

## **Appendix U**

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**Waste Management Report  
Alden Environmental, April 2013**

**Conceptual Waste Management Plan  
for the Candlelight Project**

April 2, 2013  
Project Number 2204

Prepared For:

**Candlelight, LLC**

Prepared By:

**Alden Environmental, Inc.**  
3245 University Ave., #1188  
San Diego, CA 92104



# Candlelight Project Waste Management Plan

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## 1.0 INTRODUCTION

This Conceptual Waste Management Plan (WMP) has been prepared for the Candlelight project to address project impacts on landfill capacity and solid waste services, and reduce these impacts to less than significant levels. The City of San Diego (City) has created significance thresholds for direct and indirect impacts upon the City's solid waste services for development projects. These thresholds are described below:

- *Direct Impacts*

Projects that include the construction, demolition, or renovation of 1,000,000 square feet (sq ft) or more of building space may generate approximately 1,500 tons of waste or more and are considered to have direct impacts on solid waste management. The project is proposing development of three lots with a combined area of 857,000 sq ft. This is below the threshold for direct impacts.

- *Cumulative Impacts*

Per the City's thresholds, projects that include construction, demolition, and/or renovation of 40,000 sq ft or more of building space may generate approximately 60 tons of waste or more, and are considered to have cumulative impacts on solid waste facilities. While all projects are required to comply with the City's waste management ordinance, cumulative impacts are mitigated by the implementation of a project-specific Waste Management Plan which reduces solid waste impacts to below a level of significance.

The Candlelight project would exceed the cumulative threshold and therefore a WMP is required. This WMP documents how the project will reduce waste and comply with solid waste and recycling laws and regulations, including the guidelines set forth in AB 939 and AB 341, City Ordinances O-19420, O-19694 and O-19678, and the City of San Diego's Municipal Code Refuse and Recyclable Materials Storage Regulations.

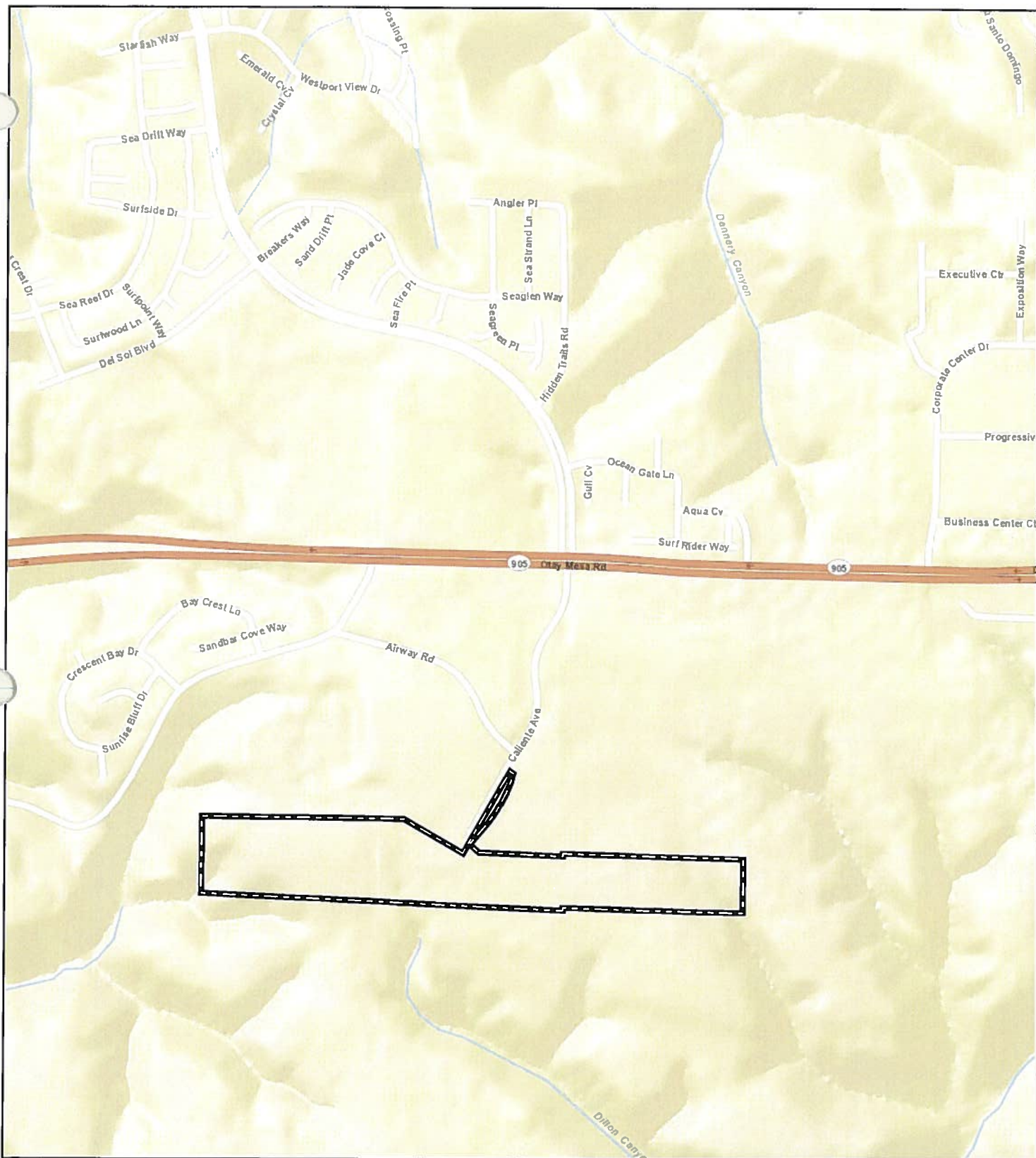
The project will have a target diversion rate of 100% of material during the grading phase (balanced cut and fill) and 92% of waste generated during the construction - building phase. Overall the project has a construction waste diversion goal of 92%. The project will also divert waste generated during the occupancy phase to the extent practicable in accordance with AB 939, AB 341, and City policies regarding waste reduction, recycling, and product procurement.

## 2.0 EXISTING CONDITIONS

The approximately 44.9-acre project site is located in the City's Otay Mesa community 1.1 miles east of Interstate 805 and 1.4 miles north of the U.S./Mexico border (Figure 1). The project site occupies a portion of Section 31 within Township 18 South, Range 1 West of the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle map (Figure 2). A conceptual site plan is included as Appendix B.

The project site consists of a mesa top previously used for agriculture. The site is currently undeveloped and supports native and non-native habitats. On-site elevations range from

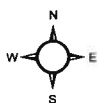




## Legend



Project Boundary



960 480 0 960  
Feet

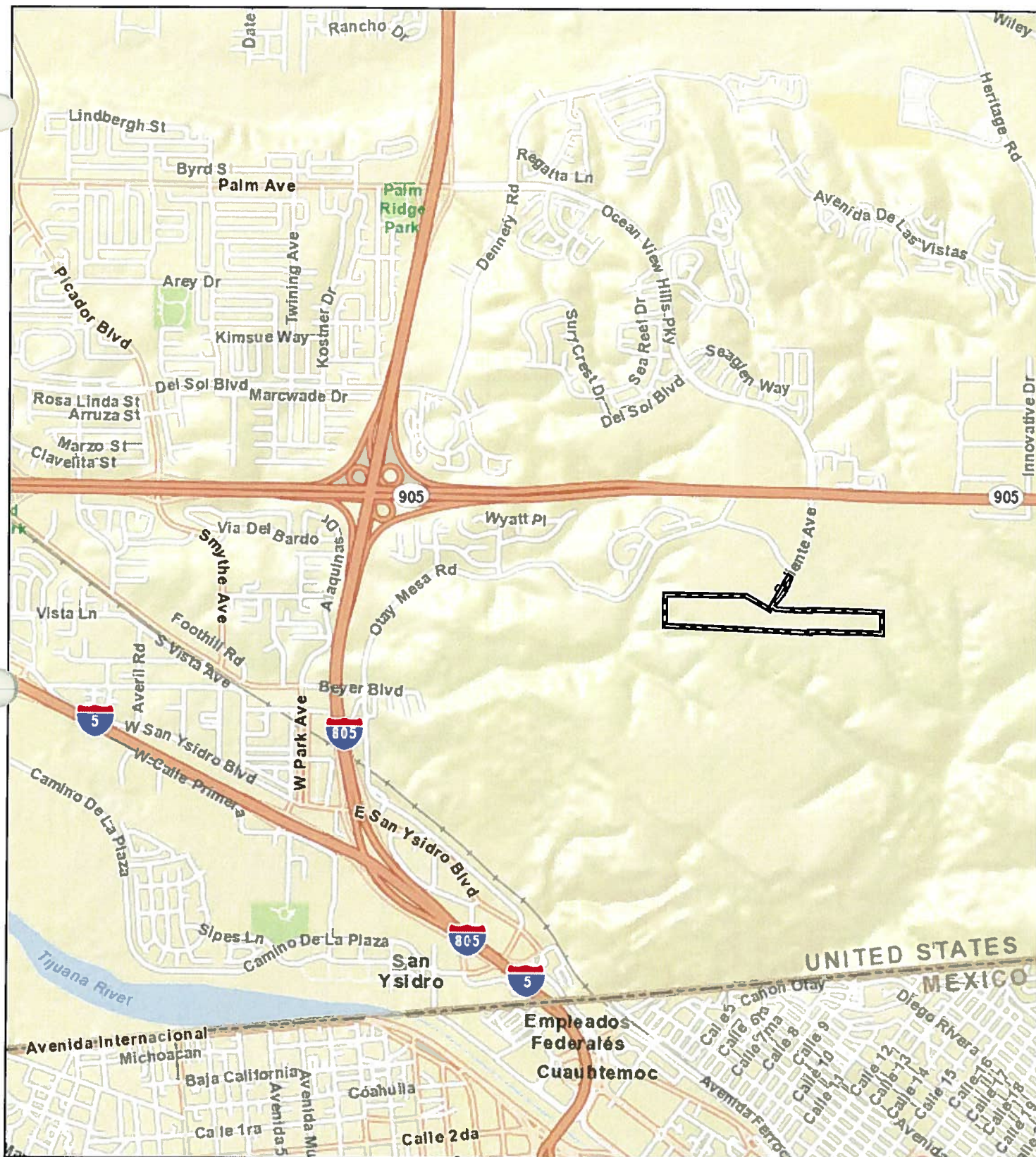
 **ALDEN**  
ENVIRONMENTAL, INC.

