		37.1		405.1	445.0	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	77.5	17.9	0.1	85.9	23.1	10.3		37.1		405.1	445.0	3.3
LOS	E	B	A	F	C	B		D		F	F	A
Approach Delay		32.0			22.0			37.1			219.1	
Approach LOS		C			C			D			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.81			
Intersection Signal Delay: 55.4		Intersection LOS: E	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

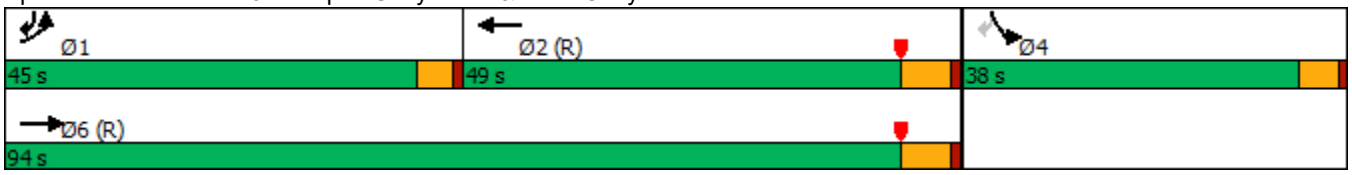


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	440	1660	1350	200	450	590
Future Volume (vph)	440	1660	1350	200	450	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	4989	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	4989	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			22			5
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	478	1804	1684	0	489	641
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	45.0	94.0	49.0		38.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	23.6	90.0	62.4		34.0	61.6
Actuated g/C Ratio	0.18	0.68	0.47		0.26	0.47
v/c Ratio	0.78	0.75	0.71		1.07	0.49
Control Delay	49.3	23.3	22.2		100.1	15.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	49.3	23.3	22.2		100.1	15.2
LOS	D	C	C		F	B
Approach Delay		28.7	22.2		51.9	
Approach LOS		C	C		D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 12 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 78.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

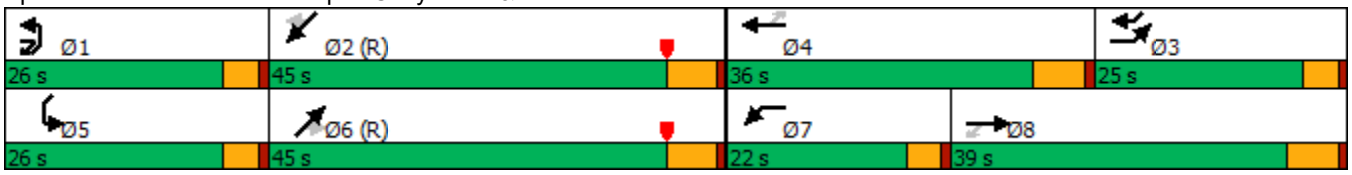


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	690	1700	460	300	1250	560	630	2000	630	420	1500	210
Future Volume (vph)	690	1700	460	300	1250	560	630	2000	630	420	1500	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			295			298			99
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	750	1848	500	326	1359	609	685	2174	685	457	1630	228
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	25.0	39.0	26.0	22.0	36.0	36.0	26.0	45.0	45.0	26.0	45.0	25.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	21.0	37.3	63.3	15.7	32.0	32.0	22.0	42.7	42.7	20.3	41.0	62.0
Actuated g/C Ratio	0.16	0.28	0.48	0.12	0.24	0.24	0.17	0.32	0.32	0.15	0.31	0.47
v/c Ratio	0.95	1.02	0.63	0.80	0.88	1.00	1.20	1.05	0.96	0.87	0.82	0.29
Control Delay	76.0	73.3	27.0	71.3	55.5	63.2	144.4	68.8	36.0	74.0	46.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.0	73.3	27.0	71.3	55.5	63.2	144.4	68.8	36.0	74.0	46.1	11.1
LOS	E	E	C	E	E	E	F	E	D	E	D	B
Approach Delay		66.5			59.8			77.1			48.1	
Approach LOS		E			E			E			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 55 (42%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 64.7	Intersection LOS: E
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

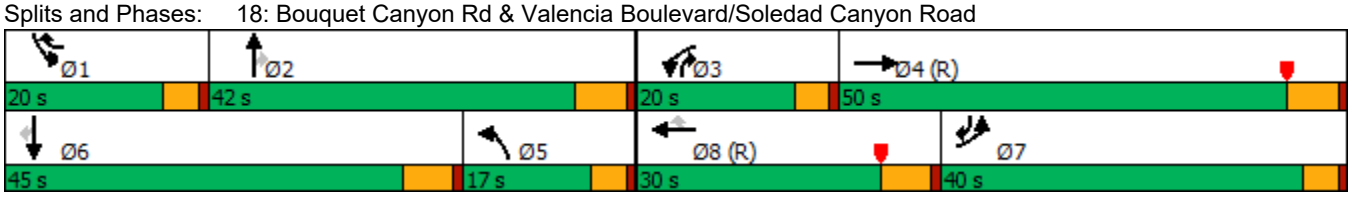


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1030	1470	20	410	1150	650	30	1870	500	440	1350	560
Future Volume (vph)	1030	1470	20	410	1150	650	30	1870	500	440	1350	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				124			112			451
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1120	1620	0	446	1250	707	33	2033	543	478	1467	609
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	40.0	50.0		20.0	30.0	20.0	17.0	42.0	20.0	20.0	45.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	36.0	46.2		15.8	26.0	42.0	10.4	38.0	57.8	16.0	47.8	87.8
Actuated g/C Ratio	0.27	0.35		0.12	0.20	0.32	0.08	0.29	0.44	0.12	0.36	0.67
v/c Ratio	0.82	0.91		0.75	1.25	1.20	0.24	1.39	0.72	1.15	0.80	0.30
Control Delay	51.1	49.7		64.8	163.9	130.0	59.7	216.0	30.0	123.6	54.9	5.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	49.7		64.8	163.9	130.0	59.7	216.0	30.0	123.6	54.9	5.8
LOS	D	D		E	F	F	E	F	C	F	D	A
Approach Delay		50.2			135.5			175.3			56.0	
Approach LOS		D			F			F			E	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 51 (39%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.39			
Intersection Signal Delay: 103.2		Intersection LOS: F	
Intersection Capacity Utilization 106.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

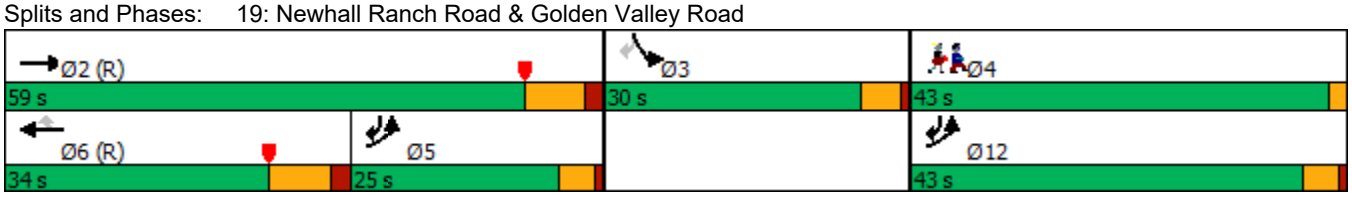


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	1520	3320	2980	1730	900	690			
Future Volume (vph)	1520	3320	2980	1730	900	690			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				343					
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	1652	3609	3239	1880	978	750			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	34.0	34.0	30.0		43.0	25.0	43.0
Total Lost Time (s)		4.0	4.0	4.0	4.0				
Act Effct Green (s)	58.0	55.0	30.0	30.0	26.0	94.5			
Actuated g/C Ratio	0.44	0.42	0.23	0.23	0.20	0.72			
v/c Ratio	1.10	1.70	2.80	3.01	1.45	0.38			
Control Delay	74.6	344.6	833.1	923.1	247.4	7.9			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	74.6	344.6	833.1	923.1	247.4	7.9			
LOS	E	F	F	F	F	A			
Approach Delay		259.9	866.1		143.5				
Approach LOS		F	F		F				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 79 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.01
Intersection Signal Delay: 499.6 Intersection LOS: F
Intersection Capacity Utilization 158.0% ICU Level of Service H
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

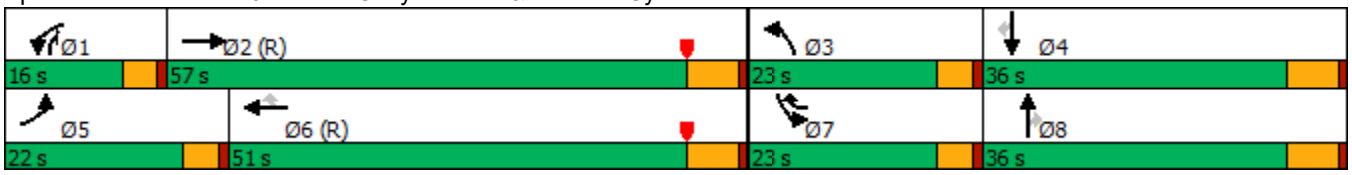


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1940	130	290	1350	330	420	940	340	360	560	170
Future Volume (vph)	250	1940	130	290	1350	330	420	940	340	360	560	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	5040	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5040	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				99			99			185
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	272	2250	0	315	1467	359	457	1022	370	391	609	185
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	22.0	57.0		16.0	51.0	23.0	23.0	36.0	16.0	23.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	14.3	53.0		12.0	50.7	72.4	18.7	33.4	49.4	17.6	32.3	32.3
Actuated g/C Ratio	0.11	0.40		0.09	0.38	0.55	0.14	0.25	0.37	0.13	0.24	0.24
v/c Ratio	0.74	1.11		1.01	1.08	0.39	0.94	1.14	0.57	0.85	0.70	0.35
Control Delay	82.5	76.7		122.2	72.3	2.3	83.9	122.1	27.8	85.9	37.4	3.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.5	76.7		122.2	72.3	2.3	83.9	122.1	27.8	85.9	37.4	3.7
LOS	F	E		F	E	A	F	F	C	F	D	A
Approach Delay		77.3			67.9			93.8			48.1	
Approach LOS		E			E			F			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 14 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 74.2		Intersection LOS: E	
Intersection Capacity Utilization 98.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn



Interim Year With Project

Intersection						
Int Delay, s/veh	170.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	740	20	52	212	10	390
Future Vol, veh/h	740	20	52	212	10	390
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	771	21	54	221	10	406

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	591	165	0	0	275	0
Stage 1	165	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 470	879	-	-	1288	-
Stage 1	864	-	-	-	-	-
Stage 2	~ 659	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 465	879	-	-	1288	-
Mov Cap-2 Maneuver	~ 465	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	~ 659	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 318.7	0	0.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	465	879	1288	-
HCM Lane V/C Ratio	-	-	1.658	0.024	0.008	-
HCM Control Delay (s)	-	-	$ 327.1	9.2	7.8	0
HCM Lane LOS	-	-	F	A	A	A
HCM 95th %tile Q(veh)	-	-	44.7	0.1	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1.8					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	141	36	524	1170	1
Future Vol, veh/h	5	141	36	524	1170	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	153	39	570	1272	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1636	637	1273	0	-	0
Stage 1	1273	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	92	420	541	-	-	-
Stage 1	227	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	85	420	541	-	-	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	211	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	19.5	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	541	-	85	420	-	-
HCM Lane V/C Ratio	0.072	-	0.064	0.365	-	-
HCM Control Delay (s)	12.2	-	50.2	18.4	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	1.6	-	-

Intersection						
Int Delay, s/veh	4.5					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	16	173	151	544	1276	34
Future Vol, veh/h	16	173	151	544	1276	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	188	164	591	1387	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2030	712	1424	0	-	0
Stage 1	1406	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	50	375	474	-	-	-
Stage 1	192	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	33	375	474	-	-	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	126	-	-	-	-	-
Stage 2	496	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	38.9	3.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	474	-	33	375	-	-
HCM Lane V/C Ratio	0.346	-	0.527	0.501	-	-
HCM Control Delay (s)	16.6	-	200.5	23.9	-	-
HCM Lane LOS	C	-	F	C	-	-
HCM 95th %tile Q(veh)	1.5	-	1.8	2.7	-	-

Intersection						
Int Delay, s/veh	15.4					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	20	281	736	30	100	90
Future Vol, veh/h	20	281	736	30	100	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	327	856	35	116	105

