
**90-Day Protocol Survey Report For U.S. Fish And Wildlife Service Listed
Vernal Pool Branchiopods, Thomas Juhasz, May 2010**

**90-DAY PROTOCOL SURVEY REPORT FOR U.S. FISH AND WILDLIFE SERVICE
LISTED VERNAL POOL BRANCHIOPODS**

City of Santa Clarita

Santa Clarita Valley, Los Angeles County, California

July 1, 2011

Prepared for:

**Impact Sciences Inc.
234 East Colorado Blvd.
Suite 205
Pasadena, CA 91101**

Prepared by:

**Thomas Juhasz
P.O. Box 90036
Pasadena, California 91109
Phone (626) 755-5123**

July 1, 2011

Daryl Koutnik
Impact Sciences Inc.
234 East Colorado Blvd.
Pasadena, CA 91101

Subject: **90-Day Protocol Survey Report for U.S. Fish and Wildlife Service
Listed Vernal Pool Branchiopods**
Santa Clarita Vernal Pool Project
Santa Clarita Valley, Los Angeles County, California

Dear Mr. Koutnik:

I have performed a Wet-Season Protocol Survey for U.S. Fish and Wildlife Service Listed Vernal Pool Branchiopods of the above referenced property (i.e., "the Site"). This report includes my findings, conclusions, recommendations, and supporting documentation. I appreciate the opportunity to be of service on this project. If you should have any questions regarding this report, or if I can be of further assistance, please contact me at (626) 755-5123.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas Juhasz", written in a cursive style.

Thomas Juhasz

cc: Ms. Julie Vanderwier, Ventura office, *USFWS*
 Mr. Chris Dellith, Ventura office, *USFWS*

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1.0 INTRODUCTION

Thomas Juhasz conducted a wet season protocol survey for U.S. Fish and Wildlife Service (USFWS) Listed Vernal Pool Branchiopods (LVPB) for pools/basins within the Santa Clarita Project Area. The Santa Clarita Project is located east of Rainbow Glen Drive, west of Golden Valley Road, between the terminus of Robert C. Lee in the South and the terminus of Via Princessa in the North, within the City of Santa Clarita, Los Angeles County, California (Appendix A). Additionally, the Santa Clarita Project is located in south ½ of the south ½ of Section 19 and the north ½ of Section 30, Township 4 North, and Range 15 West of the Mint Canyon U.S. Geological Survey 7.5 minute topographic quadrangle map (Center coordinates in North American Datum 1983 Universal Transverse Mercator [UTM] Zone10 North: UTM Northing 3816315.7 and UTM Easting 914236.0). The Site is bound by chaparral and Riversidean sage scrub slopes to the north, a high school to the south, suburban housing development down slope to the east down to Golden Valley Road and commercial development to the west, as shown in the Site/Pool Location Map, included as Appendix B.

Based on a preliminary biological assessment conducted within the project site by Impact Sciences, Inc., one pool/basin (potential listed vernal pool branchiopod habitat) was identified within the original project Site boundaries. Thomas Juhasz was retained by Impact Sciences, Inc. to conduct protocol surveys for LVPB at the original project Site, as no prior surveys have been conducted. Thomas Juhasz submitted a letter (via email) requesting authorization to conduct the wet season protocol survey within the original boundaries of the Santa Clarita Vernal Pool Project (1 pool/basin) to the USFWS, Ventura Fish and Wildlife office on April 29, 2010. On April 30, 2010, the USFWS provided the authorization to conduct the protocol surveys for the LVPB within the Site. During the wet season sampling period, Thomas Juhasz conducted an additional habitat assessment on January 23, 2011 within the project area in response to revisions in the impact footprint as requested by Impact Sciences, Inc. During the assessment, 3 additional pools/basins were identified. Thomas Juhasz subsequently requested and received authorization to enlarge the area of the protocol survey to include these additional areas on January 24, 2011 via phone. Written authorization was provided on January 25, 2011. This wet-season survey report includes the findings for all 4 pools/basins identified on the Santa Clarita Project Site.

2.0 SITE DESCRIPTION

The Site is undeveloped with Riversidean sage scrub and chaparral on slopes interspersed with annual grasslands on level areas. Several unimproved access roads traverse the eastern portion of the Site for electrical towers that run on the eastern and western peripheries of the Site. The on-Site elevations range from 1,687 to 1,735 feet above mean sea level (amsl), sloping gradually towards the northwest. One clay lined natural pool, one grass lined swale, and two road ruts are located within the Site study area. The pools/basins are underlain by Ojai loam or Saugus loam soils. Ojai soils consist of alluvium derived from sedimentary rock. Typically, the surface layer is loam about 25 inches thick underlain by a clay loam layer approximately 28 inches thick. Saugus soils consist of weakly consolidated alluvium with a surface later of loam/sandy loam about 42 inches thick underlain by weathered bedrock. According to the Hydric Soils List of California, Ojai and Saugus loam meet the criteria for hydric soils. Hydric soils are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part, and the identification of which is used as an indicator for determining wetland areas. The seasonal pools are discussed further in the table below.

TABLE 1 – Seasonal Pool Description

Seasonal Pool	Habitat Description	Maximum Area of Pooled Water (m ²)	Maximum Depth of Water (cm)	Duration of Inundation During 2010-2011 rain year (days)	Basin Soil Type
1	Natural Vernal Pool	246 m ²	42 cm-	At least 16	Ojai Loam
2	Road Rut 1	20 m ²	16 cm	At least 42	Ojai Loam
3	Road Rut 2	176 m ²	16 cm	At least 91	Ojai Loam
4	Grass Lined Depression	NA	NA	Never inundated	Ojai Loam

3.0 LVPB DESCRIPTION, RANGE, AND HABITAT REQUIREMENTS

LVPB are federally listed freshwater invertebrates endemic to California vernal pools. Five of these species are in the aquatic crustacean Order Anostraca and includes the Conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool fairy shrimp (*Branchinecta lynchi*), San Diego fairy shrimp (*Branchinecta sandiegoensis*), and Riverside fairy shrimp (*Streptocephalus woottoni*). The vernal pool tadpole shrimp (*Lepidurus packardii*) is in the aquatic crustacean Order Nostraca (USFWS 1993, 1994, and 1997). All LVPB are short lived (< 150 days) and fast reproducers (20-60 days), and can complete their life cycle in 20 days under optimal conditions to 40 days under less favorable conditions (depending on the species). During the dry season, LVPB embryos are contained in a protective impenetrable shell called a cyst. Cysts may remain viable in the soil for 15 years and often for much longer (Eriksen and Belk 1999). Following winter/spring rains that inundate suitable vernal depressions, embryos hatch from the cysts and enter the water column as naupili. Once mature LVPB deposit cysts within the substrate prior to the desiccation of the water column (Eriksen and Belk 1999).

LVPB are endemic to vernal pools in the Central Valley, northern and southern Coast Ranges, southwestern coastal California, extreme northwestern Baja California, and a limited number of sites in the Transverse Range and Santa Rosa Plateau of California (USFWS 1993, 1994, and 1997; Eriksen and Belk 1999; CNDDDB 2008). Vernal pools are defined by Zedler and Keely (1998) as "precipitation-filled seasonal wetlands inundated during periods when temperature is sufficient for plant growth, followed by a brief waterlogged-terrestrial stage and culminating in extreme desiccating soil conditions of extended duration." Many LVPB are also found in sandstone or basalt-flow depression basins to small swale and earth slump, with a grassy or, occasionally, muddy bottom in grassland (Eriksen and Belk 1999). The Cruzan Mesa Vernal Pool Significant Ecological Area for the County of Los Angeles that is located north of the Site within the City of Santa Clarita provides habitat to the vernal pool fairy shrimp (PCR 2006). This species was the focus of the focused survey discussed below.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp is listed as a threatened species under the 1973 Endangered Species Act and have been observed in a variety of vernal pools from December to early May in central and southern Coast Ranges from Solano County to Ventura County, California (USFWS 1994). They are also found in disjunct populations in the South Coast Mountains Region in a wide variety of terrestrial habitats with suitable inundation levels. Habitats include type locality sandstone outcrops in Contra Costa and Santa Barbara counties, but the more typical habitat is small swales, earth slumps, or basalt-flow depression basins with a grassy or muddy bottom (Eriksen and Belk 1999). Vernal pool fairy shrimp inhabit vernal pools that vary in size from 0.56 m² (1.84 ft²) to over 10 ha (24.71 acres) and have low to moderate total dissolved solids (TDS) and alkalinity, and neutral pH. Vernal pool fairy shrimp mature rapidly and can reach reproductive age in 18 days under optimal conditions, however, 41 days is more common. Vernal pool fairy shrimp are the shortest lived fairy shrimp, with a maximum lifespan of 139 days (mean = 90 days) (Eriksen and Belk 1999).