**Figure 2**

## Project Location

CANDLELIGHT  
WASTE MANAGEMENT PLAN

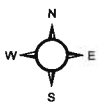




## Legend



Project Boundary



2,400 1,200 0 2,400  
Feet

**ALDEN**  
ENVIRONMENTAL, INC

Figure 1

## Regional Vicinity

CANDLELIGHT  
WASTE MANAGEMENT PLAN

approximately 430 feet to 545 feet above mean sea level. Soils on site consist of Olivenhain cobbly loam and Stockpen gravelly clay loam (Bowman 1973). Historic aerial photographs of the site dating back to 1928 were collected and analyzed to determine the previous land uses on site. The vast majority of the property has been actively farmed since at least 1955; as a result, Lots 1 to 3 have been repeatedly disced and tilled. Earthen berms have been constructed along the site property boundaries in all directions to restrict access and illegal dumping. Based on the historic aerial photograph analysis, it appears that the berms were constructed sometime between 1995 and 1997.

San Ysidro High School bounds the project site northwest of Caliente Avenue, while undeveloped land bounds the project site northeast of Caliente Avenue. In addition, undeveloped land bounds the project site on the south, east, and west. The site is accessed on the northern border via Caliente Avenue.

The existing site is vacant and was previously farmed. Therefore, the existing condition of the site does not generate waste.

### **3.0 PROPOSED PROJECT**

The project would subdivide the property into three multi-family residential lots. The current zoning is RM2-5 with an allowable density of 29 dwelling units per acre. This would allow 647 dwellings on the three lots. However, due to the physical constraints of the property, the project proposes 475 multifamily units.

Road access to the site will be provided by extending Caliente Avenue to the South as a 5 lane major and creating Public Street "A" running East and West below Caliente Avenue as a two lane collector. The project also proposes creating a temporary cul-de-sac to the west of Public Street "A" and another offsite cul-de-sac at the East end of Public Street "A." Internal circulation will be provided by private driveways throughout the project.

Implementation of the proposed project requires approximately 26,400 cubic yards of balanced cut and fill grading. The project will include 469,141 sq ft of pavement/asphalt and 357,192 sq ft of concrete for curbs & driveways. The remaining area of the site will be developed.

Construction practices will comply with local, state, and federal regulations regarding the handling of building materials to ensure that waste minimization requirements are met.

### **4.0 IMPLEMENTATION**

The Developer shall notify the City's Environmental Services Department (ESD) at least 7 days prior to:

- A Grading Permit is issued
- Grading begins onsite
- Inspections are needed



Prior to construction ESD shall attend a pre-construction meeting to ensure that bins are appropriately provided and labeled. ESD also will verify that a waste hauler has been contracted, and that the hauler's contract clearly identifies the required destination for the material to be hauled. The permittee shall arrange for progress inspections and a final inspection as specified in the plan and shall contact ESD to perform these periodic site visits during grading and construction to inspect the progress of the project's waste diversion efforts.

Prior to the issuance of any grading or building permit, release of the grading bond and/or issuance of any Certificate of Occupancy, the permittee shall provide documentation to ESD and the Assistant Deputy Directory (ADD) of the Entitlements Division that the Waste Management Plan has been effectively implemented.

A Solid Waste Management Coordinator (SWMC) will be appointed and their name and contact information should be provided to ESD at least seven days prior to the start of work and when a new person is appointed. The SWMC will oversee implementation of the WMP during the demolition, grading, and construction phases. Among other measures already described in this report, the SWMC will educate all workers and subcontractors about the goals and responsibilities of complying with the WMP and issue stop work orders if noncompliance occurs. The SWMC will provide daily inspections of bins to ensure no overtopping or spillage, and a less than 1% level of contamination. The SWMC will also maintain all records, documentation and photos (where applicable) ensuring compliance with the WMP.

#### ***Construction and Demolition Debris Diversion Deposit Program (O-19420 & O-19694)***

Starting on July 1, 2008, all new construction projects are required to pay a refundable solid waste deposit on construction waste. This ordinance requires the applicant to do the following (City Municipal Code §66.0604):

- All applicants for a Building Permit or a Demolition/Removal Permit shall submit a properly completed *Waste Management Form Part I* with the Building Permit OR Demolition/Removal Permit application, in accordance with the requirements set forth in the Land Development Manual
- All applicants shall pay a refundable deposit at the time the Building Permit or Demolition/Removal Permit is issued
- No Building Permit or Demolition/Removal Permit shall be issued unless the applicant has submitted a properly completed *Waste Management Form Part I* and paid the required deposit

#### **Calculating the Deposit:**

New Construction projects are required to pay a recycling deposit at the time each qualifying building, combination and demolition permit is issued (City 2008). The refundable recycling deposit is calculated based on square footage thresholds of the permitted work. Table 1 below shows the deposit requirements for construction and demolition projects.

<b>Table 1</b> <b>C&amp;D Debris Recycling Deposit</b>				
Type of Activity	Deposit/ sq ft	Area Subject to Deposit (sq ft)		Range of Deposits
		Min	Max	
Residential New Construction - Detached	\$0.40	500	125,000	\$200-\$50,000
Residential New Construction - Attached	\$0.40	500	100,000	\$200-\$40,000
Non-Residential New Constr. - Commercial	\$0.20	1,000	25,000	\$200-\$5,000
Non-Residential New Constr. - Industrial	\$0.20	1,000	75,000	\$200-\$15,000
Non-Residential Alterations	\$0.70	286	No Max.	\$200 and up
Residential Demolition	\$0.70	286	No Max.	\$200 and up
Non-Residential Demolition	\$0.20	1,000	No Max.	\$200 and up

SOURCE: City of San Diego Information Bulletin No. 119 (dated August 2008)

**Completing the Waste Management Form:**

A *Waste Management Form Part I* must be filled out for every qualifying project. Construction and Demolition debris estimates are to be provided in tons. Certified Recycling Facilities must be used in order to be eligible for a deposit refund. It is important to retain a copy of this form as it will be required as part of the documentation for the refund request (City 2008).

**Recycling Requirement:**

The diversion rate is currently 50% by weight of the total Construction and Demolition (C&D) debris generated by the project (City 2008). Once a certified recycling facility is operating within 25 miles of the City Administration Building, which is located at 202 "C" Street, San Diego, the diversion rate shall increase to 75% (City 2008). This recycling requirement can be met by one or more of the following methods (City Municipal Code §66.0606):

- On-site or off-site reuse of the C&D debris
- Recycling of C&D debris at Certified Recycling Facilities; or
- Other donation or reuse of the C&D debris acceptable to the Environmental Services Director

**Requesting a Refund:**

In order to be eligible for a refund of the deposits paid, the applicant must submit the following to the Director of the Environmental Services Department within 180 days from the passing final inspection date of the permit for which the deposit was paid:

- A properly completed *Waste Management Form Part II*
- A copy of the completed *Waste Management Form Part I* submitted at the time the permit was issued
- Evidence satisfactory to the Director that the C&D debris generated by the development was diverted at the applicable diversion rate

To provide evidence to the Director, the applicant will save all recycling, reuse and disposal receipts from project related debris for requesting a refund. Photos proving donation and reuse of materials may be accepted, subject to the Director's approval, in certain cases as proof of evidence of reuse of the project debris. Photos must be accompanied by written estimates (City 2008).

### **Demolition Waste**

The Candlelight project site is currently vacant. Since there are no structures existing on the project site, there will be no waste during demolition.

### **Construction Waste**

#### ***On-Site Grading***

The proposed project anticipates approximately 26,400 cy of balanced cut and fill. No import or export of material waste is anticipated during on-site grading.

The site supports non-native grassland habitat with a relatively low volume of vegetative material. It is anticipated that the existing vegetation can be incorporated into the balanced cut/fill on site and that there would be no waste stream to the landfill.

Other anticipated waste associated with the grading operation includes negligible amounts of trash generated by contractors working on-site.

#### ***Foundation Only***

The building portion of the proposed project will start with the construction of foundations. The anticipated waste consists primarily of concrete sludge from washing out the cement trucks. It is anticipated that 100% of this cement washout will be collected and taken to Otay Valley Rock in Chula Vista to be recycled.

##### *Concrete Sludge Quantity Calculation:*

$$((183 \text{ trucks} \times 0.2 \text{ cy/truck}) \times 2 \text{ tons/cy}) = 73.2 \text{ tons of cement sludge}$$

##### *Broken Formwork Quantity Calculation:*

$$35 \text{ cy} \times 0.05 \text{ ton/cy} = 1.8 \text{ tons of wood}$$

## ***Building Construction***

Based on a review of another multi-family residential project of this size and scale similar in the City a total of 4 tons of waste are estimated for each residential unit:

### **Construction Calculation:**

$$4 \text{ tons/unit} \times 475 \text{ units} = 1,900 \text{ tons}$$

The construction waste material types, amounts, and estimated diversion rates are presented in Table 2.