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1916	169	221	0	-	0
Stage 1	169	-	-	-	-	-
Stage 2	1747	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	74	875	1348	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	26	875	1348	-	-	-
Mov Cap-2 Maneuver	26	-	-	-	-	-
Stage 1	303	-	-	-	-	-
Stage 2	154	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	34.5	11.7	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1348	-	26	875	-	-
HCM Lane V/C Ratio	0.635	-	0.894	0.373	-	-
HCM Control Delay (s)	12.2	0	$ 357	11.5	-	-
HCM Lane LOS	B	A	F	B	-	-
HCM 95th %tile Q(veh)	4.8	-	2.8	1.7	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	10	10	766	381	10
Future Volume (vph)	10	10	10	766	381	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1615	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1615	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			851			11
Link Speed (mph)		30	30		25	
Link Distance (ft)		387	310		132	
Travel Time (s)		8.8	7.0		3.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	11	862	0	423	11
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	12.0	37.0	25.0		23.0	23.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	7.3	13.8	12.0		18.7	18.7
Actuated g/C Ratio	0.17	0.32	0.28		0.44	0.44
v/c Ratio	0.04	0.02	0.81		0.55	0.02
Control Delay	20.1	7.9	9.0		16.5	7.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	20.1	7.9	9.0		16.5	7.7
LOS	C	A	A		B	A
Approach Delay		14.0	9.0		16.3	
Approach LOS		B	A		B	

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 42.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Old Bouquet Cyn East & David

Intersection	
Intersection Delay, s/veh	177.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	271	10	10	806	10	10	10	10	20	30	90
Future Vol, veh/h	30	271	10	10	806	10	10	10	10	20	30	90
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	327	12	12	971	12	12	12	12	24	36	108
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	16	272.7	12	14
HCM LOS	C	F	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	33%	100%	0%	0%	100%	0%	0%	14%
Vol Thru, %	33%	0%	100%	0%	0%	100%	0%	21%
Vol Right, %	33%	0%	0%	100%	0%	0%	100%	64%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	30	271	10	10	806	10	140
LT Vol	10	30	0	0	10	0	0	20
Through Vol	10	0	271	0	0	806	0	30
RT Vol	10	0	0	10	0	0	10	90
Lane Flow Rate	36	36	327	12	12	971	12	169
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.076	0.065	0.542	0.018	0.021	1.568	0.017	0.317
Departure Headway (Hd)	8.626	7.119	6.608	5.893	6.32	5.813	5.103	7.738
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	418	506	549	611	570	631	705	467
Service Time	6.326	4.819	4.308	3.593	4.023	3.516	2.806	5.438
HCM Lane V/C Ratio	0.086	0.071	0.596	0.02	0.021	1.539	0.017	0.362
HCM Control Delay	12	10.3	16.9	8.7	9.2	279.3	7.9	14
HCM Lane LOS	B	B	C	A	A	F	A	B
HCM 95th-tile Q	0.2	0.2	3.2	0.1	0.1	51.1	0.1	1.3

Intersection						
Int Delay, s/veh	35.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	301	76	10	896	175	10
Future Vol, veh/h	301	76	10	896	175	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	89	12	1054	206	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	443	0	1432	354
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	1078	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1117	-	~ 148	690
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	327	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1117	-	~ 146	690
Mov Cap-2 Maneuver	-	-	-	-	~ 146	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	327	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	283
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	152	-	-	1117	-
HCM Lane V/C Ratio	1.432	-	-	0.011	-
HCM Control Delay (s)	283	-	-	8.3	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	14	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	96	10	30	145	10	30	10	60	20	20	10
Future Vol, veh/h	10	96	10	30	145	10	30	10	60	20	20	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	103	11	32	156	11	32	11	65	22	22	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	8.9	8.2	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	9%	16%	40%
Vol Thru, %	10%	83%	78%	40%
Vol Right, %	60%	9%	5%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	116	185	50
LT Vol	30	10	30	20
Through Vol	10	96	145	20
RT Vol	60	10	10	10
Lane Flow Rate	108	125	199	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.133	0.156	0.246	0.071
Departure Headway (Hd)	4.438	4.494	4.447	4.76
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	808	798	808	752
Service Time	2.468	2.522	2.473	2.794
HCM Lane V/C Ratio	0.134	0.157	0.246	0.072
HCM Control Delay	8.2	8.4	8.9	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.6	1	0.2

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	171	174	11	13	11
Future Vol, veh/h	10	171	174	11	13	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	184	187	12	14	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	406	20	26	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	601	1058	1588	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	530	1058	1588	-	-	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	687	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	7.1	0
HCM LOS	A		

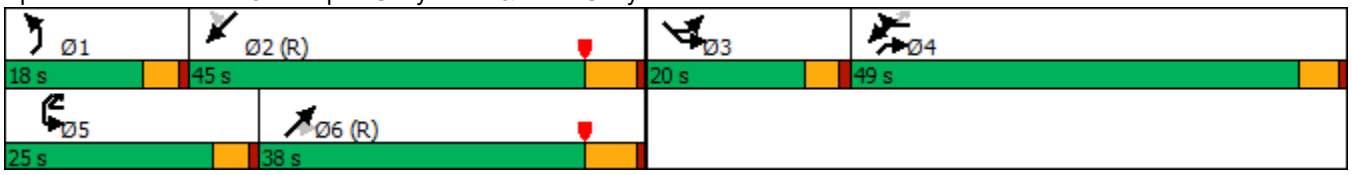
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1588	-	1003	-	-
HCM Lane V/C Ratio	0.118	-	0.194	-	-
HCM Control Delay (s)	7.6	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	590	10	302	10	10	50	20	235	500	500	825	10
Future Volume (vph)	590	10	302	10	10	50	20	235	500	500	825	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1660	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.986		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1660	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			328		140				483			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	641	11	328	0	76	0	22	255	543	543	897	11
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	49.0	49.0	25.0	20.0	20.0		18.0	38.0	49.0	25.0	45.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	33.4	33.4	82.0		6.0		7.7	34.0	68.2	44.6	75.0	75.0
Actuated g/C Ratio	0.25	0.25	0.62		0.05		0.06	0.26	0.52	0.34	0.57	0.57
v/c Ratio	0.74	0.03	0.30		0.36		0.21	0.28	0.52	0.91	0.45	0.01
Control Delay	57.9	43.4	4.1		4.8		79.2	38.2	10.3	63.5	19.9	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	43.4	4.1		4.8		79.2	38.2	10.3	63.5	19.9	0.0
LOS	E	D	A		A		E	D	B	E	B	A
Approach Delay	39.7				4.8			20.9			36.1	
Approach LOS	D				A			C			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 83 (63%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 32.7		Intersection LOS: C	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

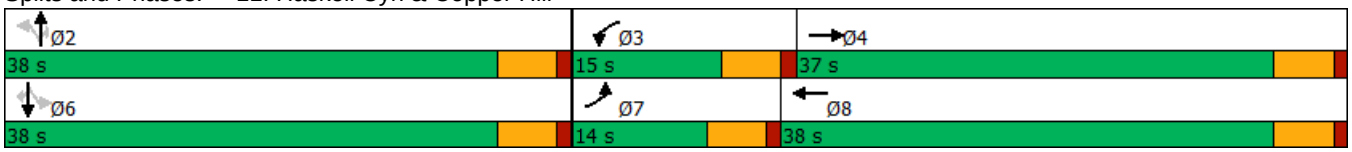


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	317	200	90	1089	90	190	130	20	80	360	190
Future Volume (vph)	140	317	200	90	1089	90	190	130	20	80	360	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3334	0	1770	3500	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.352			0.667		
Satd. Flow (perm)	1770	3334	0	1770	3500	0	656	1863	1583	1242	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		170			11				85			207
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	562	0	98	1282	0	207	141	22	87	391	207
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	14.0	37.0		15.0	38.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	9.0	35.3		9.1	33.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.10	0.39		0.10	0.37		0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.86	0.40		0.55	0.99		0.86	0.21	0.03	0.19	0.57	0.29
Control Delay	80.8	15.2		50.2	53.0		60.9	20.6	0.1	20.9	26.9	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	15.2		50.2	53.0		60.9	20.6	0.1	20.9	26.9	4.1
LOS	F	B		D	D		E	C	A	C	C	A
Approach Delay		29.2			52.8			41.9			19.3	
Approach LOS		C			D			D			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 38.9		Intersection LOS: D	
Intersection Capacity Utilization 86.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 11: Haskell Cyn & Copper Hill

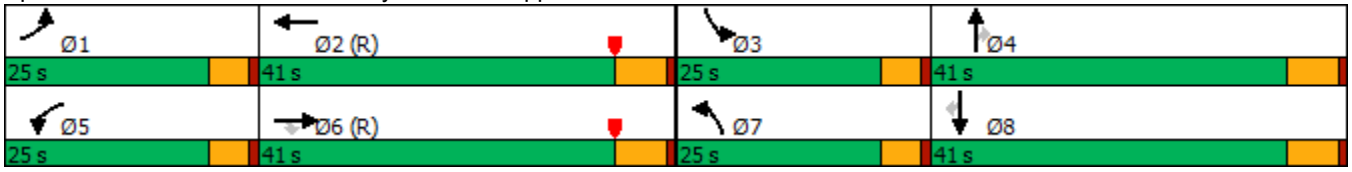


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	695	190	110	1473	20	250	100	80	90	210	510
Future Volume (vph)	160	695	190	110	1473	20	250	100	80	90	210	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	5075	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5075	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178		1				107			321
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	755	207	120	1623	0	272	109	87	98	228	554
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	25.0	41.0	41.0	25.0	41.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	12.6	56.6	56.6	12.4	56.4		15.2	33.7	33.7	13.3	31.8	31.8
Actuated g/C Ratio	0.10	0.43	0.43	0.09	0.43		0.12	0.26	0.26	0.10	0.24	0.24
v/c Ratio	0.53	0.50	0.27	0.37	0.75		0.69	0.23	0.18	0.55	0.51	0.89
Control Delay	61.8	34.3	14.1	59.6	36.3		65.4	37.7	4.3	68.4	46.0	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	34.3	14.1	59.6	36.3		65.4	37.7	4.3	68.4	46.0	36.2
LOS	E	C	B	E	D		E	D	A	E	D	D
Approach Delay		34.8			37.9			47.6			42.3	
Approach LOS		C			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 39.1	Intersection LOS: D
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive

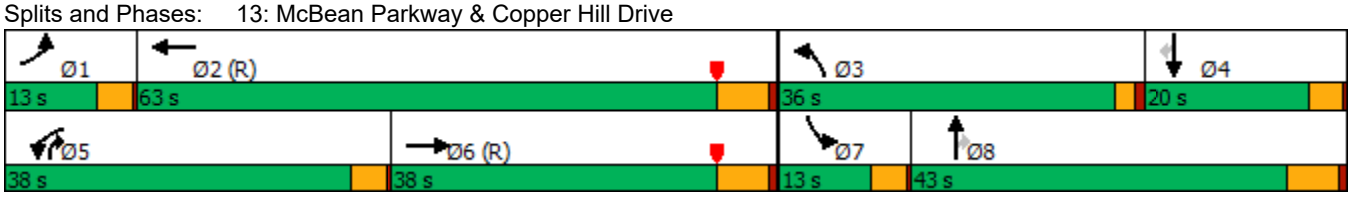


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	744	630	1134	1585	50	250	40	381	50	190	120
Future Volume (vph)	50	744	630	1134	1585	50	250	40	381	50	190	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	310		0	230		0	200		0
Storage Lanes	1		0	2		0	1		2	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	4734	0	3433	5060	0	3433	1863	2787	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4734	0	3433	5060	0	3433	1863	2787	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		156			4				171			149
Link Speed (mph)		50			50			50			30	
Link Distance (ft)		1501			578			607			504	
Travel Time (s)		20.5			7.9			8.3			11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	1494	0	1233	1777	0	272	43	414	54	207	130
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases									8			4
Total Split (s)	13.0	38.0		38.0	63.0		36.0	43.0	38.0	13.0	20.0	20.0
Total Lost Time (s)	4.0	4.0		3.0	4.0		1.0	6.0	3.0	4.0	4.0	4.0
Act Effct Green (s)	9.4	34.0		55.0	80.6		17.8	19.9	80.9	8.1	13.2	13.2
Actuated g/C Ratio	0.07	0.26		0.42	0.61		0.13	0.15	0.61	0.06	0.10	0.10
v/c Ratio	0.43	1.31dr		0.86	0.57		0.59	0.15	0.23	0.50	0.59	0.45
Control Delay	71.3	88.8		45.4	24.9		58.6	49.5	7.3	75.8	63.3	10.4
Queue Delay	0.0	0.1		0.0	0.6		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	88.8		45.4	25.5		58.6	49.5	7.3	75.8	63.3	10.4
LOS	E	F		D	C		E	D	A	E	E	B
Approach Delay		88.2			33.7			28.9			47.4	
Approach LOS		F			C			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 48.9 Intersection LOS: D
Intersection Capacity Utilization 86.6% ICU Level of Service E
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 13: McBean Parkway & Copper Hill Drive