4.0 SURVEY METHODOLOGY

Survey methods followed the USFWS protocols guidelines for LVPB (USFWS 1996). Thomas Juhasz conducted the wet-season surveys and Dr. Brent Helm of Helm Biological Consulting conducted the dry season analysis to determine presence or absence of LVPB. The methods for the wet and dry season survey are discussed below.

Wet Season Protocol Survey

Thomas Juhasz conducted USFWS protocol wet season surveys for the LVPB at the Site during the winter and spring of 2010-2011. Mr. Juhasz is Federal authorized under USFWS permit TE-209807-0 to conduct protocol surveys for LVPB through the state of California. Based on preliminary biological assessments conducted within the project Site by Impact Sciences, Inc, one pool (potential listed vernal pool branchiopod habitat) was identified within the original project Site boundaries. Thomas Juhasz submitted notification (via email) requesting authorization to conduct the wet season protocol survey within the boundaries of the Santa Clarita Vernal Pool Project (1 pool) to the USFWS, Ventura Fish and Wildlife office on April 29, 2010. On April 30, 2010, the USFWS provided the authorization to conduct the protocol surveys for the LVPB within the Site boundaries. During the completion of the initial wet season survey of the identified pool, 3 additional basins were identified to be within the proposed impact area. Thomas Juhasz subsequently requested and received authorization to include the additional three pools/basins identified within the Site boundaries as part of the protocol survey on January 24, 2011 via phone. Written authorization was provided on January 25, 2011. Copies of the USFWS authorizations are included as Appendix C.

A USFWS protocol wet season surveys for LVPB requires a series of surveys to be performed once pools are inundated with at least 3.0 centimeters (cm) of water within 24 hours of a storm event. The primary pool was first inundated the week of December 26, 2010. Wet season surveys for LVPB were conducted every two weeks throughout the rainy season (up to 120 days) following initial inundation of the pools to satisfy protocol requirements. When seasonal pools experienced desiccation and the pool became subsequently inundated following sufficient amounts of rainfall, wet season surveys continued as specified in the guidelines. The surveys included visually inspecting the pools for fairy shrimp and dipping a 4.0 inch wide fine mesh net into the pool at a series of locations and moving it through the entire water column to collect suspended vernal pool fauna. Contents of the net were placed into a Petri dish partially filled with water and inspected for fairy shrimp and other vernal pool fauna. Following inspection of all vernal pool fauna, contents were placed back into the pool. Genera of observed vernal pool fauna was recorded on USFWS LVPB protocol wet season survey data sheets (Appendix D). All areas of the pools were thoroughly sampled for the presence of LVPB.

Physical data was also collected during each survey effort and recorded onto the USFWS wet season survey data sheets. Each pool location was mapped using a hand-held Global Positioning System (GPS) unit. Surface area measurements were performed by counting the paces it took to walk around each pool and multiplying by a mean pace length to obtain an approximate surface area for the pools and/or approximating the proportion of the maximum surface area filled during the survey. Water and air temperature were measured using a digital field thermometer and maximum pool depth was measured with a metric

ruler. In addition, geographic information, land use, habitat type and other aquatic fauna were recorded. Select photographs of the pools are included as Appendix E.

Dry Season Protocol Survey

Dr. Brent Helm (Helm Biological Consulting, USFWS Permit # TE-795930-6) collected soil samples from the main natural vernal pool in July 2010 after authorization on April 30, 2010. Methods generally followed USFWS's *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (1996). Mr. Juhasz conducted subsequent dry-season sampling for road rut 1, road rut on May 7, 2011 under permit TE-208907-0 of Section 10 (a)(1)(A) of the federal Endangered Species Act, 16 U.S.C. 1531 *et seq.*, and its implementing regulations as authorized by U.S. Fish and Wildlife Service (Appendix A). The collected soil was then transported to Helm Biological Consulting's laboratory for processing and analysis. The methods and results of the dry season survey analysis were submitted to the USFWS in July 2010 and in a subsequent addendum in June 2011. Both dry-season reports prepared by Helm Biological Consulting will be submitted to the USFWS under separate cover. However, the results of the dry season sampling and analysis were reviewed by Thomas Juhasz and are included in pertinent sections of this wet-season protocol survey report and were also used to assist in drawing conclusions and making recommendations regarding the potential presence of LVPB at the Site.

5.0 RESULTS

One species of LVPB were observed during the 2010-2011 wet season protocol survey (see Table 2). The Federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) was observed in the Main Natural Vernal Pool. One non-listed species of fairy shrimp, versatile fairy shrimp (*Branchinecta lindahli*), was observed within Road Rut 1 and Road Rut 2. No other observations of aquatic invertebrates were made during protocol surveys. Three of the four pools/basins (Main Natural Vernal Pool, Road Rut 1, and Road Rut 2) were inundated for a period of at least 16 days during the survey. The remaining one basin subject of this survey_(grass lined swale) did not become inundated with at least 3.0 cm as required by the USFWS guidelines to initiate wet season surveys. No cysts were found in the soil obtained from the grass lined depression. Cysts were detected in all three inundated features during dry season surveys. For additional data including invertebrate fauna and other wildlife observed during surveys efforts please refer to the attached USFWS LVPB protocol wet season data sheets, the dry season reports and Table 2 below.

TABLE 2 - Survey Dates and Findings

Survey Date	Surface Area (m ²)	Pool Depth (cm)	Days Since Inundated	Water Temp (°C)/ Air Temp. (°C)	Fairy Shrimp Species Observed*1	<i>Branchinecta</i> sp. Cysts
MAIN NATURAL VERNAL POOL						
12/26/2010	10	13	1	18/10	0 Fairy Shrimp	>1,000
01/09/2011	16	17	14	20/21	<i>Branchinecta</i> sp.* (10's)	
01/23/2011	NA	NA	Dry	NA/16	NA	
02/06/2011	NA	NA	Dry	NA/22	NA	
02/20/2011	2	15	1	21/10	0 Fairy Shrimp	
03/06/2011	NA	NA	Dry	NA/13	NA	
03/20/2011	4.5	8	1	7/9	0 Fairy Shrimp	
04/03/2011	246	42	14	20/21	<i>Branchinecta lynchi</i> (1,000's)	
ROAD RUT 1						
1/24/2011	5	7	1	9/17	<i>Branchinecta lindahli</i> (10's)	2
2/06/2011	NA	NA	Dry	NA/22	NA	
2/20/2011	20	9	1	20/10	0 Fairy Shrimp	
3/06/2011	12	11	14	21/13	<i>Branchinecta lindahli</i> (10's)	
3/20/2011	20	16	28	7/9	0 Fairy Shrimp	
4/03/2011	NA	NA	Dry	NA	NA	
ROAD RUT 2						
1/24/2011	16	12	1	9/17	<i>Branchinecta lindahli</i> (100's)	100
2/06/2011	176	16	14	14/22	<i>Branchinecta lindahli</i> (100's)	
2/20/2011	26	16	28	18/10	0 Fairy Shrimp	
3/06/2011	18	15	42	21/13	-- <i>Branchinecta</i> sp.* (100's)	

Survey Date	Surface Area (m ²)	Pool Depth (cm)	Days Since Inundated	Water Temp (°C)/ Air Temp. (°C)	Fairy Shrimp Species Observed*1	<i>Branchinecta sp.</i> Cysts
3/20/2011	16	14	56	7/9	Branchinecta lindahli (10's)	
4/03/2011	5	3	70	21/22	Branchinecta lindahli (10's)	
4/17/2011	NA	NA	Dry	NA	NA	
GRASS LINED SWALE						
1/24/2011	NA	NA	Dry	NM	NA	0
2/06/2011	NA	NA	Dry	NM	NA	
2/20/2011	NA	NA	Dry	NM	NA	
3/06/2011	NA	NA	Dry	NM	NA	
3/20/2011	NA	NA	Dry	NM	NA	
4/03/2011	NA	NA	Dry	NM	NA	
4/17/2011	NA	NA	Dry	NM	NA	
NA: Not Applicable due to dry conditions NM: Not measured *: Too immature to properly identify species						

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this 2010-2011 wet-season survey and a review of the dry season sampling and analysis (to be provided under separate cover), it is my professional opinion that only the main natural vernal pool supports populations of LVPB. Further justification of this opinion is as follows:

- **MAIN NATURAL POOL:** Became inundated with at least 3.0 cm as required by the USFWS guidelines to initiate wet season surveys on March 20, 2011. *Branchinecta* cysts were found in the soil obtained from these pool/basins under analysis by Brent Helm. The Federally threatened vernal pool fairy shrimp were identified after a protocol site visit on April 03, 2011.
- **ROAD RUT 1:** Inundation occurred in this pool with at least 3.0 cm twice during the survey period. Versatile fairy shrimp were identified to inhabit the inundated feature within the utility access road during two inundation periods. The road rut is identified as having *Branchinecta* cysts after an analysis by Brent Helm.
- **ROAD RUT 2:** Inundation occurred within this pool with at least 3.0 cm through the survey period. Versatile fairy shrimp were identified during through the inundation period. *Branchinecta* cysts were identified by Brent Helm.
- **GRASS LINED SWALE:** Inundation did not occur during the wet season surveys. No cysts were identified during analysis by Brent Helm.