<b>Table 2 Construction Waste Diversion Goals</b>				
<b>Material Type</b>	<b>Estimated Waste (tons)</b>	<b>Handling</b>	<b>Estimated Diversion (tons)</b>	<b>Estimated Disposal (tons)</b>
Asphalt and Concrete - Foundation	73.2	<b>Otay Valley Rock</b> 2041 Heritage Road Chula Vista, CA 91913 (100% diversion)	73.2	--
Woodwaste - Foundation	1.8	<b>Miramar Greenery</b> 5180 Convoy Street San Diego, CA 92111 (100% diversion)	1.8	--
Asphalt and Concrete	490	<b>Where possible, reuse onsite, remainder to Otay Valley Rock</b> 2041 Heritage Road, Chula Vista, CA 91913 (100% diversion)	490	--
Brick/Masonry/Tile	130	<b>Where possible, reuse onsite, remainder to Reclaimed Aggregates</b> Chula Vista 855 Energy Way, Chula Vista, CA 91911 (100% diversion)	130	--
Cardboard	20	<b>Cactus Recycling</b> 8710 Avenida de la Fuente, San Diego, CA 92154 (100% diversion)	20	--

<b>Table 2 (cont.)</b> <b>Construction Waste Diversion Goals</b>				
Carpet, Padding/Foam	10	<b>DFS Flooring</b> 10178 Willow Creek Road San Diego, CA 92131 (100% diversion)	10	--
Drywall	160	<b>EDCO Recovery and Transfer</b> 3660 Dalbergia St., San Diego, CA 92113 (70% diversion)	112	48
Landscape Debris	20	<b>Miramar Greenery</b> 5180 Convoy Street San Diego, CA 92111 (100% diversion)	25	--
Mixed C&D Debris	385	<b>Reclaimed Aggregates</b> 855 Energy Way, Chula Vista, CA 91911 (76% diversion)	293	92
Roofing Materials	460	<b>LEED Recycling</b> 8725 Miramar Place San Diego, CA 92121 (100% diversion)	460	--
Scrap Metal	55	<b>Pacific Steel</b> 1700 Cleveland Avenue, National City, CA 91913 (100% diversion)	55	--
Unpainted Wood & Pallets	90	<b>Miramar Greenery</b> 5180 Convoy Street San Diego, CA 92111 (100% diversion)	90	--
Garbage/Trash	5	<b>Miramar Landfill</b> 5180 Convoy Street San Diego, CA 92111 (0% diversion)	--	5
<b>Construction Total</b>	<b>1,900</b>	<b>92% Diversion</b>	<b>1,755</b>	<b>145</b>

Separation in designated bins per the categories in Table 2 will help facilitate the reuse and recycling of these materials. These bins will be located in areas that are readily accessible to the subcontractors and in areas that will minimize misuse and contamination. No more than 1% by weight of the bins may be contamination. These construction recycle bins will reduce the impact of the construction on the local landfill.



In total there would be an approximately 92% diversion rate of waste produced during the project construction period. This means that of the estimated 1,900 tons of waste material only approximately 150 tons would be disposed of in a landfill.

In addition to the diversion goals provided above, ten (10) percent of all the building materials will be manufactured regionally within a radius of 500 miles. This will reduce fuel consumption and may reduce the generation of construction debris. To verify, material purchase invoices must be provided to ESD staff showing the total materials ordered, specifying which materials, by weight, were procured within the region.

Five (5) percent of the total value of materials purchased for project construction activities will be either post-consumer recycled or pre-consumer recycled materials. Receipts will be provided to ESD to verify purchases. Some of these materials include the following:

- All roof sheathing will be made from recycled OSB wood
- All exterior shear panels will be made from recycled OSB wood

The waste reduction and recycling goals shall be communicated to subcontractors in their respective Construction Contract Documents.

### ***Construction Report***

Prior to the sign off of the Construction Permit, the applicant shall submit written evidence to the ADD that the final Construction Report has been approved by ESD. This Construction Report shall summarize the results of implementing the Waste Management Plan elements, including: the actual waste generated and diverted from the project, receipts of locally purchased materials, material hauling records, the waste reduction percentage achieved, and how that goal was achieved, etc.

### **Occupancy Waste**

Unlike Construction, Occupancy is an on-going process. Therefore, its waste requirements need an ongoing plan to meet the reduction goals established by local and state policy.

### ***Recycling Ordinance (O-19678)***

As of February 11, 2008, all residential complexes larger than 100 units will be required to provide on-site recycling services, including recycling bins, storage space, and facilities on site, and private haulers (City Municipal Code §66.0701 - §66.00718).

The requirements for Apartment and Condominium Complexes set forth in the Recycling Ordinance states that property managers and owners are responsible for providing the following (City 2009):

### Recycling

- Collection of recyclables at least twice a month
- Collection of at least plastic and glass bottles and jars, paper, newspaper, metal containers, and cardboard
- Designated recycling collection areas
- Appropriate recycling containers and signage

### Education

- Types of materials accepted in recycling program
- Location of the recycling containers
- Tenant's responsibility to comply with the City ordinance (Education must be provided annually to all tenants, upon move-in, and when there are changes to the program)

The Candlelight project will provide recycling bins and storage on-site. The schematic design of the proposed development includes incorporating refuse and recycling chutes accessible to all the residents and clearly labeled with a list of acceptable materials. Additionally, the project will use one or more private companies to haul the solid waste generated at the site for both landfill disposal and recycling services.

Table 3 presents the minimum exterior storage area requirements for multi-family residential development projects. The Candlelight project will construct 475 residential units; therefore, the project will incorporate 1,296 sq ft of exterior refuse storage area and 1,296 sq ft of exterior recyclable material storage. The resulting total exterior refuse/recyclable material storage area will be 2,592 sq ft.

<b>Table 3</b> <b>Minimum Exterior Refuse and Recyclable Material Storage Areas</b> <b>for Residential Development</b>			
<b>Number of Dwelling Units Per Development</b>	<b>Minimum Refuse Storage Area Per Development (sq ft)</b>	<b>Minimum Recyclable Storage Area Per Development (sq ft)</b>	<b>Total Minimum Storage Area Per Development (sq ft)</b>
2-6	12	12	24
7-15	24	24	48
16-25	48	48	96
26-50	96	96	192
51-75	144	144	288
76-100	192	192	384
101-125	240	240	480
126-150	288	288	576
151-175	336	336	672
176-200	384	384	768
201+	384 plus 48 sq ft for every 25 units	384 plus 48 sq ft for every 25 units	768 plus 96 sq ft for every 25 units

SOURCE: San Diego Municipal Code Table 142-08B (City of San Diego Municipal Code §142.0810 - §142.0830)

### ***Quantity of Waste***

During occupancy and after build out of the entire project, the expected annual waste to be generated from the residential development will be approximately:

$$475 \text{ units} \times 1.2 \text{ tons/unit year} = 570 \text{ tons/year}$$

This calculation is based on a multi-family residential waste generation rate of 1.2 tons/year/unit (Multi-family Unit = 1.2 tons/year/unit per The City of San Diego Waste Generation Factors - Occupancy Phase). According to a 2003 study for the State of CA Integrated Waste Management Board, the following are the ten most prevalent material types in multi-family residential disposed waste (Contractor's Report 2004):

- Food
- Remainder/Composite Organics
- Remainder/Composite Paper
- Prunings and Trimmings
- Lumber
- Newspaper
- Uncoated Corrugated Cardboard
- Leaves and Grass
- Remainder/Composite Construction and Demolition
- Other Misc. Paper

Compliance with the City's codes is expected to achieve approximately 40% diversion, reducing the 570 tons per year by 228 tons. That is, each year during occupancy approximately 228 tons of material will be diverted and the remaining 342 tons will be disposed of. This will remove much of the newspaper, cardboard, plastic and metal containers, and other materials required to be included in the City's program, pursuant to the City Recycling Ordinance.

In addition to the waste generated by each residential unit, green waste will be generated from the maintenance of the grass and landscape plantings on site. Maintenance of the landscaped areas will be performed by professional landscaped contractors, who will be required to haul off the clippings and trimmings to a certified greenery recycling center. It is anticipated 100% of the green waste will be diverted to the Miramar Greenery Center. The landscape maintenance contractors will be compensated for the disposal at no more than the gate rate for clean materials.

## **5.0 CONCLUSION**

This Waste Management Plan was prepared as a mitigation measure for the Candlelight project because the proposed development exceeds the significance threshold for cumulative impacts to Solid Waste Facilities outlined in the City Development Services Department, *Significance Determination Thresholds* (City 2011). By incorporating the measures in this plan the project will achieve an overall construction waste diversion of 92% and occupancy waste diversion of 40%. The 92% construction waste diversion far exceeds the City's current 50% goal. However, the 40% diversion rate during occupancy is less than the 75% waste diversion goal established by the State under AB341.

While not meeting the occupancy diversion rate goal, the project has exceeded the construction goal and will implement several other measures to further reduce the amount of waste entering the landfill. These other measures include the 10% “buy local” target that will reduce fuel consumption and decrease construction waste. In addition, a minimum of 5% of the materials used for the project will be from recycled sources. Using recycled materials during construction will help divert material from the landfill and also supports the recyclables market which in turn helps to reduce waste disposal. Finally, 100% of all green waste generated during project landscape maintenance will be diverted, thereby further reducing the overall disposal of waste generated by the project. Incorporation of the measures in this plan will provide sufficient waste diversion such that the project will not have a significant impact upon the City’s landfill system.

A summary of the specific actions to be taken in this plan is provided in Table 4.