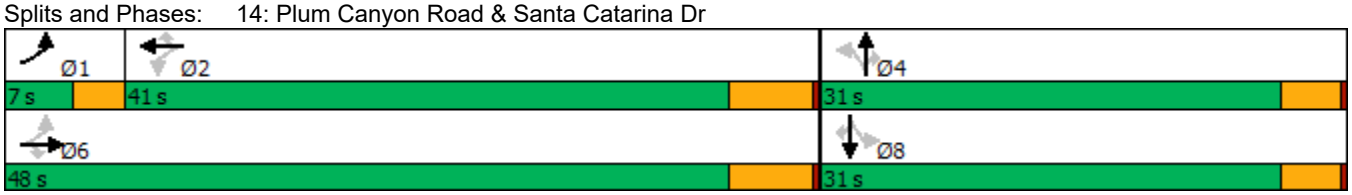


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	335	645	530	584	140	126	50	140	110	150	101
Future Volume (vph)	74	335	645	530	584	140	126	50	140	110	150	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1824	1583
Flt Permitted	0.237			0.535			0.398				0.839	
Satd. Flow (perm)	441	3539	1583	997	1863	1583	741	1863	1583	0	1563	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			592			103			152			81
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	364	701	576	635	152	137	54	152	0	283	110
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	42.9	42.9	42.9	37.6	37.6	37.6	17.5	17.5	17.5		17.5	17.5
Actuated g/C Ratio	0.63	0.63	0.63	0.55	0.55	0.55	0.26	0.26	0.26		0.26	0.26
v/c Ratio	0.24	0.16	0.58	1.05	0.62	0.17	0.73	0.11	0.29		0.71	0.24
Control Delay	8.2	6.4	3.8	75.9	16.1	4.8	46.0	19.7	5.3		33.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	8.2	6.4	3.8	75.9	16.1	4.8	46.0	19.7	5.3		33.7	9.0
LOS	A	A	A	E	B	A	D	B	A		C	A
Approach Delay		4.9			40.1			23.8			26.8	
Approach LOS		A			D			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 68.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 24.4		Intersection LOS: C	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

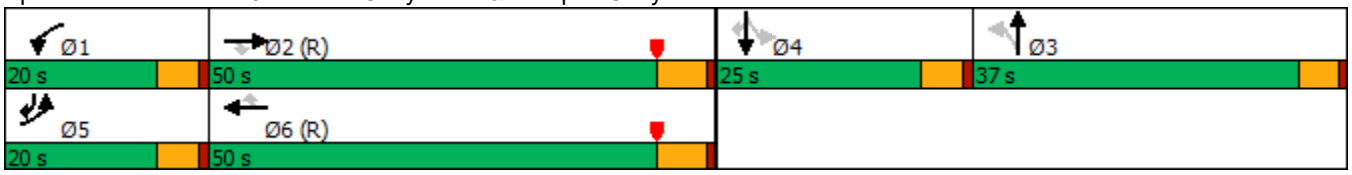


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	462	10	10	1492	232	10	10	10	210	10	520
Future Volume (vph)	160	462	10	10	1492	232	10	10	10	210	10	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1750	0	1681	1621	1504
Flt Permitted	0.950			0.950				0.890		0.338	0.359	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1583	0	598	609	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			136		11				435
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	174	502	11	11	1622	252	0	33	0	114	125	565
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	20.0	50.0	50.0	20.0	50.0	50.0	37.0	37.0		25.0	25.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	12.0	79.2	79.2	5.9	67.6	67.6		17.5		21.0	21.0	33.8
Actuated g/C Ratio	0.09	0.60	0.60	0.04	0.51	0.51		0.13		0.16	0.16	0.26
v/c Ratio	0.56	0.24	0.01	0.14	0.90	0.29		0.15		1.20	1.30	0.80
Control Delay	86.2	5.3	0.0	78.0	28.6	5.5		33.3		202.5	236.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	86.2	5.3	0.0	78.0	28.6	5.5		33.3		202.5	236.2	15.2
LOS	F	A	A	E	C	A		C		F	F	B
Approach Delay		25.7			25.8			33.3			76.1	
Approach LOS		C			C			C			E	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 103 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 76.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

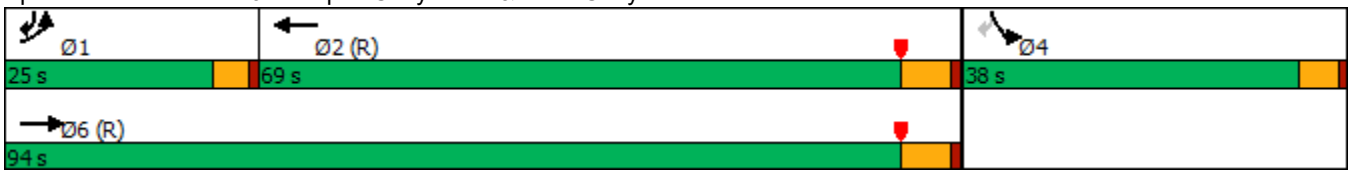


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	350	553	2453	371	285	830
Future Volume (vph)	350	553	2453	371	285	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	4984	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	4984	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			1
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	601	3069	0	310	902
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	25.0	94.0	69.0		38.0	25.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	19.6	95.5	71.9		28.5	52.1
Actuated g/C Ratio	0.15	0.72	0.54		0.22	0.39
v/c Ratio	0.75	0.23	1.12		0.81	0.82
Control Delay	44.5	10.3	71.1		58.0	49.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	44.5	10.3	71.1		58.0	49.3
LOS	D	B	E		E	D
Approach Delay		23.6	71.1		51.5	
Approach LOS		C	E		D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 57.7		Intersection LOS: E	
Intersection Capacity Utilization 91.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

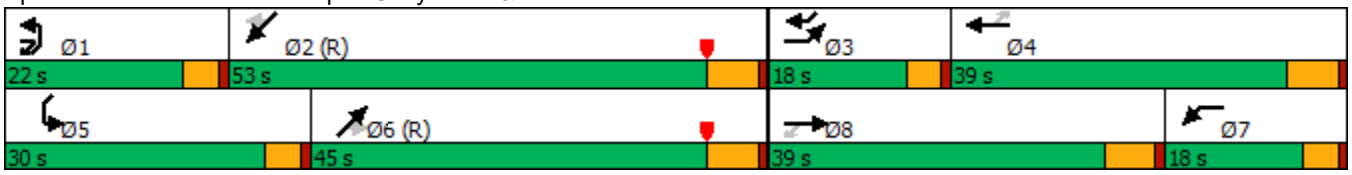


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	121	770	420	590	1790	70	380	700	140	300	2572	326
Future Volume (vph)	121	770	420	590	1790	70	380	700	140	300	2572	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			136			186			112
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	837	457	641	1946	76	413	761	152	326	2796	354
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	18.0	39.0	22.0	18.0	39.0	39.0	22.0	45.0	45.0	30.0	53.0	18.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	7.4	28.1	45.6	20.9	41.6	41.6	17.5	50.5	50.5	16.5	49.5	60.9
Actuated g/C Ratio	0.06	0.21	0.35	0.16	0.32	0.32	0.13	0.38	0.38	0.12	0.38	0.46
v/c Ratio	0.47	0.61	0.74	1.18	0.96	0.13	0.91	0.31	0.21	0.76	1.16	0.45
Control Delay	65.8	48.7	23.3	145.6	57.7	0.4	68.4	35.6	8.7	78.6	107.4	8.3
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	65.8	48.7	23.4	145.6	57.7	0.4	68.4	35.6	8.7	78.6	107.5	8.3
LOS	E	D	C	F	E	A	E	D	A	E	F	A
Approach Delay		42.2			77.2			42.7			94.7	
Approach LOS		D			E			D			F	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 105 (80%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 73.3	Intersection LOS: E
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

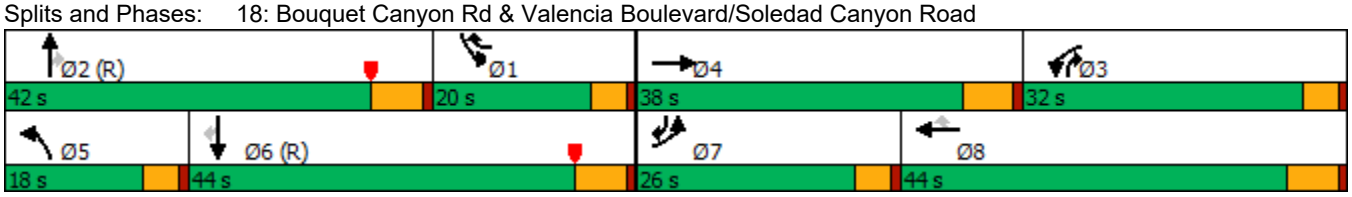


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	1060	40	540	720	480	20	495	270	762	1729	1449
Future Volume (vph)	325	1060	40	540	720	480	20	495	270	762	1729	1449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5060	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5060	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				99			112			478
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	353	1195	0	587	783	522	22	538	293	828	1879	1575
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	26.0	38.0		32.0	44.0	20.0	18.0	42.0	32.0	20.0	44.0	26.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	22.0	34.0		22.4	34.4	50.4	7.7	43.6	70.0	16.0	56.0	82.0
Actuated g/C Ratio	0.17	0.26		0.17	0.26	0.38	0.06	0.33	0.53	0.12	0.42	0.62
v/c Ratio	0.42	0.92		0.69	0.59	0.78	0.21	0.32	0.33	1.99	0.87	0.82
Control Delay	51.1	59.0		55.8	44.3	27.8	63.5	34.4	11.5	475.6	24.6	15.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	59.0		55.8	44.3	27.8	63.5	34.4	11.5	475.6	24.6	15.6
LOS	D	E		E	D	C	E	C	B	F	C	B
Approach Delay		57.2			43.3			27.3			108.5	
Approach LOS		E			D			C			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 117 (89%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.99			
Intersection Signal Delay: 76.8		Intersection LOS: E	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

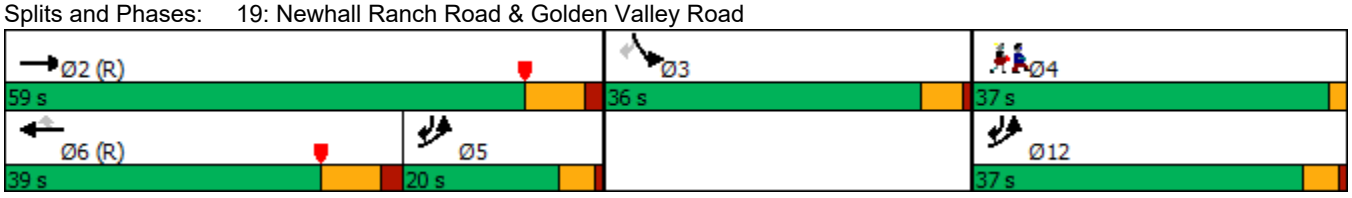


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	530	1840	2600	585	1821	1740			
Future Volume (vph)	530	1840	2600	585	1821	1740			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				153					
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	576	2000	2826	636	1979	1891			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	39.0	39.0	36.0		37.0	20.0	37.0
Total Lost Time (s)		4.0	4.0	8.0	4.0				
Act Effct Green (s)	49.0	55.0	35.0	31.0	32.0	89.5			
Actuated g/C Ratio	0.37	0.42	0.27	0.23	0.24	0.68			
v/c Ratio	0.45	0.94	2.10	1.30	2.38	1.00			
Control Delay	15.7	37.2	520.6	174.2	647.5	42.5			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	15.7	37.2	520.6	174.2	647.5	42.5			
LOS	B	D	F	F	F	D			
Approach Delay		32.4	457.0		351.9				
Approach LOS		C	F		F				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 106 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.38
Intersection Signal Delay: 305.5 Intersection LOS: F
Intersection Capacity Utilization 127.3% ICU Level of Service H
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