Based on the analysis it is my opinion that the results of the survey for all pools are conclusive. The main natural vernal pool is habitat for the federal threatened vernal pool fairy shrimp as was identified during protocol wet season surveys. When inundated, Road Rut 1 and 2 provided habitat for the common versatile fairy shrimp; *Branchinecta* cysts were found in June 2011 dry season surveys. The grass lined depression never inundated during wet season surveys; no cysts were identified during June 2011 dry season surveys. Along with the vernal pool fairy shrimp, the main natural pool contains a large breeding population of western spadefoot toads (*Spea hammondi*). This vernal pool dependent species has been nearly eliminated from the Los Angeles coastal plain through the loss of suitable breeding habitat and friable upland soils (Calherps 2011).

The Ventura Branch of the United States Fish and Wildlife Office is responsible for Listed Vernal Pool Branchiopod issues in the western and desert portions of Los Angeles County. Their address is: Ventura Fish and Wildlife Office, Ventura Branch, 2493 Portola Road, Suite B, Ventura, CA 93003. USFWS recovery permit coordinator Julie Vanderwier is the contact for this project and can be reached by telephone at (805) 644-1766 ext. 222 or by email at Julie_Vanderwier@fws.gov. As per USFWS permit requirements, a copy of this report has been forwarded to Ms. Vanderwier and Mr. Dellith.

7.0 CERTIFICATION STATEMENT

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."

Thomas Juhasz_
TE208907-0



Date_07-01-2011_____

8.0 REFERENCES

California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) and RAREFIND3 Software;

CaliforniaHerps 2011. *Spea hammondi*- Western Spadefoot. Available on line at: <http://www.californiaherps.com/frogs/pages/s.hammondi.html>. Accessed June 29, 2011.

Eriksen, C. H. and D. Belk. 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Mad River Press, Inc., Eureka, CA.

Helm Biological Consulting, *Dry-Season Sampling for Federally-Listed Large Branchiopods at the Santa Clarita Project*, dated July 2010;

Helm Biological Consulting, *Dry-Season Sampling for Federally-Listed Large Branchiopods at the Santa Clarita Project*, dated June 2011;

Keeley, J.E. and P.H. Zedler. *Characterization and Global Distribution of Vernal Pools*. Pp 1-14 in: C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors). *Ecology, Conservation, Management of Vernal Pool Ecosystems – Proceedings from a 1996 Conference*. California Native Plant Society, Sacramento, CA, 1998.

PCR Services Corporation 2006. Cruzan Mesa Vernal Pools Significant Ecological Area: Available online at: http://planning.lacounty.gov/assets/upl/project/sea_cruzan-mesa.pdf Accessed June 29, 2011.

U.S. Fish and Wildlife Service. 1994. *Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp*. Federal Register 59 (180): 48136-48152.

U.S. Fish and Wildlife Service. 1996. *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*.

United States Department of Agriculture (USDA) - Natural Resource Conservation Service (NRCS) online database;

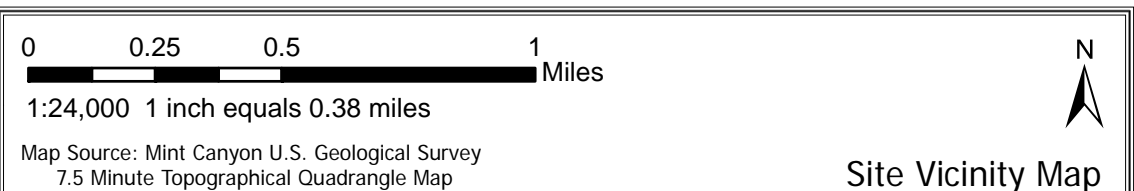
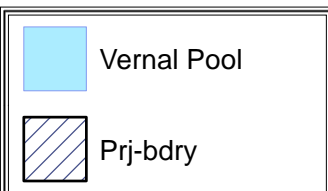
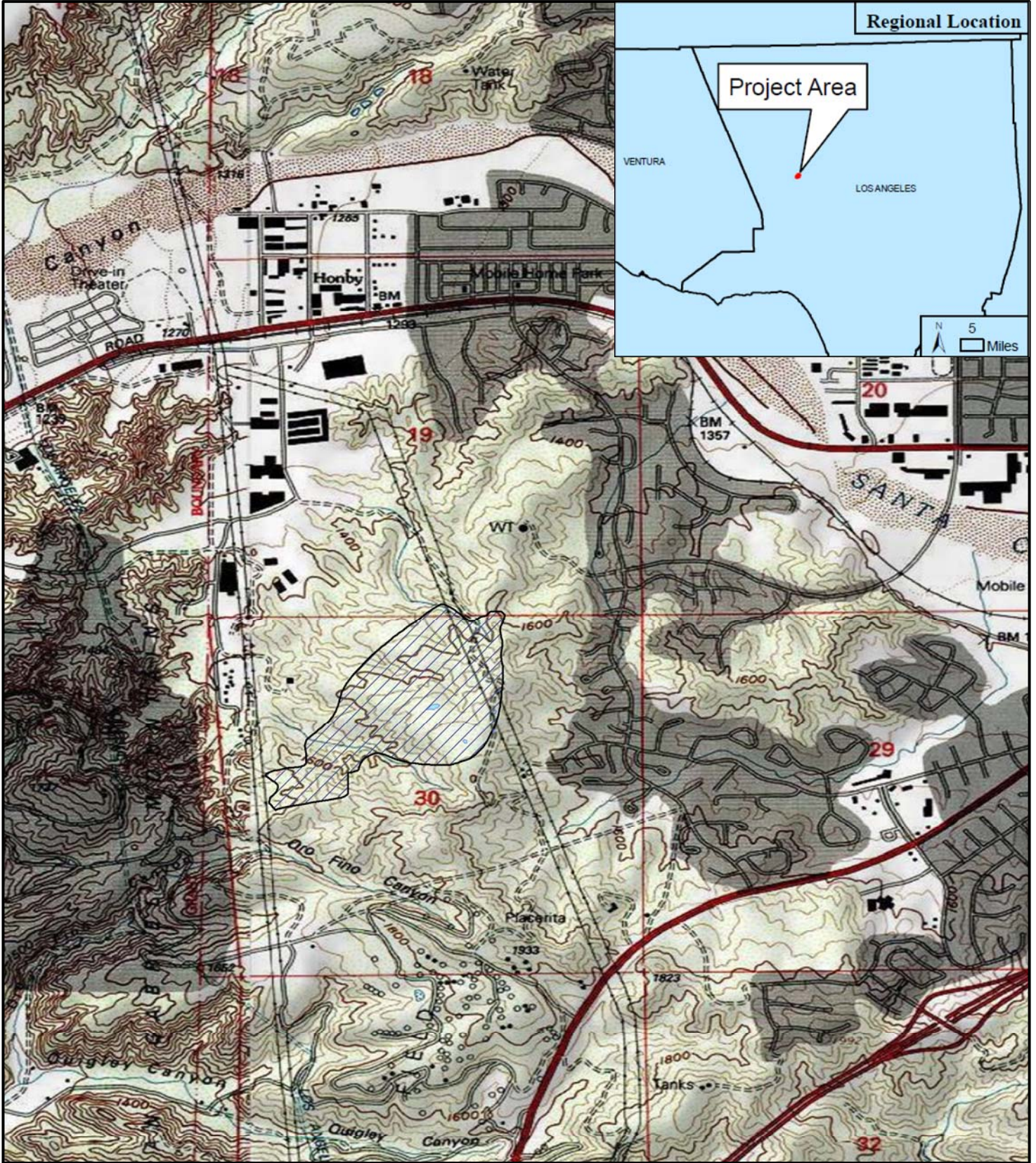
United States Geologic Survey (USGS) 7.5 minute topographic map, Santa Clarita Valley, California Quadrangle (1966) and 7.5 minute topographic map, La Panza NE, Mint Canyon Quadrangle (1973);

Persons Contacted:

Chris Dellith, Ventura Fish and Wildlife Service Office
Julie Vanderwier, Ventura Fish and Wildlife Service