<b>Table 4</b> <b>Specific Plan Actions</b>	
<b>Action</b>	<b>Responsible Party</b>
Submit Waste Management Form Part I	Applicant
Payment of refundable deposit	Applicant
Appoint a SWMC	Applicant
Pre-construction meeting	Applicant/ESD
Verification of waste hauler	ESD
Periodic site visits	ESD
Provide evidence of 10% “buy local” effort	Applicant
Provide evidence of 5% recyclable material use	Applicant
Provide and use designated construction waste bins	Applicant
Monitor bin use during construction	ESD/SWMC
Provide on-site recycling services for occupancy	Applicant
Provide 2,040 sq ft of refuse and recyclable storage area	Applicant
Prepare final construction report and submit to ESD	Applicant
Final sign off of construction report	ESD

## 6.0 REFERENCES

City of San Diego (City) 2008. Information Bulletin 119: Construction and Demolition Debris. August.

2009. Environmental Services Department Website: Recycling Ordinance – Residential. Accessed January 20, 2009. <http://www.sandiego.gov/environmental-services/recycling/ro/residential/index.shtml#apt>.

2011. Development Services. Land Development Review Division. Significance Determination Thresholds. January.

Cascadia Consulting Group, Inc. 2004. Contractor's Report to the Board, Statewide Waste Characterization Study. December.

**Appendix A**  
**Conceptual Site Plan**

## **Appendix V**

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**Traffic Sensitivity Analysis  
Kimley Horn & Assocs., June 25, 2015**

June 25, 2015

■  
Suite 600  
401 B Street  
San Diego, California  
92101

Mr. Walter Schwerin  
Schwerin and Associates  
814 Morena Blvd, Suite 101  
San Diego, CA 92110

Re: Sensitivity Analysis for Transportation Unmitigated Impacts

Dear Mr. Schwerin:

A Traffic Impact Study (TIA) was prepared by our firm for your Candlelight project, a multi-family residential community with 475 dwelling units at a density of over 20 dwelling units per acre. The TIA was approved by the City of San Diego in June 2013. The results of The Traffic Impact Study indicate that the proposed project would have the following unmitigated traffic related impacts:

- Horizon Year Cumulative impact along SR-905 freeway between Caliente Avenue and Britannia Boulevard; and
- Horizon Year Cumulative impact at the SR-905/Caliente Avenue WB on-ramp.

This memorandum has been prepared to document an analysis of a reduced project intensity that would not cause an impact to the freeway segment and ramp meter analysis listed above. The study found that a project with 171 dwelling units would not cause an unmitigated traffic related impact.

## **Traffic Generation**

In order to estimate the traffic generation for the 171 dwelling units site, standard City of San Diego traffic generation rates taken from the City of San Diego *Trip Generation Manual* (May 2003) were applied to the proposed project. "Multiple Dwelling Units – Under 20 dwelling units per acre" rates were used to estimate the daily trip rate and morning and afternoon peak-hour traffic generation for this use. **Table 1** summarizes the trip generation for the site. As shown in the table, the site would generate a total of 1,368 new daily trips, including 109 (22 in, 87 out) a.m. peak-hour trips, and 123 (86 in, 37 out) p.m. peak-hour trips.



### **Trip Distribution**

The same traffic distribution assumed in the June 2013 approved traffic study for the project was assumed for the reduced project alternative. **Figure 1** shows the project traffic distribution for the Horizon Year Conditions. **Figure 2** illustrates the project traffic assignment for the Horizon Year Conditions.

### **Traffic Assignment**

Based on the project trip distribution, daily and a.m. and p.m. peak-hour project trips were assigned to the study area. **Figure 2** illustrates the project traffic assignment for the Horizon Year Conditions.

### **Analysis Results**

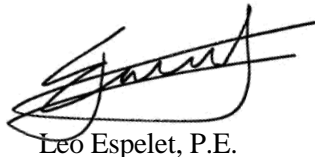
**Table 2** displays the freeway segment analysis under the Horizon Year with and without the reduced project conditions. As shown in the table, both freeway segments in the study area would function at LOS F with and without the addition of the proposed reduced project alternative. Based on the City of San Diego's criteria, the reduced alternative project traffic would not increase the freeway v/c ratio enough to be considered to be a significant cumulative impact.

**Table 3** summarizes the ramp metering analysis for the metered freeway ramps under the Horizon Year with and without the project conditions. As shown in the Table and based on the City's criteria, the proposed reduced project alternative would not be considered to have a cumulative traffic related impacts at the ramp meters within the study area.

Please call me if you have any questions or comments.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.



Leo Espelet, P.E.

K:\SND\_TPTO\095809001-Candlelight\Report\Candlelight Reduced Project Alternative Memo 06-25-15.doc

Attachment:

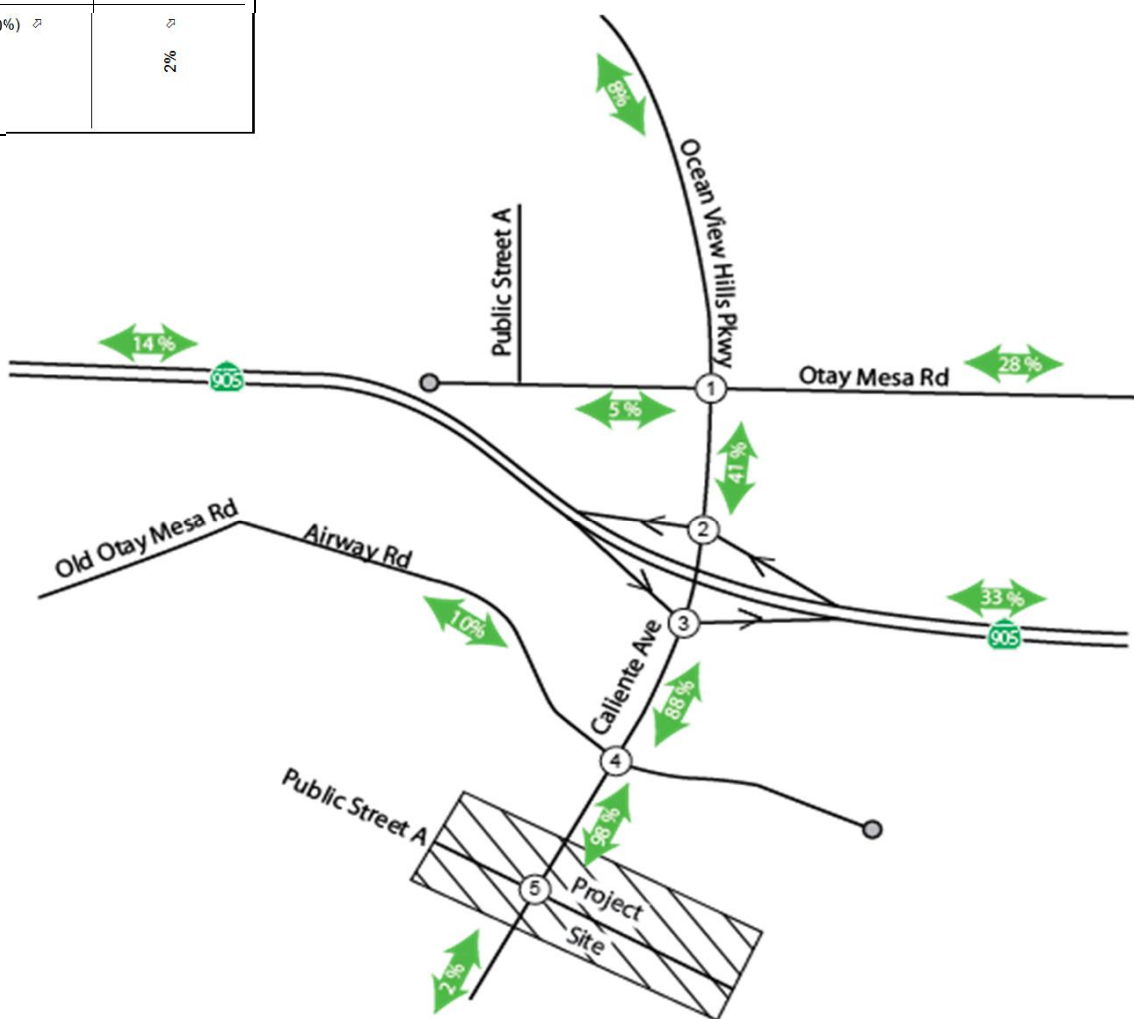
Figures 1 and 2, Tables 1 - 3

## **ATTACHMENTS**

---

# Candlelight

<div>1</div> <table> <tr> <td>⇐ 8%</td> <td>Ocean View Hills Pkwy</td> <td>⇐ 28%</td> <td>Otay Mesa Rd</td> </tr> <tr> <td>⇐ 5%</td> <td>Calliente Ave</td> <td>⇐ (5%) ⇐ (8%) ⇐ (28%)</td> <td></td> </tr> </table>	⇐ 8%	Ocean View Hills Pkwy	⇐ 28%	Otay Mesa Rd	⇐ 5%	Calliente Ave	⇐ (5%) ⇐ (8%) ⇐ (28%)		<div>2</div> <table> <tr> <td>⇐ 41%</td> <td>Calliente Ave</td> <td>⇐ 33%</td> <td>SR-905 WB Ramps</td> </tr> <tr> <td></td> <td></td> <td>⇐ (14%) ⇐ (41%)</td> <td></td> </tr> </table>	⇐ 41%	Calliente Ave	⇐ 33%	SR-905 WB Ramps			⇐ (14%) ⇐ (41%)		<div>3</div> <table> <tr> <td>⇐ 74%</td> <td>Calliente Ave</td> <td></td> <td>SR-905 EB Ramps</td> </tr> <tr> <td></td> <td></td> <td>⇐ 14%</td> <td>⇐ (55%) ⇐ (33%)</td> </tr> </table>	⇐ 74%	Calliente Ave		SR-905 EB Ramps			⇐ 14%	⇐ (55%) ⇐ (33%)	<div>4</div> <table> <tr> <td>⇐ 50%</td> <td>Calliente Ave</td> <td>⇐ 22%</td> <td>Airway Rd</td> </tr> <tr> <td></td> <td></td> <td>⇐ (10%) ⇐ (50%) ⇐ (22%)</td> <td></td> </tr> </table>	⇐ 50%	Calliente Ave	⇐ 22%	Airway Rd			⇐ (10%) ⇐ (50%) ⇐ (22%)	
⇐ 8%	Ocean View Hills Pkwy	⇐ 28%	Otay Mesa Rd																																
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		⇐ (10%) ⇐ (50%) ⇐ (22%)																																	
<div>5</div> <table> <tr> <td>⇐ 10%</td> <td>Calliente Ave</td> <td>⇐ (88%)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>⇐ (2%)</td> <td>Public Street A</td> </tr> <tr> <td>⇐ (10%)</td> <td></td> <td>⇐ 2%</td> <td></td> </tr> </table>	⇐ 10%	Calliente Ave	⇐ (88%)				⇐ (2%)	Public Street A	⇐ (10%)		⇐ 2%																								
⇐ 10%	Calliente Ave	⇐ (88%)																																	
		⇐ (2%)	Public Street A																																
⇐ (10%)		⇐ 2%																																	