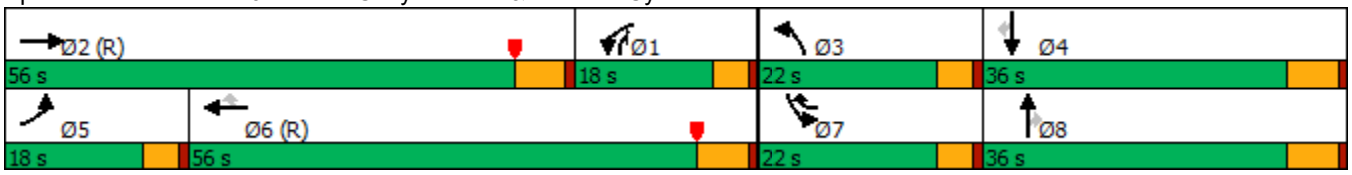


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	760	80	380	1830	280	90	550	190	342	662	180
Future Volume (vph)	90	760	80	380	1830	280	90	550	190	342	662	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	5014	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5014	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				129			99			196
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	913	0	413	1989	304	98	598	207	372	720	196
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	18.0	56.0		18.0	56.0	22.0	22.0	36.0	18.0	22.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	7.7	55.5		14.0	61.8	82.6	7.7	29.7	43.7	16.8	38.8	38.8
Actuated g/C Ratio	0.06	0.42		0.11	0.47	0.63	0.06	0.22	0.33	0.13	0.29	0.29
v/c Ratio	0.49	0.43		1.13	1.20	0.29	0.49	0.75	0.35	0.85	0.69	0.33
Control Delay	85.9	6.7		118.7	115.5	4.9	68.2	54.1	11.3	93.3	32.9	5.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.9	6.7		118.7	115.5	4.9	68.2	54.1	11.3	93.3	32.9	5.4
LOS	F	A		F	F	A	E	D	B	F	C	A
Approach Delay		14.3			103.6			45.8			46.2	
Approach LOS		B			F			D			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 121 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 67.0		Intersection LOS: E	
Intersection Capacity Utilization 92.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	211	200	204	325	971	560
Future Volume (vph)	211	200	204	325	971	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0	150			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	1863	1771	0
Flt Permitted	0.950		0.051			
Satd. Flow (perm)	1770	1583	95	1863	1771	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		158			67	
Link Speed (mph)	30			30	30	
Link Distance (ft)	327			417	272	
Travel Time (s)	7.4			9.5	6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	229	217	222	353	1664	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Total Split (s)	26.0	26.0	84.0	84.0	84.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	17.7	17.7	79.1	79.1	79.1	
Actuated g/C Ratio	0.17	0.17	0.74	0.74	0.74	
v/c Ratio	0.78	0.55	3.17	0.26	1.25	
Control Delay	61.3	18.0	1027.6	5.3	138.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.3	18.0	1027.6	5.3	138.4	
LOS	E	B	F	A	F	
Approach Delay	40.3			400.0	138.4	
Approach LOS	D			F	F	

Intersection Summary

Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 106.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 3.17			
Intersection Signal Delay: 178.1		Intersection LOS: F	
Intersection Capacity Utilization 120.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	380	1	4	760	6	31
Future Vol, veh/h	380	1	4	760	6	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	413	1	4	826	7	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	414	0	1248	414
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	834	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1145	-	191	638
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1145	-	190	638
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	462	-	-	1145	-
HCM Lane V/C Ratio	0.087	-	-	0.004	-
HCM Control Delay (s)	13.5	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection						
Int Delay, s/veh	14.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	252	30	451	821	10	112
Future Vol, veh/h	252	30	451	821	10	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	30	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	257	31	460	838	10	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1013	879	0	0	1298	0
Stage 1	879	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	265	347	-	-	534	-
Stage 1	406	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	260	347	-	-	534	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	892	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	86.5	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	260	347	534	-
HCM Lane V/C Ratio	-	-	0.989	0.088	0.019	-
HCM Control Delay (s)	-	-	94.9	16.4	11.9	0
HCM Lane LOS	-	-	F	C	B	A
HCM 95th %tile Q(veh)	-	-	9.6	0.3	0.1	-

Intersection						
Int Delay, s/veh	1.3					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	3	88	149	1124	576	5
Future Vol, veh/h	3	88	149	1124	576	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	96	162	1222	626	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1564	316	631	0	-	0
Stage 1	629	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	102	680	947	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	85	680	947	-	-	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	342	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.4	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	947	-	85	680	-	-
HCM Lane V/C Ratio	0.171	-	0.038	0.141	-	-
HCM Control Delay (s)	9.6	-	49	11.2	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.1	0.5	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	36	142	163	1238	629	35
Future Vol, veh/h	36	142	163	1238	629	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	154	177	1346	684	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1730	361	722	0	-	0
Stage 1	703	-	-	-	-	-
Stage 2	1027	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	79	636	876	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	63	636	876	-	-	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	361	-	-	-	-	-
Stage 2	306	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	36.1	1.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	876	-	63	636	-	-
HCM Lane V/C Ratio	0.202	-	0.621	0.243	-	-
HCM Control Delay (s)	10.1	-	129.3	12.5	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	2.6	0.9	-	-

Intersection						
Int Delay, s/veh	15.5					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	40	736	253	70	60	50
Future Vol, veh/h	40	736	253	70	60	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	775	266	74	63	53

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	696	90	116	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	408	968	1473	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	331	968	1473	-	-	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	545	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	21.5	6.3	0
HCM LOS	C		

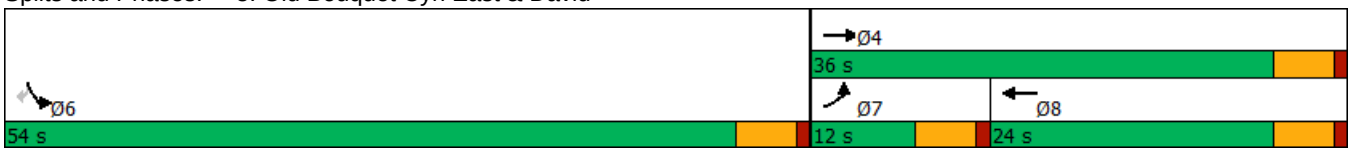
Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	1473	-	331	968	-	-
HCM Lane V/C Ratio	0.181	-	0.127	0.8	-	-
HCM Control Delay (s)	8	0	17.5	21.7	-	-
HCM Lane LOS	A	A	C	C	-	-
HCM 95th %tile Q(veh)	0.7	-	0.4	8.8	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	10	10	323	796	10
Future Volume (vph)	10	10	10	323	796	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	1863	1619	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1619	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			333			10
Link Speed (mph)		30	30		25	
Link Distance (ft)		387	310		132	
Travel Time (s)		8.8	7.0		3.6	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	10	343	0	821	10
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Total Split (s)	12.0	36.0	24.0		54.0	54.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	7.1	11.0	9.1		49.6	49.6
Actuated g/C Ratio	0.10	0.16	0.13		0.70	0.70
v/c Ratio	0.06	0.03	0.69		0.66	0.01
Control Delay	33.6	23.2	12.2		11.7	3.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	33.6	23.2	12.2		11.7	3.8
LOS	C	C	B		B	A
Approach Delay		28.4	12.2		11.6	
Approach LOS		C	B		B	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 70.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Old Bouquet Cyn East & David



Intersection	
Intersection Delay, s/veh	97
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	746	50	10	273	20	10	30	10	20	20	50
Future Vol, veh/h	80	746	50	10	273	20	10	30	10	20	20	50
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	838	56	11	307	22	11	34	11	22	22	56
Number of Lanes	1	1	1	1	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	139.1	14.8	11.6	12
HCM LOS	F	B	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	20%	100%	0%	0%	100%	0%	0%	22%
Vol Thru, %	60%	0%	100%	0%	0%	100%	0%	22%
Vol Right, %	20%	0%	0%	100%	0%	0%	100%	56%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	80	746	50	10	273	20	90
LT Vol	10	80	0	0	10	0	0	20
Through Vol	30	0	746	0	0	273	0	20
RT Vol	10	0	0	50	0	0	20	50
Lane Flow Rate	56	90	838	56	11	307	22	101
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.115	0.151	1.294	0.076	0.02	0.513	0.033	0.195
Departure Headway (Hd)	7.879	6.064	5.558	4.851	6.818	6.31	5.6	7.482
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	458	594	662	742	528	574	643	482
Service Time	5.579	3.773	3.267	2.56	4.518	4.01	3.3	5.182
HCM Lane V/C Ratio	0.122	0.152	1.266	0.075	0.021	0.535	0.034	0.21
HCM Control Delay	11.6	9.9	161.7	8	9.7	15.5	8.5	12
HCM Lane LOS	B	A	F	A	A	C	A	B
HCM 95th-tile Q	0.4	0.5	33.2	0.2	0.1	2.9	0.1	0.7

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	866	127	10	323	96	10
Future Vol, veh/h	866	127	10	323	96	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	921	135	11	344	102	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1056	0	1287	921
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	659	-	181	328
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	659	-	178	328
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	381	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	50.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	186	-	-	659	-
HCM Lane V/C Ratio	0.606	-	-	0.016	-
HCM Control Delay (s)	50.3	-	-	10.6	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	3.4	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	117	20	50	116	20	20	10	30	20	10	10
Future Vol, veh/h	10	117	20	50	116	20	20	10	30	20	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	127	22	54	126	22	22	11	33	22	11	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	8.8	8	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	7%	27%	50%
Vol Thru, %	17%	80%	62%	25%
Vol Right, %	50%	14%	11%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	147	186	40
LT Vol	20	10	50	20
Through Vol	10	117	116	10
RT Vol	30	20	20	10
Lane Flow Rate	65	160	202	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.083	0.193	0.244	0.058
Departure Headway (Hd)	4.56	4.338	4.35	4.77
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	786	828	827	751
Service Time	2.585	2.358	2.37	2.797
HCM Lane V/C Ratio	0.083	0.193	0.244	0.057
HCM Control Delay	8	8.4	8.8	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.7	1	0.2

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	166	185	13	12	21
Future Vol, veh/h	12	166	185	13	12	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	177	197	14	13	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	432	24	35	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	581	1052	1576	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	508	1052	1576	-	-	-
Mov Cap-2 Maneuver	508	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	671	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	7.1	0
HCM LOS	A		

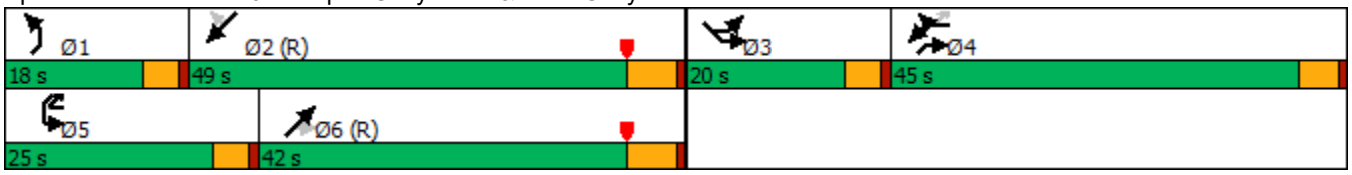
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1576	-	981	-	-
HCM Lane V/C Ratio	0.125	-	0.193	-	-
HCM Control Delay (s)	7.6	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	-	-

Lane Group	WBL	WBR	WBR2	SEL2	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	580	10	673	10	10	30	50	871	600	450	414	10
Future Volume (vph)	580	10	673	10	10	30	50	871	600	450	414	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290	0			0	0	55		0	100		0
Storage Lanes	2	1			0	0	1		1	1		1
Taper Length (ft)	25				25		25			25		
Satd. Flow (prot)	3433	1583	1583	0	1678	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950				0.980		0.950			0.950		
Satd. Flow (perm)	3433	1583	1583	0	1678	0	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			301		140				487			91
Link Speed (mph)	45				45			50			50	
Link Distance (ft)	1442				341			1453			2198	
Travel Time (s)	21.8				5.2			19.8			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	630	11	732	0	55	0	54	947	652	489	450	11
Turn Type	Prot	Prot	pm+ov	Prot	Prot		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	4	4	5	3	3		1	6	4	5	2	
Permitted Phases			4						6		2	2
Total Split (s)	45.0	45.0	25.0	20.0	20.0		18.0	42.0	45.0	25.0	49.0	49.0
Total Lost Time (s)	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	32.8	32.8	78.0		6.0		9.9	38.0	71.6	41.2	71.3	71.3
Actuated g/C Ratio	0.25	0.25	0.59		0.05		0.08	0.29	0.54	0.31	0.54	0.54
v/c Ratio	0.74	0.03	0.69		0.26		0.41	0.93	0.60	0.89	0.24	0.01
Control Delay	41.9	29.3	23.7		3.0		63.2	64.9	13.8	63.4	18.9	0.0
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	29.3	23.7		3.0		63.2	64.9	13.8	63.4	18.9	0.0
LOS	D	C	C		A		E	E	B	E	B	A
Approach Delay	32.1				3.0			44.7			41.6	
Approach LOS	C				A			D			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 50 (38%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 39.1	Intersection LOS: D
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Bouquet Canyon Rd & Plum Canyon Road