APPENDIX A VICINITY MAP

Santa Clarita Vernal Pool Project 2010-2011

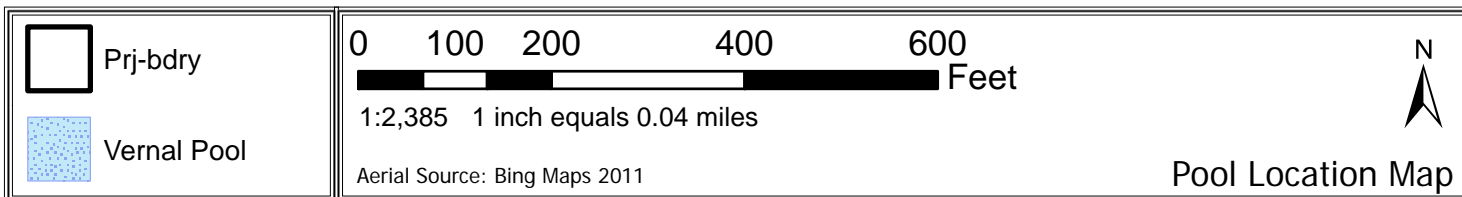


Site Vicinity Map

APPENDIX B SITE/POOL LOCATION MAP

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Santa Clarita Vernal Pool Project 2010-2011



APPENDIX C USFWS AUTHORIZATION



Thomas Juhasz <thomas.juhasz@gmail.com>

City of Santa Clarita project -- request to modify survey guidance for LVPB species

Julie_Vanderwier@fws.gov <Julie_Vanderwier@fws.gov>

Tue, Jan 25, 2011 at 4:19 PM

To: thomas.juhasz@gmail.com

Cc: Chris_Dellith@fws.gov, Chris_Kofron@fws.gov

Your request is a bit more complicated than it appeared initially so please bear with me as work through some concerns.

For reference purposes, the project site is located at the termination of Robert C. Lee Road that extends north from Golden Valley Road in the City of Santa Clarita, Los Angeles County. It is our understanding that you have been retained by the City of Santa Clarita to conduct the listed vernal pool branchiopod survey portion of the biological assessment at the site as no such surveys have been conducted to date. Surveys will be performed by you under the authority of recovery permit TE-208907-0.

Since the likely target LVPB species are, for the most part, cool weather hatchers (e.g. branchinectids), cysts in the road-rut ponded areas could have hatched at any time when water temperatures were in the low 40s (F). This could mean as early as late December 2010. Air temperatures (for lack of other data used herein as a surrogate for water temperatures) measured at Van Nuys Airport (less than 20 miles due south of Santa Clarita) show that from the end of December 2010 until approximately January 12, 2011 temperatures ranged from the mid-50s to mid- to high 60s (F). As such, it is probable that cysts hatched during this timeframe. Those that did would have likely experienced a slow growth rate due to the (presumably) cooler water temperatures; however, the onset of unseasonably warm weather between January 13 and 21 (upper 70s to mid-upper 80s; high of 88 on the 17th) would have accelerated that growth rate such that any larvae present could have reached maturity by now. This is somewhat problematic. The road-rut features, being substantially smaller, would likely have been subject to accelerated rising of water temperature resulting in their being further along in development than those observed in the main pool. While it is most likely that you did not miss detection of individuals altogether, we cannot be certain of this as the surveys were not conducted in accordance with our 1996 survey guidance for LVPB.

Certainly we would concur that the road-rut ponded areas and a depression to the south of the main pool are part of a complex that includes the main pool you have been sampling. Although your client indicated that there would be no direct impacts to these features (and the depression area) in the original design, we typically ask that all suitable habitat within a project area be surveyed. This is because there can be indirect effects and, more importantly, because changes in project design are more common than not due to the alternatives analyses that are required as part of compliance with CEQA and NEPA. To not possess this information results in delays, increased costs (e.g., the delays and the addition surveys), and a general unhappiness on the part of your client when the Service asks for "new" information. The proximity of these potential habitat areas to the larger, main pool should have dictated that you request authorization to revise your sampling program as soon as you determined that they held water for the requisite amount of time in order to comply with the two-week timeframe.

Another issue relates to the dry season sampling. Forgive me if I have forgotten, but I don't recall seeing an authorization for this effort. Typically, the Ventura Fish and Wildlife Office requests that the dry season sampling be conducted after a wet season effort. In any case, Dr. Helm's September 8, 2010 report on the dry season sampling effort revealed >1000 branchinectid cysts in the single feature he sampled (i.e., the large ponded area). Obviously, he did not sample the road-rut areas. In order to conform to our 1996 survey guidance, an additional wet season survey or a dry season survey will be needed for these features.

Because you are only a little more than week over the two-week timeframe and will complete the two-part

survey guidance, we hereby approve your request modify the survey methodology to allow sampling of the two road-rut features to commence at a time period that exceeds that indicated in our survey guidance. We also authorize sampling of the depressional area to the south of the main pool to commence no later than two weeks post-inundation. This area will also need to be followed-up with another wet season survey or dry season sampling to comply with our guidance. Could you please send us an updated map the clearly identifies all of the features you will be sampling? In addition, we would appreciate being notified when you recommence surveys in the larger ponded area and when the depressional area becomes inundated.

If you have any questions, please feel free to give me a call.

julie m. vanderwier
senior fish & wildlife biologist
u.s. fish & wildlife service
ventura fish & wildlife office
2493 portola road, suite b
ventura, ca 93003
desk: 805.644.1766, ext. 222
facsimile: 805.644.3958



Thomas Juhasz <thomas.juhasz@gmail.com>

City of Santa Clarita Project Site TE-208907-0 Amendment1 message

Thomas Juhasz <thomas.juhasz@gmail.com>

Tue, Jan 25, 2011 at 10:26 AM

To: Julie_Vanderwier@fws.gov

Cc: Chris_Dellith@fws.gov

Hi Julie,

Per our conversation yesterday afternoon, I am requesting a variation in the wet season survey protocol for the Santa Clarita vernal pool project due to a recent change in project design which now potentially impacts two road ruts along the utility access roads to the main pool as well as a grass filled depression to the south of the main pool. The road ruts are currently inundated and have been since the original inundation occurred on the main vernal pool on December 26. The grass filled depression is not currently inundated.

Low average temperatures (below 60 degrees Fahrenheit) have been constant through the survey period until last week. The high temperatures to date have caused the main natural pool to dry out for this past protocol visit, before the fairy shrimp within were large enough to identify to species level. The ruts and depression are within close proximity to the main pool and would constitute a complex with the main natural pool. Including these features within the survey for the main natural pool would be consistent with survey standards for vernal pool branchiopods.

Thanks very much for the consideration and please let me know if further information is required.

Best regards,

Thomas Juhasz

On Mon, Jan 24, 2011 at 1:46 PM, <Chris_Dellith@fws.gov> wrote:

Hi Thomas,

If you are starting sampling within 2 weeks of inundation, we are okay with you including this new area in the study.

Sincerely,
Chris

=====
Chris Dellith
Senior Fish & Wildlife Biologist
U.S. Fish & Wildlife Service
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003
(805) 644-1766, ext. 227
chris_dellith@fws.gov

Thomas Juhasz <thomas.juhasz@gmail.com>

To Chris_Dellith@fws.gov

cc

01/24/2011 09:13 AM

Subject : City of Santa Clarita Project Site TE-208907-0 Amendment

Hi Chris,

Due to a change in design, the Santa Clarita Project is requesting an amendment to the vernal pool branchiopod study to include two road ruts along the utility access roads to the main pool and a grass filled depression to the south of the main pool. The road ruts are currently inundated. I have attached a revised site map to indicate the location of the pools.

Thanks very much for the consideration and please let me know if further information is required.

Best regards,

Thomas Juhasz

----- Forwarded message -----

From: **Thomas Juhasz** <uscjuhasz04@hotmail.com>

Date: Sun, Jan 2, 2011 at 5:34 PM

Subject: FW: City of Santa Clarita Project Site TE-208907-0

To: thomas.juhasz@gmail.com

Subject: Re: City of Santa Clarita Project Site TE-208907-0

To: uscjuhasz04@hotmail.com

From: Chris_Dellith@fws.gov

Date: Fri, 30 Apr 2010 07:15:38 -0700

Hi Thomas,

This electronic mail correspondence serves as your authorization to commence listed vernal pool branchiopod surveys at the site described below in your email. In the event that you detect other federally-listed species at this site, you should provide us with this information as well. We look forward to seeing your results.

Sincerely,
Chris

=====

Chris Dellith
Senior Fish & Wildlife Biologist
U.S. Fish & Wildlife Service
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003
(805) 644-1766, ext. 227
chris_dellith@fws.gov

▼ Thomas Juhasz <uscjuhasz04@hotmail.com>

Thomas Juhasz <uscjuhasz04@hotmail.com>

<chris_dellith@fws.gov>

04/29/2010 05:00 PM

To

cc

City of Santa Clarita Project Site TE-
208907-0

Subject

Dear. Mr. Dellith,

I am requesting authorization to conduct a U.S. Fish and Wildlife Service (USFWS) protocol wet season and subsequent dry season surveys for listed vernal pool branchiopods at a City of Santa Clarita vernal pool project site.