## Legend

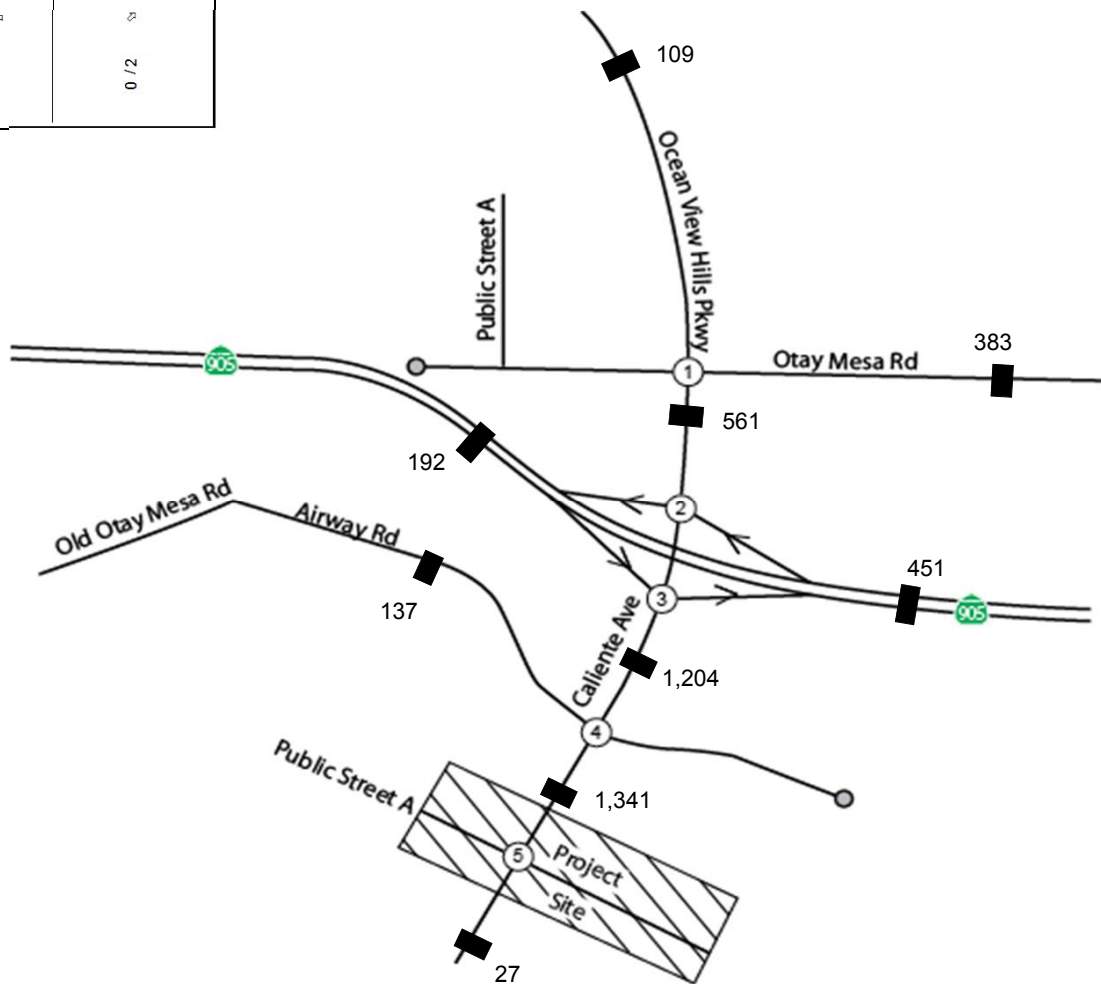
X% / (Y%) = IN / OUT PERCENT DISTRIBUTION



NOT TO SCALE

# Candlelight

<div>1</div> <div> <div>2 / 7</div> <div>Ocean View Hills Pkwy</div> <div>6 / 24</div> <div>Otay Mesa Rd</div> </div> <div> <div>1 / 4</div> <div>Calliente Ave</div> <div>4 / 2</div> <div>7 / 3</div> <div>24 / 10</div> </div>	<div>2</div> <div> <div>9 / 35</div> <div>Calliente Ave</div> <div>7 / 28</div> <div>SR-905 WB Ramps</div> </div> <div> <div>12 / 5</div> <div>36 / 15</div> </div>	<div>3</div> <div> <div>16 / 64</div> <div>Calliente Ave</div> <div>SR-905 EB Ramps</div> </div> <div> <div>3 / 12</div> <div>48 / 20</div> <div>29 / 12</div> </div>	<div>4</div> <div> <div>11 / 43</div> <div>Calliente Ave</div> <div>5 / 19</div> <div>Airway Rd</div> </div> <div> <div>2 / 9</div> <div>9 / 4</div> <div>44 / 19</div> <div>19 / 8</div> </div>
<div>5</div> <div> <div>2 / 9</div> <div>19 / 76</div> <div>Calliente Ave</div> <div>77 / 33</div> <div>2 / 1</div> <div>Public Street A</div> </div> <div> <div>9 / 4</div> <div>0 / 2</div> </div>			



**TABLE 1**  
**TRIP GENERATION SUMMARY**

Land Use					AM Peak-Hour					PM Peak-Hour				
					% of ADT <sup>2</sup>	In:Out Ratio <sup>2</sup>	In	Out	Total	% of ADT <sup>2</sup>	In:Out Ratio <sup>2</sup>	In	Out	Total
Driveway Trips <sup>3</sup>														
<i>Proposed</i>														
Candlelight	Multiple Dwelling Unit - Under 20 dwelling units/acre	171 du	8 / du	1,368	8%	2.00 : 8.00	22	87	109	10%	7.00 : 3.00	96	41	137
<b>Proposed Total</b>				<b>1,368</b>										
<b>NET TRIP GENERATION =</b>				<b>1,368</b>										

Note:

1. DU = Dwelling Unit

2. Trip rates referenced from the City of San Diego Land Development Code - Trip Generation Manual, May 2003.

3. Driveway trips are the total number of trips generated by a site.

K:\SND\_TPTO\095809001-Candlelight\Excel\809001TG01.xlsm\Summary

**TABLE 2**  
**HORIZON YEAR (YEAR 2035) CONDITIONS**  
**FREEWAY SEGMENT ANALYSIS SUMMARY**

FREEWAY SEGMENTDIRECTIONNUMBER OF LANESCAPACITY (a)				HORIZON YEAR (YEAR 2035) BASELINE						PROJECT PEAK-HOUR VOLUMEAMPM		HORIZON YEAR (YEAR 2035) WITH PROJECT						V/C RATIO ΔSIGNIFICANT?		
				AM PEAK			PM PEAK					AM PEAK			PM PEAK					
				PEAK-HOUR VOLUME (b)	V/C RATIO	LOS	PEAK-HOUR VOLUME (b)	V/C RATIO	LOS			PEAK-HOUR VOLUME	V/C RATIO	LOS	PEAK-HOUR VOLUME	V/C RATIO	LOS			
				AM	PM	V/C	RATIO Δ	SIGNIFICANT?												
SR-905																				
I-805 to Caliente Ave	WB	3 M	7,050	5,593	0.793	C	8,399	1.191	F0	12	5	5,605	0.795	C	8,404	1.192	F0	0.00173	0.00073	NO
	EB	3 M	7,050	8,380	1.189	F0	5,614	0.796	C	3	12	8,383	1.189	F0	5,626	0.798	C	0.00044	0.00171	NO
Caliente Ave to Britannia Blvd	WB	3 M	7,050	4,938	0.700	C	7,416	1.052	F0	7	28	4,945	0.701	C	7,444	1.056	F0	0.00103	0.00403	NO
	EB	3 M	7,050	7,397	1.049	F0	4,959	0.703	C	29	12	7,426	1.053	F0	4,971	0.705	C	0.00407	0.00173	NO

Notes:  
**Bold** values indicate freeway segments operating at LOS E or F.  
M= Main lane; A= Auxiliary lane; T=Truck lane  
(a) The capacity is calculated as 2,350 vehicles per hour per lane (vhl) for the main lanes, at 1,800 vhl per auxiliary lanes, and at 1,600 vhl per truck lanes and HOV lanes  
(b) Peak-hour volumes taken from the San Diego - Tijuana Cross Border Facility Project Traffic Impact Study and adjusted to remove the existing land use at the project site.