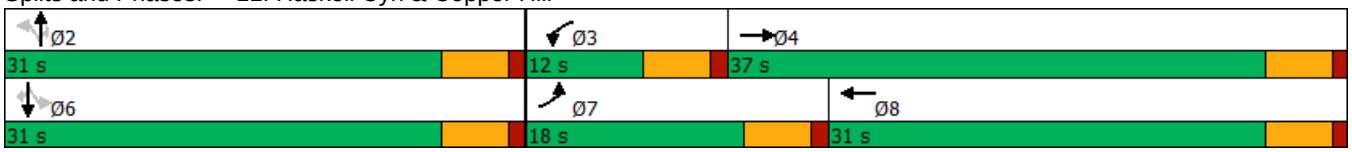


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1111	210	80	438	100	180	170	100	80	170	90
Future Volume (vph)	140	1111	210	80	438	100	180	170	100	80	170	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	175		0	230		180	130		130
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3454	0	1770	3440	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.635			0.635		
Satd. Flow (perm)	1770	3454	0	1770	3440	0	1183	1863	1583	1183	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			36				164			164
Link Speed (mph)		50			45			45			45	
Link Distance (ft)		472			450			495			450	
Travel Time (s)		6.4			6.8			7.5			6.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	1348	0	82	549	0	184	173	102	82	173	92
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Total Split (s)	18.0	37.0		12.0	31.0		31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	10.8	31.5		7.0	27.8		26.2	26.2	26.2	26.2	26.2	26.2
Actuated g/C Ratio	0.14	0.41		0.09	0.36		0.34	0.34	0.34	0.34	0.34	0.34
v/c Ratio	0.58	0.94		0.51	0.44		0.46	0.27	0.16	0.20	0.27	0.14
Control Delay	41.2	36.7		47.0	19.9		25.8	21.2	1.4	21.4	21.2	0.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	36.7		47.0	19.9		25.8	21.2	1.4	21.4	21.2	0.9
LOS	D	D		D	B		C	C	A	C	C	A
Approach Delay		37.1			23.4			18.7			15.9	
Approach LOS		D			C			B			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 77			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 28.8		Intersection LOS: C	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 11: Haskell Cyn & Copper Hill

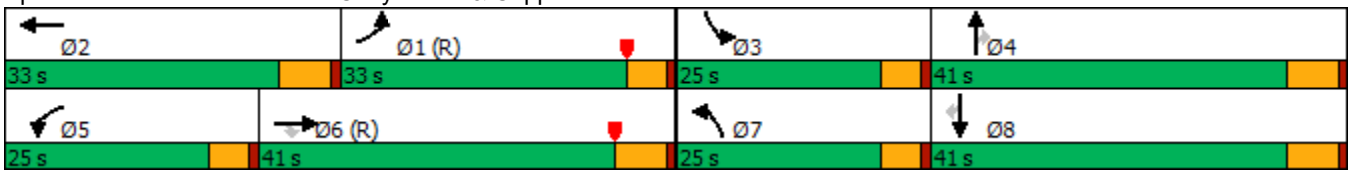


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	1254	160	140	674	60	190	170	120	70	130	180
Future Volume (vph)	390	1254	160	140	674	60	190	170	120	70	130	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		200	150		0	200		0	100		100
Storage Lanes	2		1	2		0	2		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	3433	5024	0	3433	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5024	0	3433	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107		10				157			196
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		2641			1162			747			714	
Travel Time (s)		36.0			15.8			11.3			10.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	424	1363	174	152	798	0	207	185	130	76	141	196
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Total Split (s)	33.0	41.0	41.0	25.0	33.0		25.0	41.0	41.0	25.0	41.0	41.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	43.5	60.0	60.0	13.0	29.5		13.3	33.7	33.7	12.5	29.7	29.7
Actuated g/C Ratio	0.33	0.45	0.45	0.10	0.22		0.10	0.26	0.26	0.09	0.22	0.22
v/c Ratio	0.37	0.85	0.22	0.45	0.71		0.60	0.39	0.25	0.46	0.34	0.39
Control Delay	44.1	41.2	20.3	60.3	50.1		64.2	42.6	3.9	65.6	43.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	41.2	20.3	60.3	50.1		64.2	42.6	3.9	65.6	43.3	7.2
LOS	D	D	C	E	D		E	D	A	E	D	A
Approach Delay		40.0			51.7			41.6			30.3	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 22 (17%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 42.1	Intersection LOS: D
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: Seco Canyon Rd & Copper Hill Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1796	280	482	739	50	400	190	924	50	120	70
Future Volume (vph)	150	1796	280	482	739	50	400	190	924	50	120	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	310		0	230		0	200		0
Storage Lanes	1		0	2		0	1		2	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	4984	0	3433	5040	0	3433	1863	2787	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4984	0	3433	5040	0	3433	1863	2787	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			11				77			124
Link Speed (mph)		50			50			50			30	
Link Distance (ft)		1501			578			607			382	
Travel Time (s)		20.5			7.9			8.3			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	2256	0	524	857	0	435	207	1004	54	130	76
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases									8			4
Total Split (s)	25.0	65.0		26.0	66.0		21.0	29.0	26.0	12.0	20.0	20.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		3.5	6.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	16.9	62.3		24.4	69.8		17.5	21.8	52.1	7.5	12.3	12.3
Actuated g/C Ratio	0.13	0.47		0.18	0.53		0.13	0.17	0.39	0.06	0.09	0.09
v/c Ratio	0.72	0.95		0.83	0.32		0.96	0.67	0.88	0.53	0.39	0.29
Control Delay	83.6	32.4		60.7	11.7		89.2	63.9	44.2	79.9	58.9	4.2
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0	48.2	0.0	0.0	0.0
Total Delay	83.6	32.4		60.7	11.7		89.2	63.9	92.4	79.9	58.9	4.2
LOS	F	C		E	B		F	E	F	E	E	A
Approach Delay		35.9			30.3			88.0			47.3	
Approach LOS		D			C			F			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 50.1	Intersection LOS: D
Intersection Capacity Utilization 86.6%	ICU Level of Service E
Analysis Period (min) 15	

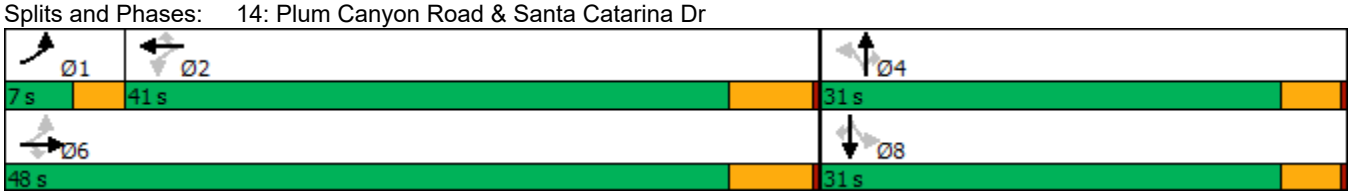
Splits and Phases: 13: McBean Parkway & Copperhill Drive

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	529	325	210	396	10	816	100	530	30	50	44
Future Volume (vph)	32	529	325	210	396	10	816	100	530	30	50	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		100	100		100	0		50
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	1863	1583	0	1827	1583
Flt Permitted	0.253			0.436			0.701				0.897	
Satd. Flow (perm)	471	3539	1583	812	1863	1583	1306	1863	1583	0	1671	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			353			55			285			76
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		3195			2293			419			614	
Travel Time (s)		48.4			34.7			6.3			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	575	353	228	430	11	887	109	576	0	87	48
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Total Split (s)	7.0	48.0	48.0	41.0	41.0	41.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	25.9	25.9	25.9	23.6	23.6	23.6	28.0	28.0	28.0		28.0	28.0
Actuated g/C Ratio	0.42	0.42	0.42	0.38	0.38	0.38	0.45	0.45	0.45		0.45	0.45
v/c Ratio	0.13	0.39	0.41	0.74	0.61	0.02	1.51	0.13	0.66		0.12	0.06
Control Delay	10.0	12.4	2.6	32.3	19.3	0.1	259.0	14.9	13.7		14.9	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	10.0	12.4	2.6	32.3	19.3	0.1	259.0	14.9	13.7		14.9	2.4
LOS	A	B	A	C	B	A	F	B	B		B	A
Approach Delay		8.7			23.4			152.2			10.5	
Approach LOS		A			C			F			B	

Intersection Summary

Area Type:	Other		
Cycle Length: 79			
Actuated Cycle Length: 62.2			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.51			
Intersection Signal Delay: 79.3		Intersection LOS: E	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 14: Plum Canyon Road & Santa Catarina Dr

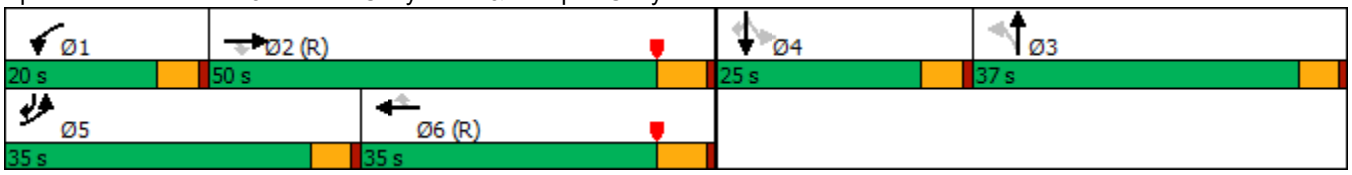


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	1417	20	20	896	191	10	20	10	230	10	230
Future Volume (vph)	420	1417	20	20	896	191	10	20	10	230	10	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	0		0	100		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	0	1778	0	1681	1621	1504
Flt Permitted	0.950			0.950				0.912		0.263	0.279	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	0	1641	0	465	473	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			159		11				250
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1201			2421			150			1951	
Travel Time (s)		16.4			33.0			2.3			29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										50%		0%
Lane Group Flow (vph)	457	1540	22	22	974	208	0	44	0	125	136	250
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			3			4	5
Permitted Phases			2			6	3			4		4
Total Split (s)	35.0	50.0	50.0	20.0	35.0	35.0	37.0	37.0		25.0	25.0	35.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Act Effct Green (s)	22.5	76.3	76.3	6.7	56.8	56.8		17.8		21.0	21.0	44.3
Actuated g/C Ratio	0.17	0.58	0.58	0.05	0.43	0.43		0.13		0.16	0.16	0.34
v/c Ratio	0.78	0.75	0.02	0.24	0.64	0.27		0.19		1.71	1.81	0.37
Control Delay	76.2	20.0	0.0	86.8	24.5	10.4		37.1		405.1	445.0	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	76.2	20.0	0.0	86.8	24.5	10.4		37.1		405.1	445.0	3.3
LOS	E	C	A	F	C	B		D		F	F	A
Approach Delay		32.5			23.2			37.1			219.1	
Approach LOS		C			C			D			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.81			
Intersection Signal Delay: 54.9		Intersection LOS: D	
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Haskell Canyon Rd & Bouquet Canyon Rd

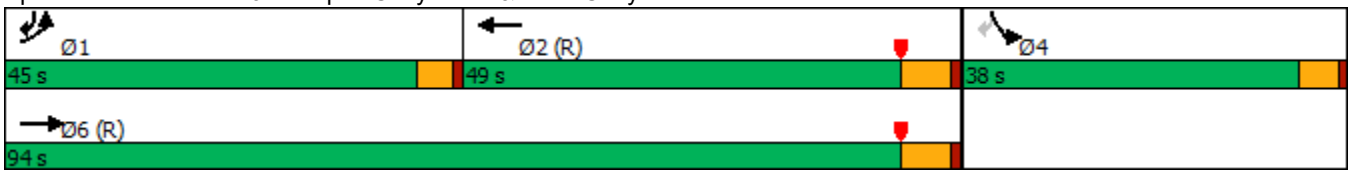


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	440	1717	1383	213	472	590
Future Volume (vph)	440	1717	1383	213	472	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	535			0	50	0
Storage Lanes	1			0	1	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	3539	4984	0	1770	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	3539	4984	0	1770	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			24			4
Link Speed (mph)		50	50		45	
Link Distance (ft)		1702	2228		1689	
Travel Time (s)		23.2	30.4		25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	478	1866	1735	0	513	641
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases						4
Total Split (s)	45.0	94.0	49.0		38.0	45.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Act Effct Green (s)	23.6	90.0	62.4		34.0	61.6
Actuated g/C Ratio	0.18	0.68	0.47		0.26	0.47
v/c Ratio	0.78	0.77	0.73		1.13	0.49
Control Delay	49.3	24.4	23.0		117.3	14.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	49.3	24.4	23.0		117.3	14.7
LOS	D	C	C		F	B
Approach Delay		29.5	23.0		60.3	
Approach LOS		C	C		E	

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 12 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 34.1 Intersection LOS: C
Intersection Capacity Utilization 80.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 16: Bouquet Canyon Rd & Seco Canyon Rd