The site is generally located at the termination of Robert C. Lee road which extends north from Golden Valley Road in the City of Santa Clarita, Los Angeles County (See attached Vicinity Map). The site itself is undeveloped but is enclosed by development on all sides, with Via Princessa to the north-northeast, Hope Canyon Road to the west, and Rainbow Glen Drive to the east. Based on prior reconnaissance-level biological assessments conducted within the project site, one (1) vernal pool has been identified at the northwest periphery of the parcel under evaluation. The City of Santa Clarita wishes to conduct the listed vernal pool branchiopod survey portion of the assessment at the project site, as no such surveys have been conducted to date.

Due to the surface topography known to be on site, the low permeability of the mud deposits, as well as a clear delineation between vernal pool associated

flora (*Juncus bufonius*, *Psilocarphus brevissimus*, *Gnaphalium palustre*, *Navarretia sp.*) within the depression from upland annual grassland, potential habitat for the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) has been identified on site.

I am proposing to perform the wet season surveys at the project site during the 2010/2011 rain season with dry season survey and cyst analysis during the summer of 2010. If authorized, the wet season surveys will be conducted by Thomas Juhasz (TE-208907-0) and the USFWS protocol dry season surveys will be conducted by Dr. Brent Helm (USFWS Recovery Permit # TE-795930) with project oversight by Thomas Juhasz. Surveys will follow all terms and conditions as specified in the permit and the 1996 USFWS protocol survey guidelines for listed vernal pool branchiopods.

Thank you for your consideration of this request. Please email at this address or call me at [\(626\) 755-5123](tel:6267555123) if you have any questions or need additional information to complete the authorization process.

Best regards,

Thomas Juhasz

The New Busy is not the old busy. Search, chat and e-mail from your inbox.

Get started. (See attached file: [Vicinity Map_Santa Clarita CA..pdf](#))

[attachment "Vicinity Map_Santa Clarita CA._01_24_2011.pdf" deleted by Chris Dellith/VFWO/R1/FWS/DOI]

APPENDIX D WET SEASON DATA SHEETS

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes
Required color slides and/or photographs for the project site are included: ___ no yes

Date: 12/26/2010 Time: 1400 County: Los Angeles Quad: MIAT CANYON

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL VERNAL POOL

Township: 1 Range: 1 Section: 1 lat. 34.405215 long. -118.463585

Temperature: Water: 18° oC Air: 10° oC

Pool Depth: Surface Area:

at time of sampling: 10 cm at time of sampling: 2 m x 1 m

estimated maximum: 11 cm estimated maximum: 2 m x 2 m

Habitat Condition: (circle where appropriate)

- undisturbed
- ungrazed
- disturbed: tire tracks garbage discing/plowing
- grazed: cattle horses sheep other _____
- light moderate heavy

- land use of habitat: NATURAL CLAY LINED VERNAL POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l Conductivity: _____ uMHO
 Dissolved NH4: _____ ppt or ppm Dissolved Oxygen: _____ ppm or mg/l
 pH: _____ Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
 Salinity: _____ ppt or ppm Total Dissolved Solids (TDS): _____ ppm

Notes: Freshly inundated from weeks' rains.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	no
Conchostracans:	yes	no
Copepods:	yes	no
Ostracods	yes	no
Fish	yes	no
Frogs	yes	no
Salamanders	yes	no
Waterfowl	yes	no
Other (specify) _____		

Insects: (adult or larvae)		
Anisoptera:	yes	no
Zygoptera:	yes	no
Hydrophilidae:	yes	no
Dytiscidae:	yes	no
Corixidae:	yes	no
Notonectidae:	yes	no
Belostomatidae:	yes	no
Other (specify) _____		

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 12/26/2010 Time: 1400 County: Los Angeles Quad: MULT CANYON

Collector(s): THOMAS JUHASZ Permit #: TE-208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL DIGLOT Pool #: MAN NATURAL VERNAL POOL

Township: 1 Range: 1 Section: 1 lat. 34.405215 long. -118.453585

Temperature: Water: 18° oC Air: 10° oC

Pool Depth: Surface Area:

at time of sampling: 12 cm at time of sampling: 2 m x 1 m

estimated maximum: 17 cm estimated maximum: 3 m x 1 m

Habitat Condition: (circle where appropriate)

- undisturbed
- ungrazed
- disturbed: tire tracks garbage discing/plowing
- grazed: cattle horses sheep other _____
- light moderate heavy

- land use of habitat: NATURAL CITY LINED REGAR POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l Conductivity: _____ uMHO
 Dissolved NH4: _____ ppt or ppm Dissolved Oxygen: _____ ppm or mg/l
 pH: _____ Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
 Salinity: _____ ppt or ppm Total Dissolved Solids (TDS): _____ ppm

Notes: POOL FRESHLY INUNDATED FROM WEEKS' RAIN.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 12/26/2010 Time: 1400 County: Los Angeles Quad: MIST CAMP

Collector(s): THOMAS JUHASZ Permit #: 12 208 907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL VERNAL POOL

Township: / Range: / Section: / lat. 34.493585 long. 34.405215

Temperature: Water: 18° oC Air: 10° oC

Pool Depth: Surface Area:

at time of sampling: 13 cm at time of sampling: 5 m x 2 m

estimated maximum: 14 cm estimated maximum: 6 m x 3 m

Habitat Condition: (circle where appropriate)

<input checked="" type="checkbox"/> undisturbed	disturbed:	tire tracks	garbage	discing/plowing	
<input checked="" type="checkbox"/> ungrazed	grazed:	cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: NATURAL CLAY LINED VERNAL POOL.

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes: Pool freshly inundated from weeks' rains.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 01/09/2011 Time: 1500 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUNASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL VERNAL POOL

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.453585, 34.405215

Temperature: Water: N/A oC Air: 21° oC

Pool Depth: Surface Area: Dry

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

<input checked="" type="checkbox"/> undisturbed	disturbed: tire tracks	garbage	discing/plowing	
<input checked="" type="checkbox"/> ungrazed	grazed: cattle	horses	sheep	other _____
		light	moderate	heavy

- land use of habitat: NATURAL CLAY VERNAL POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes: SUBPOOLS 2013 in MAIN NATURAL VERNAL POOL HAVE DRIED SINCE OUR LAST VISIT.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 01/09/2011 Time: 1500 County: Los Angeles Quad: Mist Canyon

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL POOL

Township: 1 Range: 1 Section: 1 1 lat. 1 long. -118.493585,
34.405215

Temperature: Water: 20° oC Air: 21° oC

Pool Depth: Surface Area:

at time of sampling: 17 cm at time of sampling: 4 m x 4 m 16 sq m.

estimated maximum: 15 cm estimated maximum: 5 m x 4 m 20 sq m.

Habitat Condition: (circle where appropriate)

undisturbed

disturbed: tire tracks garbage discing/plowing

ungrazed

grazed: cattle horses sheep other _____
light moderate heavy

- land use of habitat: NATURAL VERNAL POOL (CLAY)

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g. 10's, 100's, 1000's)

Anostracans: (note reproductive status) *IMMATURE BRANCHIOECTA sp.*

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 01/23/2011 Time: 1500 County: Los Angeles Quad: MULTI CANYON

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL VERNAL POOL

Township: 1 Range: 1 Section: 1 lat. 34.453585 long. 34.405215

Temperature: Water: N/A oC Air: 16' oC

Pool Depth: Surface Area:

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

<input checked="" type="checkbox"/> undisturbed	disturbed:	tire tracks	garbage	discing/plowing	
<input checked="" type="checkbox"/> ungrazed	grazed:	cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: NATURAL CLOU LINE'S VERNAL POOL.