**TABLE 3**  
**HORIZON YEAR CONDITIONS**  
**PEAK-HOUR RAMP METERING ANALYSIS SUMMARY**

ON-RAMP	PEAK PERIOD	NUMBER OF LANES (SOV)	METER RATE <sup>1</sup> (veh/hr/ln)	BASELINE DEMAND <sup>2</sup> (veh/hr)	EXCESS BASELINE DEMAND (veh/hr)	AVERAGE BASELINE DELAY (min)	AVERAGE BASELINE QUEUE	WITH PROJECT DEMAND <sup>2</sup> (veh/hr)	EXCESS WITH PROJECT DEMAND (veh/hr)	AVERAGE WITH PROJECT DELAY (min)	FREEWAY LOS	ΔIN DELAY WITH PROJECT (min)	SIGNIFICANT ?	AVERAGE WITH PROJECT QUEUE
Caliente Ave & SR-905 WB Ramp	AM	1	480	1506	1026	128.3	25,650 ft	1518	1038	129.8	C	1.5	NO	25,950 ft
	PM	1	480	2419	1939	242.4	48,475 ft	2424	1944	243.0	F0	0.6	NO	48,600 ft
Caliente Ave & SR-905 EB Ramp	AM	1	480	280	0	0.0	0 ft	309	0	0.0	F0	0.0	NO	0 ft
	PM	1	480	202	0	0.0	0 ft	214	0	0.0	C	0.0	NO	0 ft

Notes:

1) Meter rates were provided by Caltrans. The meter rates for these locations are based on typical ramp metering operations. It is assumed that 2 vehicles per green will be allowed. The meter rates for a 2 vehicle per green operation ranges from 480 vehicles per hour per lane to 900 vehicles per hour per lane. The meter rate used in the analysis represent average service rate.

2) Demand is the peak hour demand expected to use the on-ramp

## **Appendix W**

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**Quino Checkerspot Survey  
Alden Environmental, May 4, 2012**



**2012 Report**  
**U.S. Fish and Wildlife Service Protocol Level**  
**Presence/Absence Survey for the**  
**Quino Checkerspot Butterfly**  
**(*Euphydryas editha quino*)**

May 4, 2012

Prepared for:

**Candlelight Properties, LLC**  
Project No. 40329

Prepared by:

**Alden Environmental, Inc.**  
3245 University Ave., #1188  
San Diego, CA 92104



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REFERENCES CITED.....	1

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1	Regional Vicinity Map.....	1
2	Project Location Map.....	1
3	Site Assessment and Host Plant Location Map .....	1

## LIST OF APPENDICES

<u>Letter</u>	<u>Title</u>
A	Summary of Field Survey Conditions and Results
B	Copies of Field Notes
C	Lists of Butterflies Observed During Each Survey

## INTRODUCTION

This report documents the results of Alden Environmental Planning, Inc.'s (Alden's) surveys for the federally listed endangered Quino checkerspot butterfly (QCB; *Euphydryas editha quino*) on the Candlelight project site. The surveys were performed under Subcontractor Darin Busby's Threatened/Endangered species permit (TE-115372-2) and Greg Mason's Threatened/Endangered species permit (TE-58862A-0). The Candlelight project is located on a 44.9-acre parcel in the City of San Diego's Otay Mesa community (Figures 1 and 2). The project site occupies a portion of Section 31 within Township 18 South, Range 1 West of the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle map.

## METHODS

U.S. Fish and Wildlife Service (USFWS) protocol QCB presence/absence surveys were previously conducted in 2004 and 2005 (Helix 2004, 2005). The entire area was found to be suitable habitat at that time and no areas were excluded. An additional protocol survey was conducted in 2012 in accordance with the Year 2002 Survey Protocol Information (USFWS 2002a) and Survey Recommendations (USFWS 2002b), the results of which are documented in this report. A total of six survey visits were conducted between February 16 and March 22, 2012. The entire project footprint was surveyed during each visit. Meandering transects were walked across the site to ensure full coverage. Plant and animal species observed were recorded. QCB host plants also were mapped when observed. Dates, times, and weather conditions at the beginning and ending of each survey are presented in Appendix A. Copies of field notes from each survey are provided in Appendix B. Lists of butterflies observed during each survey are provided in Appendix C.

## RESULTS

No QCB were observed. Overall, the habitat quality is considered to be low to moderate with the only high quality habitat occurring at the eastern end of the site outside of the development footprint and within the preserve area (Figure 3). The only host plant observed was dot-seed plantain (*Plantago erecta*). This species was observed just off site, to the east of the property (Figure 3). Based on this and previous surveys, the QCB is not anticipated to occur on site.

## REFERENCES CITED

Helix Environmental Planning, Inc. 2004. U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly for the Candlelight Property, San Diego.

2005. U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly for the Candlelight Property, San Diego.

U.S. Fish and Wildlife Service (USFWS). 2002a. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 2002 Survey Protocol Information. February.

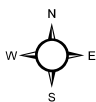
2002b. Quino Checkerspot Butterfly 2002 Survey Recommendations. February 12.



## Legend



Project Boundary



2,400 1,200 0 2,400  
Feet

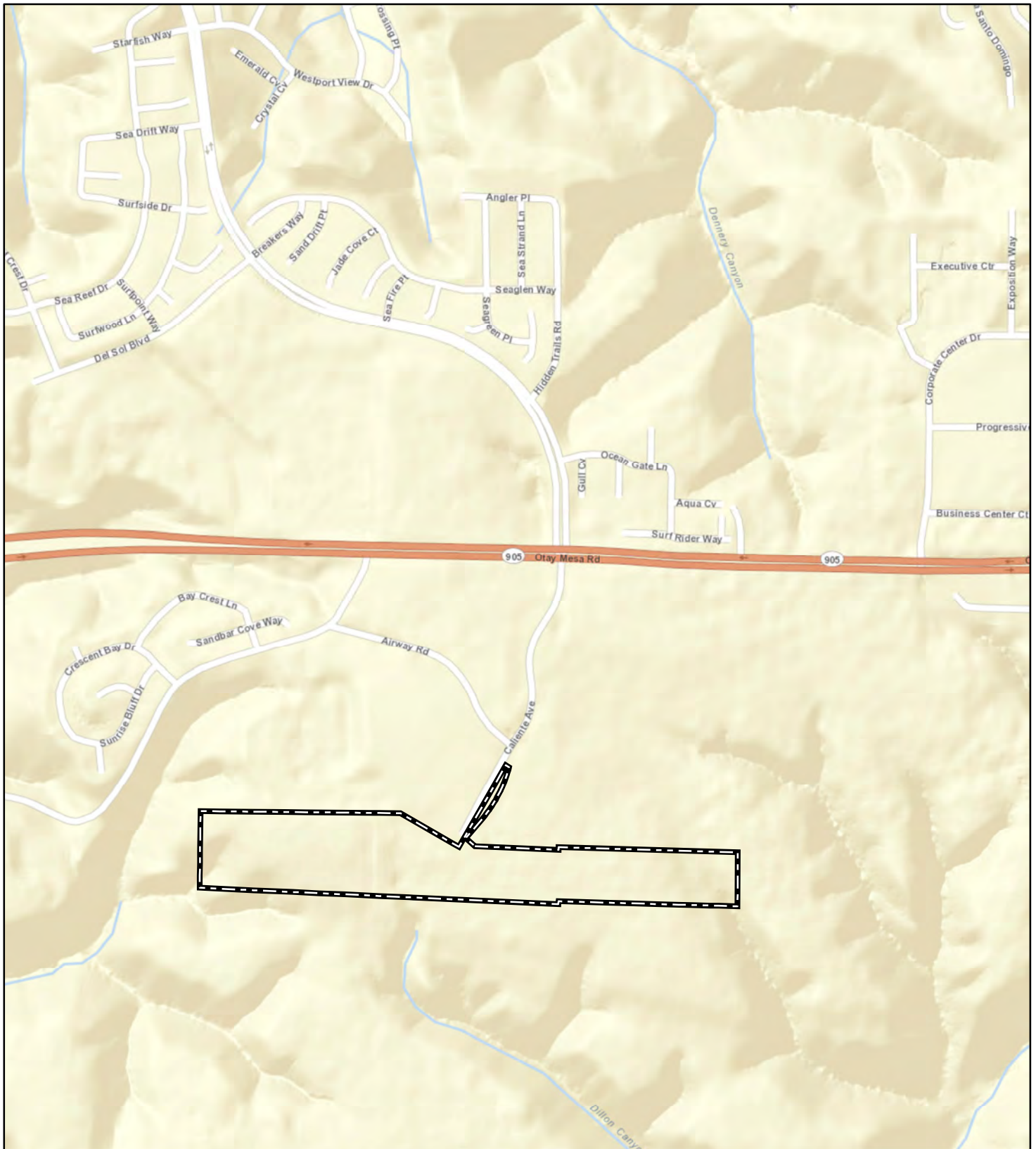
**ALDEN**  
ENVIRONMENTAL, INC

**Figure 1**

Regional Vicinity

CANDLELIGHT  
QUINO CHECKERSPOT BUTTERFLY SURVEY

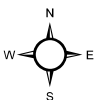




## Legend



Project Boundary



1,000 500 0 1,000  
Feet

 **ALDEN**  
ENVIRONMENTAL, INC


**Figure 2**

## Project Location

CANDLELIGHT  
QUINO CHECKERSPOT BUTTERFLY SURVEY



**Legend**  
 Biologists: Darin Busby (TE-115372-2)  
 Greg Mason (TE-58862a-0)  
 USGS Imperial Beach Quadrangle, CA  
 Excluded Areas: None  
 Larval Host Plant Location: ★ Dot-Seed Plantain (*Plantago erecta*)