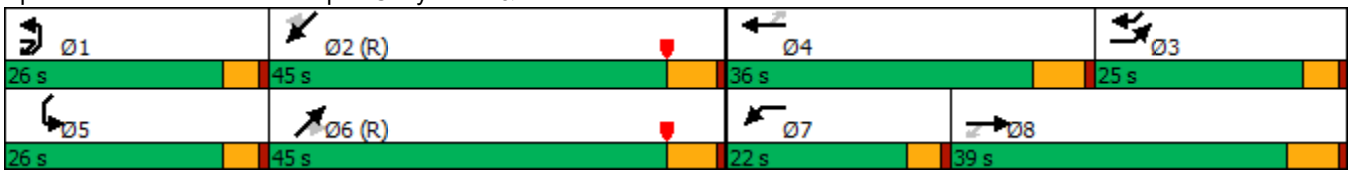


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	696	1700	460	300	1250	560	630	2044	630	420	1526	214
Future Volume (vph)	696	1700	460	300	1250	560	630	2044	630	420	1526	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	270		265	280		340	300		0	300		230
Storage Lanes	3		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	3433	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			295			298			99
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		870			745			958			564	
Travel Time (s)		13.2			11.3			14.5			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	757	1848	500	326	1359	609	685	2222	685	457	1659	233
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	25.0	39.0	26.0	22.0	36.0	36.0	26.0	45.0	45.0	26.0	45.0	25.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	21.0	37.3	63.3	15.7	32.0	32.0	22.0	42.7	42.7	20.3	41.0	62.0
Actuated g/C Ratio	0.16	0.28	0.48	0.12	0.24	0.24	0.17	0.32	0.32	0.15	0.31	0.47
v/c Ratio	0.95	1.02	0.63	0.80	0.88	1.00	1.20	1.07	0.96	0.87	0.83	0.29
Control Delay	77.6	73.3	27.0	71.3	55.5	63.2	143.8	77.2	35.4	73.4	46.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.6	73.3	27.0	71.3	55.5	63.2	143.8	77.2	35.4	73.4	46.6	11.3
LOS	E	E	C	E	E	E	F	E	D	E	D	B
Approach Delay		66.9			59.8			82.0			48.3	
Approach LOS		E			E			F			D	

Intersection Summary

Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 132	
Offset: 55 (42%), Referenced to phase 2:SWT and 6:NET, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 66.4	Intersection LOS: E
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Bouquet Canyon Rd & Newhall Ranch Rd

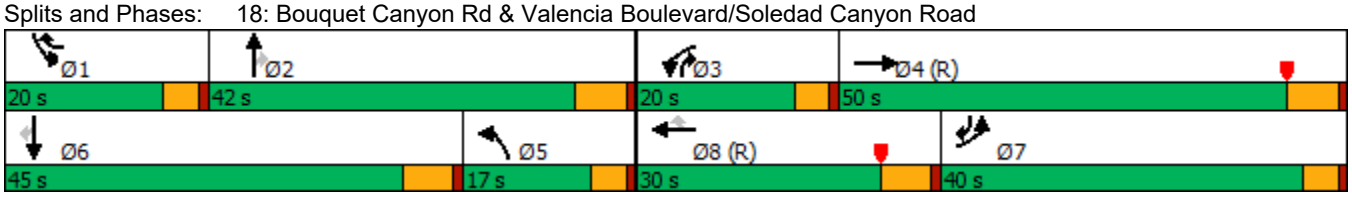


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1050	1470	20	410	1150	652	30	1890	500	441	1362	572
Future Volume (vph)	1050	1470	20	410	1150	652	30	1890	500	441	1362	572
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	5075	0	4990	5085	1583	1770	5085	1583	3433	5085	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				124			112			451
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2140			2337			1199			1017	
Travel Time (s)		32.4			35.4			18.2			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1141	1620	0	446	1250	709	33	2054	543	479	1480	622
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Total Split (s)	40.0	50.0		20.0	30.0	20.0	17.0	42.0	20.0	20.0	45.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	36.0	46.2		15.8	26.0	42.0	10.4	38.0	57.8	16.0	47.8	87.8
Actuated g/C Ratio	0.27	0.35		0.12	0.20	0.32	0.08	0.29	0.44	0.12	0.36	0.67
v/c Ratio	0.84	0.91		0.75	1.25	1.21	0.24	1.40	0.72	1.15	0.80	0.31
Control Delay	51.9	49.7		64.8	163.9	131.3	59.7	222.1	30.0	124.1	54.9	5.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	49.7		64.8	163.9	131.3	59.7	222.1	30.0	124.1	54.9	5.9
LOS	D	D		E	F	F	E	F	C	F	D	A
Approach Delay		50.6			135.9			180.4			55.9	
Approach LOS		D			F			F			E	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 51 (39%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.40			
Intersection Signal Delay: 104.6		Intersection LOS: F	
Intersection Capacity Utilization 106.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 18: Bouquet Canyon Rd & Valencia Boulevard/Soledad Canyon Road

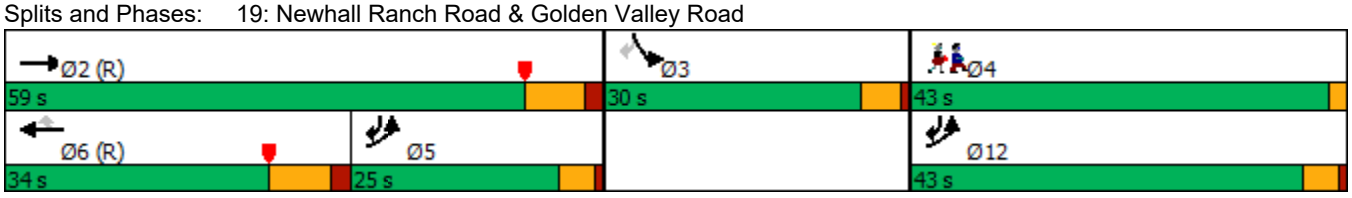


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	1520	3320	2980	1752	913	690			
Future Volume (vph)	1520	3320	2980	1752	913	690			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	320			150	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				344					
Link Speed (mph)		50	50		30				
Link Distance (ft)		3822	1665		723				
Travel Time (s)		52.1	22.7		16.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	1652	3609	3239	1904	992	750			
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				6		3			
Total Split (s)		59.0	34.0	34.0	30.0		43.0	25.0	43.0
Total Lost Time (s)		4.0	4.0	4.0	4.0				
Act Effct Green (s)	60.0	55.0	30.0	30.0	26.0	94.5			
Actuated g/C Ratio	0.45	0.42	0.23	0.23	0.20	0.72			
v/c Ratio	1.06	1.70	2.80	3.05	1.47	0.38			
Control Delay	58.9	344.6	833.1	938.0	256.0	7.9			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	58.9	344.6	833.1	938.0	256.0	7.9			
LOS	E	F	F	F	F	A			
Approach Delay		254.9	871.9		149.2				
Approach LOS		F	F		F				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Offset: 79 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.05
Intersection Signal Delay: 501.0 Intersection LOS: F
Intersection Capacity Utilization 158.5% ICU Level of Service H
Analysis Period (min) 15
Description: Golden Valley Road at Newhall Ranch Road

Splits and Phases: 19: Newhall Ranch Road & Golden Valley Road

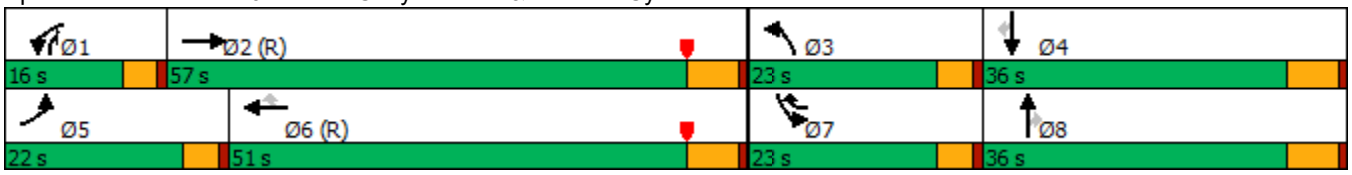


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1940	130	290	1350	332	420	942	340	361	561	170
Future Volume (vph)	250	1940	130	290	1350	332	420	942	340	361	561	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	300		0	350		0	350		300
Storage Lanes	2		0	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3433	5040	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5040	0	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				99			99			185
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1022			1767			369			1000	
Travel Time (s)		17.4			30.1			6.3			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	272	2250	0	315	1467	361	457	1024	370	392	610	185
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases						6			8			4
Total Split (s)	22.0	57.0		16.0	51.0	23.0	23.0	36.0	16.0	23.0	36.0	36.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	14.3	53.0		12.0	50.7	72.4	18.7	33.3	49.3	17.7	32.3	32.3
Actuated g/C Ratio	0.11	0.40		0.09	0.38	0.55	0.14	0.25	0.37	0.13	0.24	0.24
v/c Ratio	0.74	1.11		1.01	1.08	0.40	0.94	1.15	0.57	0.85	0.71	0.35
Control Delay	82.5	76.7		122.2	72.3	2.3	83.9	123.4	27.8	85.9	37.4	3.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.5	76.7		122.2	72.3	2.3	83.9	123.4	27.8	85.9	37.4	3.7
LOS	F	E		F	E	A	F	F	C	F	D	A
Approach Delay		77.3			67.8			94.5			48.2	
Approach LOS		E			E			F			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 14 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 74.3		Intersection LOS: E	
Intersection Capacity Utilization 98.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 20: Whites Canyon Road & Soledad Cyn



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	531	276	174	953	305	171
Future Volume (vph)	531	276	174	953	305	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0	150			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	1863	1773	0
Flt Permitted	0.950		0.373			
Satd. Flow (perm)	1770	1583	695	1863	1773	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		300			52	
Link Speed (mph)	30			30	30	
Link Distance (ft)	278			277	274	
Travel Time (s)	6.3			6.3	6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	577	300	189	1036	518	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Total Split (s)	34.0	34.0	56.0	56.0	56.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	29.0	29.0	51.0	51.0	51.0	
Actuated g/C Ratio	0.32	0.32	0.57	0.57	0.57	
v/c Ratio	1.01	0.42	0.48	0.98	0.50	
Control Delay	73.0	4.8	16.8	44.4	12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	73.0	4.8	16.8	44.4	12.6	
LOS	E	A	B	D	B	
Approach Delay	49.7			40.2	12.6	
Approach LOS	D			D	B	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 87.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	790	6	31	320	3	17
Future Vol, veh/h	790	6	31	320	3	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	859	7	34	348	3	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	866	0	1279	863
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	416	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	777	-	183	354
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	666	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	777	-	173	354
Mov Cap-2 Maneuver	-	-	-	-	173	-
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	666	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.9	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	306	-	-	777	-
HCM Lane V/C Ratio	0.071	-	-	0.043	-
HCM Control Delay (s)	17.7	-	-	9.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Interim Year With Project Mitigation

Intersection						
Int Delay, s/veh	3.2					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	181	151	552	1276	34
Future Vol, veh/h	0	181	151	552	1276	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	197	164	600	1387	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	712	1424	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	375	474	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	375	474	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	24.7	3.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	474	-	375	-	-
HCM Lane V/C Ratio	0.346	-	0.525	-	-
HCM Control Delay (s)	16.6	-	24.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	1.5	-	2.9	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	20	381	736	30	0	90
Future Vol, veh/h	20	381	736	30	0	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	92	92	92	92	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	414	800	33	0	105

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	833	0	-	0	-	817
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	800	-	-	-	0	376
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	800	-	-	-	-	376
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0.5	0	18.2
HCM LOS			C

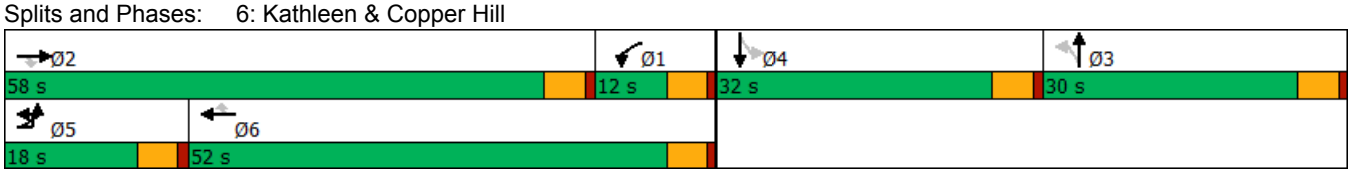
Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	800	-	376
HCM Lane V/C Ratio	-	-	0.029	-	0.278
HCM Control Delay (s)	-	-	9.6	-	18.2
HCM Lane LOS	-	-	A	-	C
HCM 95th %tile Q(veh)	-	-	0.1	-	1.1

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	63	30	271	10	10	806	10	73	10	10	120	30
Future Volume (vph)	63	30	271	10	10	806	10	73	10	10	120	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	16	12	12	16
Storage Length (ft)		280		0	250		250	0		0	0	
Storage Lanes		1		1	1		1	0		0	0	
Taper Length (ft)		25			25			25			25	
Satd. Flow (prot)	0	1770	1863	1583	1770	3539	1583	0	2002	0	0	1957
Flt Permitted		0.950			0.950				0.597			0.880
Satd. Flow (perm)	0	1770	1863	1583	1770	3539	1583	0	1243	0	0	1765
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)				99			99		4			20
Link Speed (mph)			50			50			25			25
Link Distance (ft)			477			461			225			404
Travel Time (s)			6.5			6.3			6.1			11.0
Peak Hour Factor	0.92	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	327	12	12	971	12	0	112	0	0	289
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5	5	2		1	6			3			4
Permitted Phases				2			6	3			4	
Total Split (s)	18.0	18.0	58.0	58.0	12.0	52.0	52.0	30.0	30.0		32.0	32.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0
Act Effct Green (s)		10.9	54.3	54.3	7.1	42.3	42.3		15.1			21.5
Actuated g/C Ratio		0.10	0.49	0.49	0.06	0.38	0.38		0.14			0.19
v/c Ratio		0.59	0.36	0.01	0.11	0.72	0.02		0.64			0.81
Control Delay		65.5	22.1	0.0	58.2	34.2	0.0		62.6			58.4
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0
Total Delay		65.5	22.1	0.0	58.2	34.2	0.0		62.6			58.4
LOS		E	C	A	E	C	A		E			E
Approach Delay			31.7			34.1			62.6			58.4
Approach LOS			C			C			E			E