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A DPY

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	no
Conchostracans:	yes	no
Copepods:	yes	no
Ostracods	yes	no
Fish	yes	no
Frogs	yes	no
Salamanders	yes	no
Waterfowl	yes	no
Other (specify) _____		

Insects: (adult or larvae)

Anisoptera:	yes	no
Zygoptera:	yes	no
Hydrophilidae:	yes	no
Dytiscidae:	yes	no
Corixidae:	yes	no
Notonectidae:	yes	no
Belostomatidae:	yes	no
Other (specify) _____		

Voucher Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 01/29/2011 Time: 1600 County: Los Angeles Quad: MINT CANYON

Collector(s): THOMAS JUHASZ Permit #: TE208907-0

Site/Project Name: SANTA CARITA VERNAL POOL PROJ Pool #: ROAD RVT 1

Township: 1 Range: 1 Section: 1 lat. 34.407209 long. -118.491017

Temperature: Water: 9° oC Air: 17° oC

Pool Depth: Surface Area:

at time of sampling: 7 cm at time of sampling: 5 m x 1 m

estimated maximum: 8 cm estimated maximum: 6 m x 1 m

Habitat Condition: (circle where appropriate)

- | | | | | | |
|---------------|---|---|---------|-----------------|-------------|
| - undisturbed | <input checked="" type="checkbox"/> disturbed | <input checked="" type="checkbox"/> tire tracks | garbage | discing/plowing | |
| - ungrazed | <input checked="" type="checkbox"/> grazed | <input checked="" type="checkbox"/> cattle | horses | sheep | other _____ |
| | | | light | moderate | heavy |

- land use of habitat: UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l	Conductivity: _____ uMHO
Dissolved NH4: _____ ppt or ppm	Dissolved Oxygen: _____ ppm or mg/l
pH: _____	Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
Salinity: _____ ppt or ppm	Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status) BRANCHINSECTA LINDAHLI (MATURE)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
 Conchostracans: yes no
 Copepods: yes no
 Ostracods yes no
 Fish yes no
 Frogs yes no
 Salamanders yes no
 Waterfowl yes no
 Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
 Zygoptera: yes no
 Hydrophilidae: yes no
 Dytiscidae: yes no
 Corixidae: yes no
 Notonectidae: yes no
 Belostomatidae: yes no
 Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 01/29/2011 Time: 1600 County: Los Angeles Quad: MIAT CANYON

Collector(s): THOMAS JUHASZ Permit #: TE 200907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJ Pool #: ROAD RHT 2

Township: 1 Range: 1 Section: 1 lat. 34.40928 long. 34.40962

Temperature: Water: 9° oC Air: 17° oC

Pool Depth: Surface Area:

at time of sampling: 12 cm at time of sampling: 2 m x 8 m

estimated maximum: 14 cm estimated maximum: 3 m x 8 m

Habitat Condition: (circle where appropriate)

- undisturbed disturbed tire tracks
- ungrazed grazed: cattle horses sheep other _____
- land use of habitat: light moderate heavy

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes: UTILITY ACCESS ROAD.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status) *BRANCHINECTA LINDAHLI. (MATURE)*

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 01 / 24 / 2011 Time: 1600 County: Los Angeles Quad: MIST CANYON

Collector(s): THOMAS JUHASZ Permit #: TE200907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJ Pool #: GRASS LINED SWALE

Township: 1 Range: 1 Section: 1 lat. 34.403767 long. -118.452182

Temperature: Water: N/A °C Air: 17° °C

Pool Depth: Surface Area:

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- <input checked="" type="checkbox"/> undisturbed	disturbed:	tire tracks	garbage	discing/plowing	
- <input checked="" type="checkbox"/> ungrazed	grazed:	cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: GRASS LINED DEPRESSION DOMINATED BY BRONNUS
HOEDACORUM + HIESCHFELDIZ INCORP.

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity : _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A dry

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/06/2011 Time: 1630 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL POOL

Township: 1 Range: 1 Section: 1 1 lat. 1 long. -118.493585
34.405215

Temperature: Water: N/A oC Air: 22° oC

Pool Depth: Surface Area:

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- undisturbed
 - ungrazed
 - land use of habitat: CLAY LINED NATURAL VERNAL POOL
- | | | | | |
|------------|-------------|---------|-----------------|-------------|
| disturbed: | tire tracks | garbage | discing/plowing | |
| grazed: | cattle | horses | sheep | other _____ |
| | | light | moderate | heavy |

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l	Conductivity: _____ uMHO
Dissolved NH4: _____ ppt or ppm	Dissolved Oxygen: _____ ppm or mg/l
pH: _____	Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
Salinity: _____ ppt or ppm	Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A DAY

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/06/2011 Time: 16:30 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: Santa Clarita Vernal Pool Project Pool #: Rut 1

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.491013,
34.404209

Temperature: Water: N/A oC Air: 22° oC

Pool Depth: Surface Area: Dry.

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- undisturbed	<input checked="" type="checkbox"/> disturbed	<input checked="" type="checkbox"/> tire tracks	garbage	discing/plowing	
- ungrazed	grazed:	cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: UTILITY ACCESS ROAD.

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A DRY

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
 Conchostracans: yes no
 Copepods: yes no
 Ostracods yes no
 Fish yes no
 Frogs yes no
 Salamanders yes no
 Waterfowl yes no
 Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes
 Zygoptera: yes
 Hydrophilidae: yes
 Dytiscidae: yes
 Corixidae: yes
 Notonectidae: yes
 Belostomatidae: yes
 Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/06/2011 Time: 16:30 County: Los Angeles Quad: Mount Canyon

Collector(s): THOMAS JUHASTZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: ROAD RUT 2

Township: / Range: / Section: / lat. / long. -118.490928,

Temperature: Water: 58° FF oC Air: 22° oC

39.404962

Pool Depth: Surface Area: 176 sq m

at time of sampling: 16 cm at time of sampling: 144 m x 4 m 176 sq m

estimated maximum: 14 cm estimated maximum: 46 m x 4 m 184 sq m

Habitat Condition: (circle where appropriate)

- undisturbed disturbed tire tracks garbage discing/plowing
- ungrazed grazed: cattle horses sheep other _____
- light moderate heavy

- land use of habitat: UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l Conductivity: _____ uMHO
 Dissolved NH4: _____ ppt or ppm Dissolved Oxygen: _____ ppm or mg/l
 pH: _____ Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
 Salinity: _____ ppt or ppm Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status) *BRANCHINECTA LINDHALI (MATURE)*

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/26/2011 Time: 1630 County: Los Angeles Quad: MINT CANYON

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA Vernal Pools Proj. Pool #: GRASS LINED SWALE

Township: / Range: / Section: / lat. / long. -118.452182

Temperature: Water: N/A °C Air: N/A °C

34.403767

Pool Depth: Surface Area:

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

undisturbed

disturbed: tire tracks

garbage

discing/plowing

ungrazed

grazed: cattle

horses

sheep

other _____

light

moderate

heavy

- land use of habitat: Grass filled depression

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH₄: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A *Don't*

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/20/2011 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: Natural/MAIN VERNAL POOL

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.493585,
34.405215

Temperature: Water: 21° oC Air: 10° oC

Pool Depth: Surface Area:

at time of sampling: 15 cm at time of sampling: 2 m x 1 m 2 sq m

estimated maximum: 18 cm estimated maximum: 3 m x 1 m 3 sq m

Habitat Condition: (circle where appropriate)

- undisturbed
- disturbed: tire tracks garbage discing/plowing
- ungrazed
- grazed: cattle horses sheep other _____
- light moderate heavy

- land use of habitat: NATURAL CLAY VERNAL POOL.

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l Conductivity: _____ uMHO
 Dissolved NH4: _____ ppt or ppm Dissolved Oxygen: _____ ppm or mg/l
 pH: _____ Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
 Salinity: _____ ppt or ppm Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

* Freshly INUNDATED from RAINS 02/17 - 02/19.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/20/2011 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUMASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL POOL

Township: 1 Range: 1 Section: 1 1 lat. 1 long. 118.493585,

Temperature: Water: 21° oC Air: 10° oC

34.405215

Pool Depth: Surface Area:

at time of sampling: 7 cm at time of sampling: 0.5 m x 0.5 m 0.25 sq m

estimated maximum: 8 cm estimated maximum: 0.5 m x 0.5 m 0.25 sq m

Habitat Condition: (circle where appropriate)

<input checked="" type="checkbox"/> undisturbed	disturbed: tire tracks	garbage	discing/plowing	
<input checked="" type="checkbox"/> ungrazed	grazed: cattle	horses	sheep	other _____
		light	moderate	heavy

- land use of habitat: NATURAL CLAY VERNAL POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

* Freshly INUNDATED FROM RAIPS 02/17-02/19.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/20/2011 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUMASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: NATURAL VERNAL POOL

Township: / Range: / Section: / / lat. / long. -118.493585,
39.405215

Temperature: Water: 21.9 oC Air: 10.0 oC

Pool Depth: Surface Area:

at time of sampling: 3 cm at time of sampling: 0.3 m x 0.3 m 0.15 sq m

estimated maximum: 3 cm estimated maximum: 0.5 m x 0.5 m 0.15 sq m

Habitat Condition: (circle where appropriate)

- undisturbed
- ungrazed
- disturbed: tire tracks
- garbage
- discing/plowing
- grazed: cattle
- horses
- sheep
- light
- moderate
- heavy
- other _____

- land use of habitat: NATURAL CLAY VERNAL POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l Conductivity: _____ uMHO
 Dissolved NH4: _____ ppt or ppm Dissolved Oxygen: _____ ppm or mg/l
 pH: _____ Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
 Salinity: _____ ppt or ppm Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

* FRESHLY INUNDATED FROM RAIN 02/17-02/19.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 02/20/2011 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJ. Pool #: Grass Lined Swale

Township: 1 Range: 1 Section: 1 1 lat. 1 long. -118.452182,
34.403767.