 Survey Area

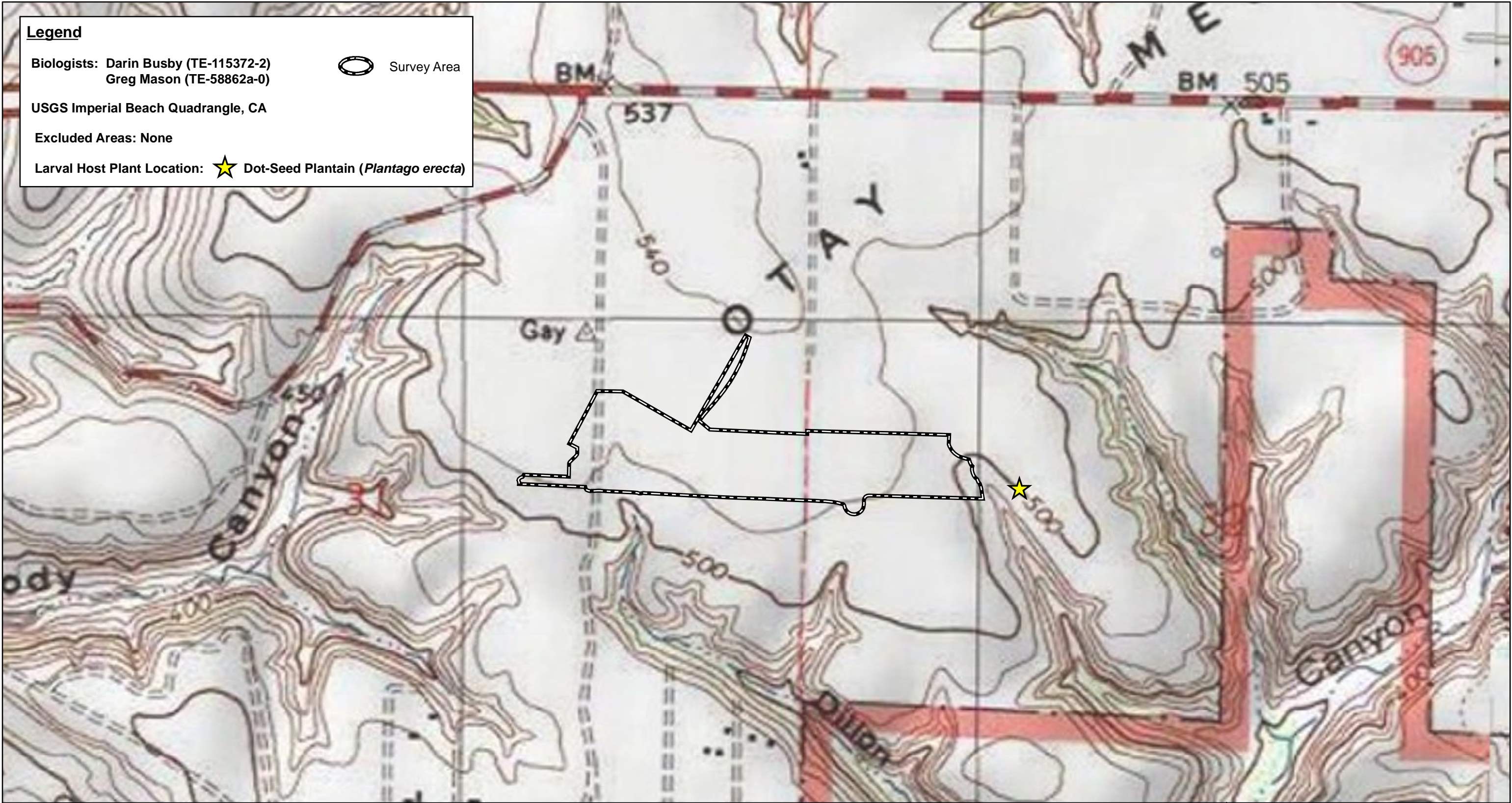
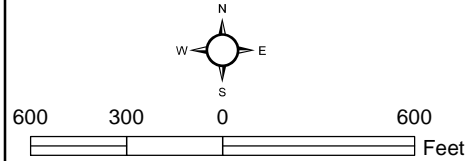


Figure 3

Site Assessment and  
Host Plant Location Map

CANDLELIGHT  
QUINO CHECKERSPOT BUTTERFLY SURVEY





**Appendix A**  
**SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS**

<b>Site Visit</b>	<b>Date of Survey</b>	<b>Personnel</b>	<b>Survey Time (24 hr; start/end)</b>	<b>Weather Conditions (start/end) <sup>1</sup></b>	<b>Results</b>
1	2/16/12	Darin Busby	1105/1515	61°F, wind 3-5 mph, sunny, 20% clouds / 64°F, wind 3-5 mph, sunny, 20% clouds	No QCB observed
2	2/21/12	Darin Busby	1130/1540	69°F, wind 3-5 mph, 0% clouds/ 72°F, wind 5-8 mph, 0% clouds	No QCB observed
3	3/1/12	Darin Busby	1145/1600	62°F, wind 3-5 mph, sunny, 20% clouds/ 61°F, wind 5-10 mph, sunny, 20% clouds	No QCB observed
2	3/5/12	Darin Busby	1135/1540	76°F, wind 3-5 mph, 60% clouds/ 73°F, wind 3-5 mph, 40% clouds	No QCB observed
5	3/15/12	Darin Busby	1030/1430	66°F, wind 1-3 mph, 10% clouds/ 67°F, wind 3-8 mph, sunny, 30% clouds	No QCB observed
6	3/22/12	Greg Mason	1015/1430	60°F, wind 0-3 mph, scattered clouds/ 65°F, wind 3-8 mph, scattered clouds	No QCB observed

<sup>1</sup> Temperature was taken on the ground in the shade.

**Appendix B**  
**COPIES OF FIELD NOTES**



Location Otay Mesa, CA Date 2/16/12  
 Project / Client Alden Environmental - Candlelight Villas East  
QCB SURVEY # 1

1015 (146693 m.) - 1600 (146753 m.)  
 5.5 hrs + 60 mi

Start: 1105, 61 F, 3-5 mph, Sunny 20% clouds, 0 precip.  
 1300, 64 F, 3-8 mph, Sunny 20% clouds, 0 precip.  
 end: 1515, 64 F, 3-5 mph, Sunny 20% clouds, 0 precip.

### Notes

- Site is extremely disturbed w/ NNG, dirt roads and other ground disturbance (berms), trash and dumping
- PLA ERE (flowering) around fringes of off site vernal pool (~30 ft east of SE corner of site). Approx 1-3cm tall, patch of hundreds.
- PLA ERE also observed in a few scattered locations along road bordering the eastern boundary of site (off site)
- ~~Butterfly~~ Butterfly activity and diversity is low
- Flowering plants are low in numbers and diversity with most of the native flowering plants concentrated in the extreme eastern portion of site, where butterfly activity is also highest.

Location \_\_\_\_\_ Date 2/16/12  
 Project / Client (Cont.)

### Flowering Plants

RHU INT  
 DIC CAP  
 LOT XO  
 ISO ARB  
 VIG LAC  
 ENC CAL  
 \* PLA ERE  
 AME MEN  
 NIC GLA  
 BAC SAL  
 DOD CLE  
 Oxalis sp.  
 Plagiobothrys sp.  
 Chrysanthemum  
 Melilotus

### Host plants

PLA ERE  
 (~30 ft. east of SE corner of site)  
 - Also in couple other scattered locations along road bordering eastern boundary of site

### Butterflies

Calif. ringlet ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~  
 West Coast lady II  
 Painted lady IIII  
 Saras orange tip II  
 Pygmy blue I  
 Common checkered skipper I

### Other wildlife

HOFI LOSH  
 WEME WEGH  
 VESP ANHU  
 NCHA RTHA  
 AMKE CATH  
 BLPH LEGO  
 CALT SOSP  
 CORA Cottontail rabbit  
 SAPH Ground squirrel

Location Otay Mesa, CADate 2/21/12Project / Client Alden Environmental - Candlelight Villas East  
QCB Survey #21050 (146805 mi) - 1620 (146865 mi)  
5.5 hrs + 60 miStart: 1130, 69 F, 3-5 mph, 0% clouds, 0 precip  
1330, 73 F, 5-10 mph, 0% clouds, 0 precip  
end: 1540, 72 F, 5-8 mph, 0% clouds, 0 precipNotes

- Significantly more butterfly activity and numbers than during Survey #1
- New patch of PLA ERE found offsite on west side of canyon near SE corner of site.

Location \_\_\_\_\_

Date 2/21/12Project / Client (Cont.)Flowering Plants

Melilotus SIS BEL  
Oxalis SAM MEX  
AME MEW LAS CAL  
NIC GLA  
ENC CAL  
Brassica  
BAC SAL  
VIG LAC  
RHU INT  
DIC CAP  
LOT SCO  
\* PLA ERE  
DOD CLE  
Chrysanthemum  
plagiobothrys  
Jajba

Butterflies

Calif. ringlet ~~|||||~~ ||  
Painted lady ~~||||~~ ||  
Funeral duskywing |||  
Behrs metalmark |||  
West coast lady ~~|||||~~ |||  
Saras orangetip |  
Pygmy blue |||

Host plants

PLA ERE  
(small patch  
in dirt road  
~125 ft.  
south/offsite  
in SE corner  
of site on  
west side of  
canyon)

Other wildlife

WEME  
LEGO  
SOSP  
SAPH  
HOFI  
ANH4  
CORA  
NOMO  
CALT  
WCSP

Location Otay Mesa, CA Date 3/1/12  
 Project / Client Allen Environmental - Candlelight Villas East  
QCB Survey # 3

1100 (147332 mi) - 1630 (147392 mi)  
 5.5 hrs + 60 mi

start: 1145, 62 F, 3-5 mph, 20% clouds (Sunny), 8 precip  
 1345, 65 F, 3-8 mph, 20% clouds (Sunny), 8 precip  
 end: 1600, 61 F, 5-10 mph, 20% clouds (Sunny), 8 precip

### Notes

- 20% cloud cover but survey area remained sunny during the duration of the survey, with cloud cover mainly to east and south toward Otay Mountain and Mexico.
- low butterfly activity. There were scattered showers last night and heavy rain a couple days ago which may be a factor. Most of the activity ~~and~~ of butterflies is in the eastern portion of site where there is more diversity in habitat, plants, flowers, and natives.