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 110.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Kathleen & Copper Hill



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	90
Future Volume (vph)	90
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.83
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Total Split (s)	
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	301	76	10	959	0	73
Future Vol, veh/h	301	76	10	959	0	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	-	0
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	89	12	1128	0	86

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	443	0	-	222
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.13	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.219	-	-	3.319
Pot Cap-1 Maneuver	-	-	1115	-	0	782
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1115	-	-	782
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.2
HCM LOS			B

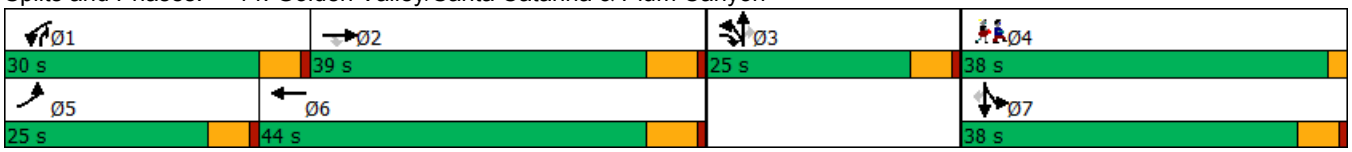
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	782	-	-	1115	-
HCM Lane V/C Ratio	0.11	-	-	0.011	-
HCM Control Delay (s)	10.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	335	645	530	584	140	126	50	140	110	150	101
Future Volume (vph)	74	335	645	530	584	140	126	50	140	110	150	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	350		0	225		0	150		0
Storage Lanes	1		1	2		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	3433	3437	0	1681	1732	1583	0	1824	1583
Flt Permitted	0.950			0.950			0.950	0.979			0.979	
Satd. Flow (perm)	1770	3539	1583	3433	3437	0	1681	1732	1583	0	1824	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			302		23				152			110
Link Speed (mph)		45			45			50			25	
Link Distance (ft)		511			448			455			496	
Travel Time (s)		7.7			6.8			6.2			13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							31%					
Lane Group Flow (vph)	80	364	701	576	787	0	95	96	152	0	283	110
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	3	1	6		3	3	1	7	7	
Permitted Phases			2						3			7
Total Split (s)	25.0	39.0	25.0	30.0	44.0		25.0	25.0	30.0	38.0	38.0	38.0
Total Lost Time (s)	6.0	4.5	3.5	3.5	4.5		5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	9.5	18.5	40.6	23.4	33.5		15.7	15.7	37.6		21.6	21.6
Actuated g/C Ratio	0.10	0.19	0.41	0.24	0.34		0.16	0.16	0.38		0.22	0.22
v/c Ratio	0.47	0.55	0.84	0.70	0.66		0.35	0.35	0.22		0.71	0.25
Control Delay	57.2	41.3	25.9	42.2	33.4		45.0	44.7	2.9		47.9	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	57.2	41.3	25.9	42.2	33.4		45.0	44.7	2.9		47.9	8.5
LOS	E	D	C	D	C		D	D	A		D	A
Approach Delay		33.0			37.1			26.3			36.9	
Approach LOS		C			D			C			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 98.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 34.5		Intersection LOS: C	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 14: Golden Valley/Santa Catarina & Plum Canyon



Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Total Split (s)	38.0
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	350	553	2453	371	285	830
Future Volume (vph)	350	553	2453	371	285	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	950			200	150	0
Storage Lanes	2			1	2	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				195		1
Link Speed (mph)		50	50		45	
Link Distance (ft)		1314	1046		1640	
Travel Time (s)		17.9	14.3		24.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	601	2666	403	310	902
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases				2		4
Total Split (s)	25.0	94.0	69.0	69.0	38.0	25.0
Total Lost Time (s)	4.0	4.0	4.0	5.5	4.0	4.0
Act Effct Green (s)	26.3	103.5	73.2	71.7	20.5	50.8
Actuated g/C Ratio	0.20	0.78	0.55	0.54	0.16	0.38
v/c Ratio	0.55	0.15	0.95	0.43	0.58	0.84
Control Delay	32.6	4.8	15.3	3.6	55.3	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	4.8	15.3	3.6	55.3	44.4
LOS	C	A	B	A	E	D
Approach Delay		15.6	13.8		47.2	
Approach LOS		B	B		D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 62 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 83.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 16: Bouquet Cyn & Seco Cyn

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	121	770	420	590	1790	70	380	700	140	300	2572	326
Future Volume (vph)	121	770	420	590	1790	70	380	700	140	300	2572	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	280		340	375		0	300		230
Storage Lanes	3		1	3		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	4990	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	4990	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			136			186			112
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		778			737			990			548	
Travel Time (s)		10.6			10.1			15.0			8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	837	457	641	1946	76	413	761	152	326	2796	354
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	18.0	39.0	22.0	18.0	39.0	39.0	22.0	45.0	45.0	30.0	53.0	18.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	7.4	27.9	45.4	21.1	41.6	41.6	17.5	50.5	50.5	16.5	49.5	60.9
Actuated g/C Ratio	0.06	0.21	0.34	0.16	0.32	0.32	0.13	0.38	0.38	0.12	0.38	0.46
v/c Ratio	0.47	0.62	0.74	0.80	0.96	0.13	0.91	0.31	0.21	0.76	1.16	0.45
Control Delay	65.8	48.9	23.4	62.2	57.7	0.4	67.1	31.9	8.1	79.9	104.6	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
Total Delay	65.8	48.9	23.4	62.2	57.7	0.4	67.1	31.9	8.1	79.9	104.6	8.1
LOS	E	D	C	E	E	A	E	C	A	E	F	A
Approach Delay		42.3			57.1			40.1			92.5	
Approach LOS		D			E			D			F	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 105 (80%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 66.0		Intersection LOS: E	
Intersection Capacity Utilization 90.7%		ICU Level of Service E	
Analysis Period (min) 15			

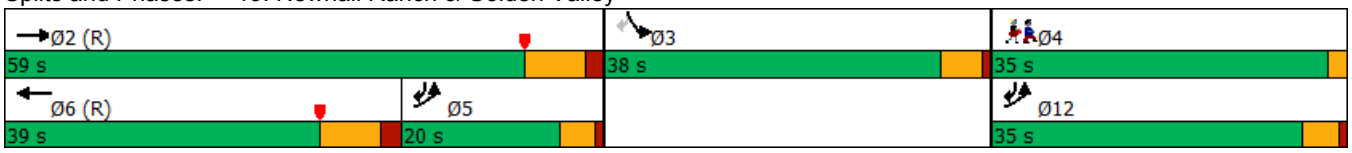
Splits and Phases: 17: Bouquet Cyn & Newhall Ranch

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	530	1840	2600	585	1821	1740			
Future Volume (vph)	530	1840	2600	585	1821	1740			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	500			145	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				114					
Link Speed (mph)		55	55		50				
Link Distance (ft)		611	605		540				
Travel Time (s)		7.6	7.5		7.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	576	2000	2826	636	1979	1891			
Turn Type	Prot	NA	NA	Free	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				Free		3			
Total Split (s)		59.0	39.0		38.0		35.0	20.0	35.0
Total Lost Time (s)		4.0	4.0		4.0				
Act Effct Green (s)	47.0	55.0	35.0	132.0	34.0	89.5			
Actuated g/C Ratio	0.36	0.42	0.27	1.00	0.26	0.68			
v/c Ratio	0.47	0.94	2.10	0.40	2.24	1.00			
Control Delay	17.9	47.5	521.9	0.8	585.7	42.5			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	17.9	47.5	521.9	0.8	585.7	42.5			
LOS	B	D	F	A	F	D			
Approach Delay		40.8	426.2		320.3				
Approach LOS		D	F		F				

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 106 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.24			
Intersection Signal Delay: 284.6		Intersection LOS: F	
Intersection Capacity Utilization 127.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 19: Newhall Ranch & Golden Valley



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	211	200	204	317	971	560
Future Volume (vph)	211	200	204	317	971	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0	350			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	3539	3345	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	3345	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		217			137	
Link Speed (mph)	30			30	30	
Link Distance (ft)	327			491	650	
Travel Time (s)	7.4			11.2	14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	229	217	222	345	1664	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Total Split (s)	28.0	28.0	27.0	104.0	77.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	19.8	19.8	19.1	89.3	65.0	
Actuated g/C Ratio	0.17	0.17	0.16	0.75	0.54	
v/c Ratio	0.78	0.49	0.78	0.13	0.88	
Control Delay	68.7	10.1	69.7	4.4	29.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	68.7	10.1	69.7	4.4	29.1	
LOS	E	B	E	A	C	
Approach Delay	40.2			30.0	29.1	
Approach LOS	D			C	C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 119.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 31.1		Intersection LOS: C	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East

Intersection						
Int Delay, s/veh	1.7					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	160	163	1256	629	35
Future Vol, veh/h	0	160	163	1256	629	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	174	177	1365	684	38

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	361	722	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	636	876	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	636	876	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.8	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	876	-	636	-	-
HCM Lane V/C Ratio	0.202	-	0.273	-	-
HCM Control Delay (s)	10.1	-	12.8	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.8	-	1.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	40	796	253	70	0	50
Future Vol, veh/h	40	796	253	70	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	92	92	92	92	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	865	275	76	0	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	351	0	-	0	-	313
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1208	-	-	-	0	727
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1208	-	-	-	-	727
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	10.4
HCM LOS			B

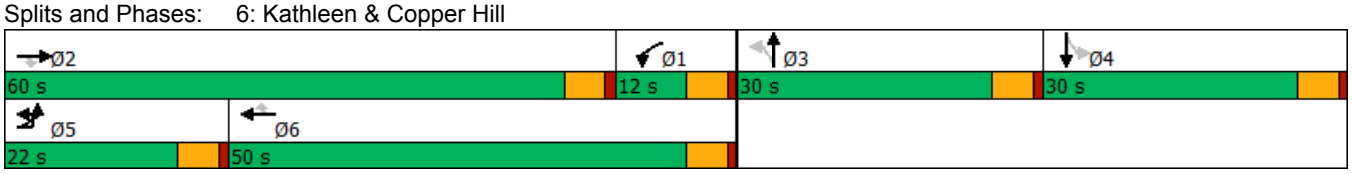
Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1208	-	727
HCM Lane V/C Ratio	-	-	0.039	-	0.08
HCM Control Delay (s)	-	-	8.1	-	10.4
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	80	746	50	10	273	20	45	30	10	80	20
Future Volume (vph)	35	80	746	50	10	273	20	45	30	10	80	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	16	12	12	16
Storage Length (ft)		280		0	250		250	0		0	0	
Storage Lanes		1		1	1		1	0		0	0	
Taper Length (ft)		25			25			25			25	
Satd. Flow (prot)	0	1770	1863	1583	1770	3539	1583	0	2025	0	0	1964
Flt Permitted		0.950			0.950				0.695			0.781
Satd. Flow (perm)	0	1770	1863	1583	1770	3539	1583	0	1445	0	0	1575
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)				99			99		4			17
Link Speed (mph)			50			50			25			25
Link Distance (ft)			477			461			225			187
Travel Time (s)			6.5			6.3			6.1			5.1
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	838	56	11	307	22	0	96	0	0	168
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5	5	2		1	6			3			4
Permitted Phases				2			6	3			4	
Total Split (s)	22.0	22.0	60.0	60.0	12.0	50.0	50.0	30.0	30.0		30.0	30.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0
Act Effct Green (s)		12.5	56.6	56.6	7.2	40.9	40.9		11.9			15.3
Actuated g/C Ratio		0.13	0.58	0.58	0.07	0.42	0.42		0.12			0.16
v/c Ratio		0.57	0.78	0.06	0.08	0.21	0.03		0.54			0.65
Control Delay		53.8	26.7	0.8	51.9	22.2	0.1		53.2			48.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0
Total Delay		53.8	26.7	0.8	51.9	22.2	0.1		53.2			48.7
LOS		D	C	A	D	C	A		D			D
Approach Delay			28.6			21.7			53.2			48.7
Approach LOS			C			C			D			D

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 98			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 30.7		Intersection LOS: C	
Intersection Capacity Utilization 68.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Kathleen & Copper Hill