Temperature: Water: N/A oC Air: 10° oC

Pool Depth: Surface Area: Dry

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

<input checked="" type="checkbox"/> undisturbed	disturbed: <input checked="" type="checkbox"/> tire tracks	garbage	discing/plowing	
<input checked="" type="checkbox"/> ungrazed	grazed: <input type="checkbox"/> cattle	horses	sheep	other _____
		light	moderate	heavy

- land use of habitat:

GRASS LINED SWALE

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes: Dry. Soil saturated but no inundation.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no

Conchostracans: yes no

Copepods: yes no

Ostracods yes no

Fish yes no

Frogs yes no

Salamanders yes no

Waterfowl yes no

Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no

Zygoptera: yes no

Hydrophilidae: yes no

Dytiscidae: yes no

Corixidae: yes no

Notonectidae: yes no

Belostomatidae: yes no

Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03/06/2011 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL VERNAL POOL

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.493585, 34.405215

Temperature: Water: N/A °C Air: 13° °C

Pool Depth: Surface Area: Dry

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- undisturbed

- ungrazed

disturbed: tire tracks

garbage

discing/plowing

grazed: cattle

horses

sheep

other _____

light

moderate

heavy

- land use of habitat: MAIN NATURAL CLAY VERNAL POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH₄: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

1/1000

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03/06/2011 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUHASZ Permit #: TS 208507-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: ROAD RMT 1

Township: 1 Range: 1 Section: 1 1 lat. 1 long. -118.491013, 34.10420

Temperature: Water: 21° oC Air: 13° oC

Pool Depth: Surface Area: 12 sq m

at time of sampling: 11 cm at time of sampling: 6 m x 2 m 12 sq m

estimated maximum: 15 cm estimated maximum: 6 m x 2 m 12 sq m

Habitat Condition: (circle where appropriate)

- undisturbed	<input checked="" type="checkbox"/> disturbed:	<input checked="" type="checkbox"/> tire tracks	garbage	discing/plowing	
- ungrazed	grazed:	cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status) *BRANCHINECTA LINDACHI (MATURE)*

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03/06/2011 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): Thomas J. H. ASZ Permit #: TE 208907-0

Site/Project Name: Santa Clarita Vernal Pool Project Pool #: RAD 2142

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.490928, 34.404962

Temperature: Water: 21° oC Air: 13° oC

Pool Depth: Surface Area:

at time of sampling: 15 cm at time of sampling: 9 m x 2 m 18 sqm

estimated maximum: 20 cm estimated maximum: 10 m x 3 m 30 sqm

Habitat Condition: (circle where appropriate)

- undisturbed	<input checked="" type="checkbox"/> disturbed	<input checked="" type="checkbox"/> tire tracks	garbage	discing/plowing	
- ungrazed	<input type="checkbox"/> grazed	<input type="checkbox"/> cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat:

UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status) BRANCHINECTA sp (IMMATURE)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03/06/2011 Time: 1400 County: Los Angeles Quad: MINT CANYON

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: GRASS LINED SWALE

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long.

Temperature: Water: N/A °C Air: 13° °C

Pool Depth: Surface Area: Dry

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- undisturbed

- ungrazed

disturbed: tire tracks garbage discing/plowing

grazed: cattle horses sheep

light moderate

other _____

heavy

- land use of habitat: GRASS LINED SWALE

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Dissolved NH₄: _____ ppt or ppm

pH: _____

Salinity: _____ ppt or ppm

Conductivity: _____ uMHO

Dissolved Oxygen: _____ ppm or mg/l

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

None

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03/20/2011 Time: 1400 County: LOS ANGELES Quad: MINT CANYON

Collector(s): THOMAS JUHASZ Permit #: FE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL VERNAL POOL

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.493585, 34.465215

Temperature: Water: 17° oC Air: 19° oC RAINING, GUSTS OF WIND.

Pool Depth: Surface Area:

at time of sampling: 8 cm at time of sampling: 3 m x 1.5 m 4.5 sqm

estimated maximum: 10 cm estimated maximum: 3 m x 2 m 6 sqm

Habitat Condition: (circle where appropriate)

- undisturbed

- ungrazed

disturbed: fire tracks

grazed: cattle

garbage

horses

light

discing/plowing

sheep

moderate

other _____

heavy

- land use of habitat: CLAY BARED NATURAL VERNAL POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Dissolved NH4: _____ ppt or ppm

pH: _____

Salinity: _____ ppt or ppm

Conductivity: _____ uMHO

Dissolved Oxygen: _____ ppm or mg/l

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Total Dissolved Solids (TDS): _____ ppm

Notes: FRESHLY INUNDATED FROM PRECIPITATION ON THE PAST 3 DAYS.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03/20/2011 Time: 1400 County: LOS ANGELES Quad: MINT CANYON

Collector(s): THOMAS JIMASZ Permit #: FE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: ROAD RUT 1

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.491013, 34.404209

Temperature: Water: 17° oC Air: 19° oC

Pool Depth: Surface Area:

at time of sampling: 16 cm at time of sampling: 2 m x 10 m 20 sq m

estimated maximum: 17 cm estimated maximum: 3 m x 10 m 30 sq m

Habitat Condition: (circle where appropriate)

- undisturbed	<input checked="" type="checkbox"/> disturbed	<input checked="" type="checkbox"/> tire tracks	garbage	discing/plowing	
- ungrazed	<input type="checkbox"/> grazed	<input type="checkbox"/> cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes: REINUNTIATED FROM PREVIOUS PERIOD.

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03/20/2011 Time: 1400 County: Los Angeles Quad: MINT CANYON

Collector(s): THOMAS JUHASZ Permit #: 19-208307-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: ROAD RUN 2

Township: 1 Range: 1 Section: 1 1 lat. 1 long. -118.490928, 34.404962

Temperature: Water: 17.0 °C Air: 19.0 °C RAINING WITH GUSTS OF WIND

Pool Depth: Surface Area:

at time of sampling: 14 cm at time of sampling: 2 m x 8 m 16 sq m

estimated maximum: 15 cm estimated maximum: 2 m x 8 m 16 sq m

Habitat Condition: (circle where appropriate)

- undisturbed disturbed tire tracks garbage discing/plowing
- ungrazed grazed: cattle horses sheep other _____
light moderate heavy
- land use of habitat: UTILITY ACCESS ROAD.

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH₄: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status) BRANCHINECTA LINDALHI (MATURE)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 03 / 20 / 2011 Time: 1400 County: LOS ANGELES Quad: MINT CANYON

Collector(s): THOMAS JUNAST Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: GRASS LINED SWALE

Township: 1 Range: 1 Section: 1 1 lat. 1 long. -118.492182, 34.403767

Temperature: Water: N/A °C Air: 13° °C

Pool Depth: Surface Area: N/A dry

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- | | | | | | |
|---|------------|-------------|---------|-----------------|-------------|
| <input checked="" type="checkbox"/> undisturbed | disturbed: | tire tracks | garbage | discing/plowing | |
| <input checked="" type="checkbox"/> ungrazed | grazed: | cattle | horses | sheep | other _____ |
| | | | light | moderate | heavy |

- land use of habitat: GRASS LINED SWALE - HAS NOT INUNDATED

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status) *N/A DRY.*

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 04/03/2011 Time: 1400 County: Los Angeles Quad: MINT CANYON

Collector(s): THOMAS JUNASZ Permit #: TEI 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: MAIN NATURAL VERNAL POOL

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.993585, 34.405215

Temperature: Water: 20° oC Air: 21° oC Overcast, chance of showers

Pool Depth: Surface Area:

at time of sampling: 42 cm at time of sampling: 41 m x 6 m 246 sq m

estimated maximum: 50 cm estimated maximum: 13 m x 8 m 344 sq m

Habitat Condition: (circle where appropriate)

<input checked="" type="checkbox"/> undisturbed	disturbed:	fire tracks	garbage	discing/plowing	
<input checked="" type="checkbox"/> ungrazed	grazed:	cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: NATURAL CLAY VERNAL POOL

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status) Branchinecta sp. Mature to BE ID.

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
 Conchostracans: yes no
 Copepods: yes no
 Ostracods yes no
 Fish yes no
 Frogs yes no
 Salamanders yes no
 Waterfowl yes no
 Other (specify) _____

Insects: (adult or larvae)
 Anisoptera: yes no
 Zygoptera: yes no
 Hydrophilidae: yes no
 Dytiscidae: yes no
 Corixidae: yes no
 Notonectidae: yes no
 Belostomatidae: yes no
 Other (specify) _____

Hyla Regia
Spiz Hammondii

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
<u>BRANCHINECTA LYKHTI / VERNAL POOL FAIRY SLAMP</u>	<u>4</u>	<u>LA NATURAL HISTORY MUSEUM</u>	<u>MAIN NATURAL VERNAL POOL</u>

**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 04/09/2011 Time: 14:30 County: LOS ANGELES Quad: MULT CANYON

Collector(s): THOMAS JUNASZ Permit #: TE 208905-0

Site/Project Name: SANTA CLARITA VERNAL POOL #101 Pool #: ROAD RUT ONE

Township: 1 Range: 1 Section: 1 1 lat. 1 long.

Temperature: Water: N/A °C Air: 22° °C

-118.491013, 34.104209

Pool Depth: Surface Area: Dry

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- undisturbed	<u>disturbed</u>	<u>tire tracks</u>	garbage	discing/plowing	
<u>ungrazed</u>	grazed:	cattle	horses	sheep	other _____
			light	moderate	heavy

- land use of habitat: UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH4: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

Notostracans: (note reproductive status)

NA DRY

(Optional) Species Observations:

Cladocerans:	yes	no
Conchostracans:	yes	no
Copepods:	yes	no
Ostracods	yes	no
Fish	yes	no
Frogs	yes	no
Salamanders	yes	no
Waterfowl	yes	no
Other (specify) _____		

Insects: (adult or larvae)		
Anisoptera:	yes	no
Zygoptera:	yes	no
Hydrophilidae:	yes	no
Dytiscidae:	yes	no
Corixidae:	yes	no
Notonectidae:	yes	no
Belostomatidae:	yes	no
Other (specify) _____		

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 04/03/2011 Time: 14:30 County: Los Angeles Quad: MINT CANYON

Collector(s): THOMAS J. HASS Permit #: 12 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: ROAD RNT 2

Township: 1 Range: 1 Section: 1 / 1 lat. 1 long. -118.490928, 34.407962

Temperature: Water: 21° oC Air: 22° oC

Pool Depth: Surface Area:

at time of sampling: 3 cm at time of sampling: 55 m x 11 m 550 m²

estimated maximum: 4 cm estimated maximum: 5 m x 11 m 550 m²

Habitat Condition: (circle where appropriate)

- undisturbed disturbed tire tracks garbage discing/plowing
- ungrazed grazed: cattle horses sheep other _____
light moderate heavy

- land use of habitat: UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l

Conductivity: _____ uMHO

Dissolved NH₄: _____ ppt or ppm

Dissolved Oxygen: _____ ppm or mg/l

pH: _____

Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____

Salinity: _____ ppt or ppm

Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status) BRANCHINECTA LINDAZHI (mature)

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 04/07/2011 Time: 14:30 County: Los Angeles Quad: MIAT CANYON

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJECT Pool #: GRASS LINED SWALE

Township: 1 Range: 1 Section: 1 1 lat. 1 long.

Temperature: Water: N/A °C Air: 23° °C -118.492182, 34.403767

Pool Depth: Surface Area: dry

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- | | | | | | |
|---|------------|-------------|---------|-----------------|-------------|
| <input checked="" type="checkbox"/> undisturbed | disturbed: | tire tracks | garbage | discing/plowing | |
| <input checked="" type="checkbox"/> - ungrazed | grazed: | cattle | horses | sheep | other _____ |
| | | | light | moderate | heavy |

- land use of habitat: GRASS LINED SWALE;

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l	Conductivity: _____ uMHO
Dissolved NH4: _____ ppt or ppm	Dissolved Oxygen: _____ ppm or mg/l
pH: _____	Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
Salinity: _____ ppt or ppm	Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A DM

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
 Conchostracans: yes no
 Copepods: yes no
 Ostracods yes no
 Fish yes no
 Frogs yes no
 Salamanders yes no
 Waterfowl yes no
 Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
 Zygoptera: yes no
 Hydrophilidae: yes no
 Dytiscidae: yes no
 Corixidae: yes no
 Notonectidae: yes no
 Belostomatidae: yes no
 Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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**U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey**

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 01/17/2011 Time: 1400 County: Los Angeles Quad: MIST CANYON

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJ Pool #: GRASS Lined SWALE

Township: 1 Range: 1 Section: 1 lat. ___ long. -118.492182, 34

Temperature: Water: N/A oC Air: 21° oC

Pool Depth: Surface Area:

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- | | | | | |
|---|------------------------|---------|-----------------|-------------|
| <input checked="" type="checkbox"/> undisturbed | disturbed: tire tracks | garbage | discing/plowing | |
| <input checked="" type="checkbox"/> ungrazed | grazed: cattle | horses | sheep | other _____ |
| | | light | moderate | heavy |

- land use of habitat: GRASS LINED DEPRESSION

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l	Conductivity: _____ uMHO
Dissolved NH4: _____ ppt or ppm	Dissolved Oxygen: _____ ppm or mg/l
pH: _____	Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
Salinity: _____ ppt or ppm	Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A DRY

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
 Conchostracans: yes no
 Copepods: yes no
 Ostracods yes no
 Fish yes no
 Frogs yes no
 Salamanders yes no
 Waterfowl yes no
 Other (specify) _____

Insects: (adult or larvae)

Anisoptera: yes no
 Zygoptera: yes no
 Hydrophilidae: yes no
 Dytiscidae: yes no
 Corixidae: yes no
 Notonectidae: yes no
 Belostomatidae: yes no
 Other (specify) _____

Voucher Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ___ no yes

Required color slides and/or photographs for the project site are included: ___ no yes

Date: 09/17/11 Time: 1400 County: Los Angeles Quad: Mint Canyon

Collector(s): THOMAS JUHASZ Permit #: TE 208907-0

Site/Project Name: SANTA CLARITA VERNAL POOL PROJ Pool #: Food Plot 2

Township: / Range: / Section: / / lat. / long.

Temperature: Water: N/A oC Air: 21° oC -118.490928, 34.404962

Pool Depth: Surface Area: Deep

at time of sampling: N/A cm at time of sampling: N/A m x N/A m

estimated maximum: N/A cm estimated maximum: N/A m x N/A m

Habitat Condition: (circle where appropriate)

- undisturbed disturbed tire tracks garbage discing/plowing
- ungrazed grazed: cattle horses sheep other _____
- land use of habitat: light moderate heavy

UTILITY ACCESS ROAD

(Optional) Water Chemistry Data

Alkalinity (total): _____ ppm or mg/l Conductivity: _____ uMHO
Dissolved NH4: _____ ppt or ppm Dissolved Oxygen: _____ ppm or mg/l
pH: _____ Turbidity: (secchi disc depth) _____ cm or: clear to bottom _____
Salinity: _____ ppt or ppm Total Dissolved Solids (TDS): _____ ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans: (note reproductive status)

N/A DPM

Notostracans: (note reproductive status)

(Optional) Species Observations:

Cladocerans: yes no
Conchostracans: yes no
Copepods: yes no
Ostracods yes no
Fish yes no
Frogs yes no
Salamanders yes no
Waterfowl yes no
Other (specify) _____

Insects: (adult or larvae)
Anisoptera: yes no
Zygoptera: yes no
Hydrophilidae: yes no
Dytiscidae: yes no
Corixidae: yes no
Notonectidae: yes no
Belostomatidae: yes no
Other (specify) _____

Voucher Specimens Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species

Individuals

Accession/Catalog #

Pool #

APPENDIX E SITE PHOTOGRAPHS



04_30_2010 **Main Natural Vernal Pool**: View of pool from the center of the dried vernal pool to the east.



04_30_2010 **Main Natural Vernal Pool**: View of vernal pool flora woolly marbles (*Psilocarphus brevissimus*), toad rush (*Juncus bufonius*), and *Navarretia* sp.



04_03_2011 **Main Natural Vernal Pool:** View of inundated pool to the northwest.



04_03_2011 **Main Natural Vernal Pool:** View from the center of inundated pool to the west. Emergent rush (*Juncus* sp.) is in the foreground.



04_03_2011 **Main Natural Vernal Pool**: View from eastern edge of the vernal pool to the west.



04_03_2011 Main Natural Vernal Pool: View of mature *Branchinecta* sampled from the inundated pool.



03_06_2011 **Road Rut 1**: View of inundated pool within the utility access road to the south



03_06_2011 **Road Rut 2**: View of inundated feature within utility access road to the north.



04_03_2011 **Grass Lined Depression:** View south of grass lined swale. Dominant grass is soft brome (*Bromus hordaceous*).



03_06_2011 **Grass Lined Swale:** View of inundated feature to the north.