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.89
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Total Split (s)	
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	866	127	10	358	0	45
Future Vol, veh/h	866	127	10	358	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	-	0
Veh in Median Storage, #0		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	921	135	11	381	0	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1056	0	-	528
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.13	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.219	-	-	3.319
Pot Cap-1 Maneuver	-	-	657	-	0	496
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	657	-	-	496
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	496	-	-	657	-
HCM Lane V/C Ratio	0.097	-	-	0.016	-
HCM Control Delay (s)	13	-	-	10.6	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	529	325	210	396	10	816	100	530	30	50	44
Future Volume (vph)	32	529	325	210	396	10	816	100	530	30	50	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	350		0	225		0	150		0
Storage Lanes	1		1	2		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	3433	3525	0	1681	1702	1583	0	1827	1583
Flt Permitted	0.950			0.950			0.950	0.962			0.981	
Satd. Flow (perm)	1770	3539	1583	3433	3525	0	1681	1702	1583	0	1827	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			353		2				550			107
Link Speed (mph)		45			45			50			25	
Link Distance (ft)		511			448			455			496	
Travel Time (s)		7.7			6.8			6.2			13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							44%					
Lane Group Flow (vph)	35	575	353	228	441	0	497	499	576	0	87	48
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2	3	1	6		3	3	1	7	7	
Permitted Phases			2						3			7
Total Split (s)	12.0	29.0	49.0	16.0	33.0		49.0	49.0	16.0	38.0	38.0	38.0
Total Lost Time (s)	6.0	4.5	3.5	3.5	4.5		5.0	5.0	5.0		5.0	5.0
Act Effct Green (s)	6.2	22.8	66.7	12.3	32.3		37.7	37.7	50.0		10.4	10.4
Actuated g/C Ratio	0.06	0.23	0.68	0.12	0.33		0.38	0.38	0.51		0.11	0.11
v/c Ratio	0.31	0.70	0.30	0.53	0.38		0.77	0.77	0.54		0.45	0.18
Control Delay	57.9	42.3	1.4	48.9	31.0		37.5	37.0	3.0		53.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	57.9	42.3	1.4	48.9	31.0		37.5	37.0	3.0		53.3	1.5
LOS	E	D	A	D	C		D	D	A		D	A
Approach Delay		27.9			37.1			24.7			34.9	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 98.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 28.5		Intersection LOS: C	
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 14: Golden Valley/Santa Catarina & Plum Canyon

Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Total Split (s)	38.0
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	440	1717	1383	213	472	590
Future Volume (vph)	440	1717	1383	213	472	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	950			200	150	0
Storage Lanes	2			1	2	2
Taper Length (ft)	25				25	
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				154		4
Link Speed (mph)		50	50		45	
Link Distance (ft)		1314	1046		1640	
Travel Time (s)		17.9	14.3		24.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	478	1866	1503	232	513	641
Turn Type	Prot	NA	NA	Perm	Prot	pm+ov
Protected Phases	1	6	2		4	1
Permitted Phases				2		4
Total Split (s)	45.0	94.0	49.0	49.0	38.0	45.0
Total Lost Time (s)	4.0	4.0	4.0	5.5	4.0	4.0
Act Effct Green (s)	23.6	97.6	70.0	68.5	26.4	54.0
Actuated g/C Ratio	0.18	0.74	0.53	0.52	0.20	0.41
v/c Ratio	0.78	0.50	0.56	0.26	0.75	0.56
Control Delay	55.3	9.0	26.3	14.7	56.4	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	9.0	26.3	14.7	56.4	30.9
LOS	E	A	C	B	E	C
Approach Delay		18.4	24.8		42.2	
Approach LOS		B	C		D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 12 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 25.8		Intersection LOS: C	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

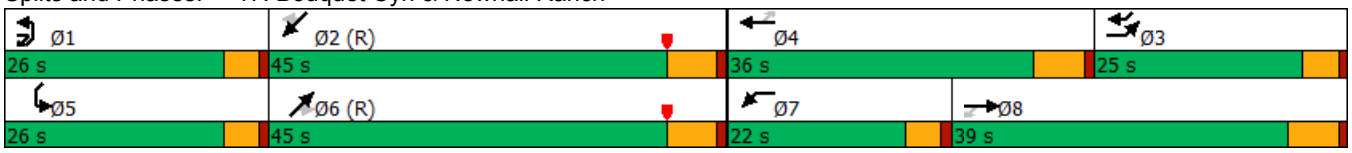
Splits and Phases: 16: Bouquet Cyn & Seco Cyn

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	696	1700	460	300	1250	560	630	2044	630	420	1526	214
Future Volume (vph)	696	1700	460	300	1250	560	630	2044	630	420	1526	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	280		340	375		0	300		230
Storage Lanes	3		1	3		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	4990	6408	1583	4990	6408	1583	3433	6408	1583	3433	6408	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	4990	6408	1583	4990	6408	1583	3433	6408	1583	3433	6408	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			295			298			99
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		778			737			990			548	
Travel Time (s)		10.6			10.1			15.0			8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	757	1848	500	326	1359	609	685	2222	685	457	1659	233
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Total Split (s)	25.0	39.0	26.0	22.0	36.0	36.0	26.0	45.0	45.0	26.0	45.0	25.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	21.0	40.5	66.5	12.5	32.0	32.0	22.0	42.7	42.7	20.3	41.0	62.0
Actuated g/C Ratio	0.16	0.31	0.50	0.09	0.24	0.24	0.17	0.32	0.32	0.15	0.31	0.47
v/c Ratio	0.95	0.94	0.60	0.69	0.88	1.00	1.20	1.07	0.96	0.87	0.83	0.29
Control Delay	77.6	55.2	24.4	65.5	55.5	63.2	147.7	90.7	56.1	74.7	52.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.6	55.2	24.4	65.5	55.5	63.2	147.7	90.7	56.1	74.7	52.3	13.2
LOS	E	E	C	E	E	E	F	F	E	E	D	B
Approach Delay		55.7			58.9			95.0			52.8	
Approach LOS		E			E			F			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 55 (42%), Referenced to phase 2:SWT and 6:NET, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 68.2		Intersection LOS: E	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 17: Bouquet Cyn & Newhall Ranch

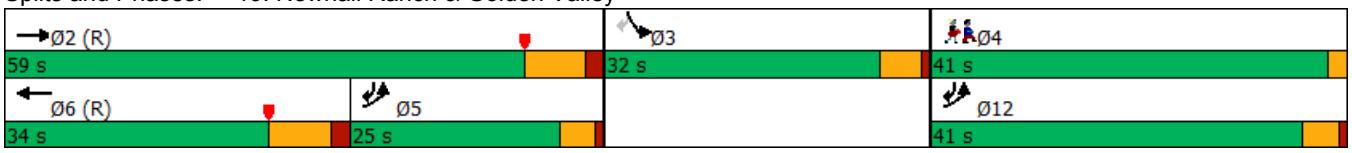


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4	Ø5	Ø12
Lane Configurations									
Traffic Volume (vph)	1520	3320	2980	1752	913	690			
Future Volume (vph)	1520	3320	2980	1752	913	690			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	500			145	315	315			
Storage Lanes	2			1	1	1			
Taper Length (ft)	25				25				
Satd. Flow (prot)	3433	5085	5085	1583	3433	2787			
Flt Permitted	0.950				0.950				
Satd. Flow (perm)	3433	5085	5085	1583	3433	2787			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				298					
Link Speed (mph)		55	55		50				
Link Distance (ft)		1065	605		540				
Travel Time (s)		13.2	7.5		7.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	1652	3609	3239	1904	992	750			
Turn Type	Prot	NA	NA	Free	Prot	pt+ov			
Protected Phases	5 12	2	6		3	5 12	4	5	12
Permitted Phases				Free		3			
Total Split (s)		59.0	34.0		32.0		41.0	25.0	41.0
Total Lost Time (s)		4.0	4.0		4.0				
Act Effct Green (s)	58.0	55.0	30.0	132.0	28.0	94.5			
Actuated g/C Ratio	0.44	0.42	0.23	1.00	0.21	0.72			
v/c Ratio	1.10	1.70	2.80	1.20	1.36	0.38			
Control Delay	78.6	346.6	834.6	106.0	211.7	7.9			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	78.6	346.6	834.6	106.0	211.7	7.9			
LOS	E	F	F	F	F	A			
Approach Delay		262.5	564.9		124.0				
Approach LOS		F	F		F				

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Offset: 79 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.80			
Intersection Signal Delay: 370.6		Intersection LOS: F	
Intersection Capacity Utilization 137.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 19: Newhall Ranch & Golden Valley

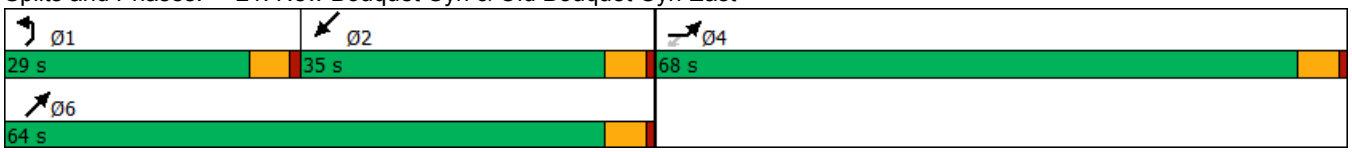


Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	531	276	174	932	305	171
Future Volume (vph)	531	276	174	932	305	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300	0	350			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1770	1583	1770	3539	3348	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	3348	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		298			75	
Link Speed (mph)	30			30	30	
Link Distance (ft)	327			417	640	
Travel Time (s)	7.4			9.5	14.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	577	300	189	1013	518	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Total Split (s)	68.0	68.0	29.0	64.0	35.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Act Effct Green (s)	36.3	36.3	15.6	39.6	18.5	
Actuated g/C Ratio	0.42	0.42	0.18	0.46	0.21	
v/c Ratio	0.78	0.36	0.59	0.63	0.67	
Control Delay	30.8	3.5	45.2	21.3	33.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.8	3.5	45.2	21.3	33.5	
LOS	C	A	D	C	C	
Approach Delay	21.5			25.1	33.5	
Approach LOS	C			C	C	

Intersection Summary

Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 86.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 25.5		Intersection LOS: C	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 21: New Bouquet Cyn & Old Bouquet Cyn East



Appendix C FAIR SHARE CALCULATIONS

Table C-1 summarizes the fair share calculations. The project share is calculated as follows:

Project Share = (Project Volume) / (Cumulative Volume – Existing Volume)

Table C-1 Intersection Fair Share Calculations – Interim Year Cumulative Conditions

Intersection	Volumes (AM+PM Peak Hour)				Project Share % (C/D)
	Existing (A)	Cumulative (B)	Growth (D) = (B-A)	Project (C)	
1. Bouquet Cyn & Vasquez Cyn	2,460	3,100	640	10	2%
3. New Bouquet Cyn & Old Bouquet Cyn West	2,467	4,437	2,054	500	25%
5 . David Way & Old Bouquet Cyn East	1,527	2,346	819	16	2%
6. Kathleen & Copper Hill	1,711	2,606	900	16	2%
7. Benz & Copper Hill	1,955	2,900	961	90	10%
14. Golden Valley & Plum Cyn	4,477	6,057	1,852	127	8%
16. Seco Cyn & Bouquet Cyn	9,140	9,657	554	217	42%
17. Bouquet Cyn & Newhall Ranch	16,889	18,609	1,750	139	8%
19. Golden Valley & Newhall Ranch	8,887	20,291	11,404	61	0.5%
21. New Bouquet Cyn & Old Bouquet Cyn East	2,999	4,881	1,907	91	5%

Appendix D ICU WORKSHEETS

1. Bouquet Cyn & Vasquez Cyn

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	41	.16*	265	.62*
NBR	0	0	217		726	
SBL	0	0	13	{.01}*	16	{.01}*
SBT	1	1600	230	.15	75	.06
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	645		195	
WBT	1	1600	0	.41*	0	.14*
WBR	0	0	12		25	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION **.68** **.87**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	43	.16*	266	.62*
NBR	0	0	219		727	
SBL	0	0	13	{.01}*	16	{.01}*
SBT	1	1600	230	.15	77	.06
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	645		197	
WBT	1	1600	0	.41*	0	.14*
WBR	0	0	12		25	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION **.68** **.87**

Interim Year Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	52	.17	451	.80*
NBR	0	0	212		821	
SBL	0	0	10		10	{.01}*
SBT	1	1600	390	.25*	112	.08
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	740		252	
WBT	1	1600	0	.48*	0	.18*
WBR	0	0	20		30	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION **.83** **1.09**

Interim Cumulative With Project + Mit

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	52	.03*	451	.28*
NBR	d	1600	212	.13	821	.51
SBL	0	0	10		10	
SBT	1	1600	390	.25*	112	.08*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		740		252	
WBT	0	3200	0	.24*	0	.09*
WBR	0.5		20		30	
Right Turn Adjustment					NBR	.16*
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION **.62** **.71**