Location \_\_\_\_\_ Date 3/1/12  
 Project / Client (Cont.)

### Butterflies

Calif. ringlet ~~|||||~~ ||  
 Funereal duskywing |||  
 Sars orange tip |||  
 Behrs metalmark ~~||||~~  
 Southern blue ||||  
 West coast lady ||||  
 Painted lady ||

### Other wildlife

WCSP WEME  
 RTHA BEWR  
 NEMO CALT  
 HOFI CORA  
 CAQU CATH  
 WREN

### Flowering Plants

Brassica sp.	Zigadenus sp.
LOT SCO	ERI CON
RHU INT	SIS BEL
VIG LAO	MUR CAL
NIC GLA	AST TRI
DIC CAP	MEL IND
ERI FAS	SID SPA
AME MEN	BAC SAL
Allium sp.	
Catystegia sp.	
CHR COR	

Location Olaj Mesa, CA Date 3/5/12Project / Client Alden Environmental - Candlelight Villas East  
QCB #41100 (147439<sub>mi</sub>) - 1630 (147499<sub>mi</sub>)

5.5 hrs + 60 mi

Start: 1135, 76F, 3-5 mph, 60% clouds, 0 precip

1330, 74, 3-7 mph, 60% clouds, 0 precip

end: 1540, 73, 3-5 mph, 40% clouds, 0 precip.

Notes

-PLA ERE is flowering offsite in a few areas near the eastern boundary. Condition of flowering PLA ERE is 1-4 cm and in good condition, growing in small patches.

Location

Date

3/5/12

Project / Client

(cont.)

Butterflies

Common white II

Calif. ringlet III III III III I

Behrs metalmark III II

Funereal duskywing II

West Coast lady III

Painted lady III

Saras orange tip I

Other wildlife

CALT SOSP

WEME RWBL

HOFI ANHY

RTHA MODO

AMCR AMKE

Gull sp. JAPH

EUST BEWR

Flowering Plants

VIG LAC

LOT SCO

Brassica sp.

DIC CAP

NIC GLA

Allium sp.

Calystegia

RHU INT

CHR COP

Physiobathrys

Erodium

Melilotus

ERI CON

SIS BEL

LAS CAL

MIR CAL

OXalis

BAC SAL



Location Otay Mesa, CA Date 3/15/12  
 Project / Client Alden Environments/- Candlelight Villas East  
QCB#5

0945 (148001 mi) - 1515 (14806 mi)  
 5.5 hr + 60 mi

Start: 1130, 66 F, 1-3 mph, 10% clouds, & precip  
 1300, 68 F, 3-8 mph, 10% clouds, & precip  
 end: 1430, 67 F, 3-8 mph, 30% clouds (sunny) & precip

### Notes

- Offsite ~~off~~ PLA ERE still flowering and looking pretty nice. Height ranges from <1 cm to ~6 cm, w/ majority 2-3 cm. Some patches showing signs of drying.
- \*CAGN pair foraging approx 200 ft. Southeast of the southeastern corner of site. Flew off to northeast towards the next canyon east of project site.
- Cloud cover increased to 30% toward end of survey but site stayed sunny and conditions stayed w/in protocol.

Location \_\_\_\_\_ Date 3/15/12  
 Project / Client (cont.)

### Butterflies

West Coast lady IIII  
 Cabbage white III  
 Calif. ringlet ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ IIII  
 Funeral duskywing IIII  
 Painted lady ~~IIII~~ ~~IIII~~ I  
 Behrs metalmark ~~IIII~~ II

### Other wildlife

CAKI LEGO  
 WEME MOD  
 RWBZ BUSH  
 SOSP CRA  
 HOFI NOHA  
 ANHU CALT  
 WREN BEUR  
 \*CAGN CATH  
 NOMO AMKE  
 SAVS

### Flowering Plants

CHR COR	SAM NIG
Brassica sp.	CAL MAC
Erodium sp.	MEL IND
LOT SCO	AST TRI
VIG LAC	NIC GLA
ERI FAC	AMC MEN
DIC CAP	BAC SAL
ERI CON	HEL CUR
SIS BEL	
SID SPA	
RTH INT	
LAS CAL	

3/22/12

Candlelight QCB #6

Site 10<sup>LS</sup> 60°F, wind 0-3, scattered clouds

End: 1430 65°F, 3-8 mph, scattered clouds

Plants <sup>swiffling</sup>

Viglac\* FilCa\*

RhInt Branig

GenHel IncMen\*

Encal ArtCa1

AvFa MaLar

Bromspp. SimChi

AtSen DelFas\*

SalixSp.

LaMu

SalTra

MesCry\*

LotSco\*

erud

AnaArr

EriFas

MosMed

RumCri

Erc

StsBel

Animals

raven

m-lark

noDo

coyote

squirrel

B-flies

CabWhite 11

ringlot IIII IIII IIII

P-lady IIII

Behr's 1

WC-lady IIII

F-daisy 11

→ No Qcb observed

→ No host plants observed

**Appendix C**  
**LISTS OF BUTTERFLIES OBSERVED DURING EACH SURVEY**

	<b>Species</b>	<b>Number Observed</b>
<b>Survey 1</b> <b>February 16, 2012</b>	California ringlet ( <i>Coenonympha californica</i> )	18
	Common checkered skipper ( <i>Pontia protodice</i> )	1
	Painted lady ( <i>Vanessa cardui</i> )	4
	Pygmy blue ( <i>Brephidium exila</i> )	1
	Sara's orangetip ( <i>Anthocharis sara sara</i> )	2
	West coast lady ( <i>Vanessa annabella</i> )	2
<b>Survey 2</b> <b>February 21, 2012</b>	Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	4
	California ringlet ( <i>Coenonympha californica</i> )	32
	Funereal duskywing ( <i>Erynnis funeralis</i> )	3
	Painted lady ( <i>Vanessa cardui</i> )	7
	Pygmy blue ( <i>Brephidium exila</i> )	3
	Sara's orangetip ( <i>Anthocharis sara sara</i> )	1
	West coast lady ( <i>Vanessa annabella</i> )	19
<b>Survey 3</b> <b>March 1, 2012</b>	Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	10
	California ringlet ( <i>Coenonympha californica</i> )	17
	Funereal duskywing ( <i>Erynnis funeralis</i> )	3
	Painted lady ( <i>Vanessa cardui</i> )	2
	Sara's orangetip ( <i>Anthocharis sara sara</i> )	3
	Southern blue ( <i>Glaucopsyche lygdamus australis</i> )	4
	West coast lady ( <i>Vanessa annabella</i> )	4
<b>Survey 4</b> <b>March 5, 2012</b>	Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	7
	California ringlet ( <i>Coenonympha californica</i> )	26
	Common white ( <i>Pontia protodice</i> )	2
	Funereal duskywing ( <i>Erynnis funeralis</i> )	2
	Painted lady ( <i>Vanessa cardui</i> )	3
	Sara's orangetip ( <i>Anthocharis sara sara</i> )	1
	West coast lady ( <i>Vanessa annabella</i> )	4
<b>Survey 5</b> <b>March 15, 2012</b>	Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	7
	Cabbage white ( <i>Pieris rapae</i> )	3
	California ringlet ( <i>Coenonympha californica</i> )	28
	Funereal duskywing ( <i>Erynnis funeralis</i> )	4
	Painted lady ( <i>Vanessa cardui</i> )	11
	West coast lady ( <i>Vanessa annabella</i> )	4

**Appendix C (cont.)**  
**LISTS OF BUTTERFLIES OBSERVED DURING EACH SURVEY**

	<b>Species</b>	<b>Number Observed</b>
<b>Survey 6</b> <b>March 22, 2012</b>	Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	1
	Cabbage white ( <i>Pieris rapae</i> )	2
	California ringlet ( <i>Coenonympha californica</i> )	17
	Funereal duskywing ( <i>Erynnis funeralis</i> )	2
	Painted lady ( <i>Vanessa cardui</i> )	6
	West coast lady ( <i>Vanessa annabella</i> )	5



## **Appendix X**

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**Wet Season Fairy Shrimp Survey  
HELIX Environmental Planning, June 10, 2005**

2005 Annual Report  
U.S. Fish and Wildlife Service Protocol Level  
Wet Season Survey for  
San Diego and Riverside Fairy Shrimp  
(*Branchinecta sandiegonensis* and *Streptocephalus woottoni*)

Prepared for:

Western Pacific Housing  
Candlelight East and West Village Projects  
(HELIX Job No. WPH-15)

Prepared by:

HELIX Environmental Planning, Inc.  
8100 La Mesa Boulevard, Suite 150  
La Mesa, California 91941-6476  
(Endangered/Threatened Species Permit: TE 778195)

June 10, 2005

## INTRODUCTION

This report presents the findings of wet season fairy shrimp sampling conducted on the Candlelight East and West Village project sites, located approximately 1.1 miles east of Interstate 805 and 1.4 miles north of the U.S./Mexico border (Figures 1 and 2). The site is an undeveloped lot with an approximate area of 50 acres. The San Ysidro High School bounds the project site to the north along with undeveloped land, which also lies to the south, east, and west. The vast majority of the property has been used for agricultural purposes. As a result, the site has been repeatedly disced and tilled. Earthen berms have also been constructed along the northern and southern property boundaries and through the central portion of the site to restrict access and illegal dumping.

The purpose of the survey was to determine the presence/absence of the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottoni*). The San Diego fairy shrimp is found in San Diego and Orange counties. It resides in vernal pools and other ephemeral basins that are often located in patches of grassland and agriculture interspersed in Diegan coastal sage scrub and chaparral. The Riverside fairy shrimp can be found in Riverside, Orange, and San Diego counties as well as in northern Baja California, Mexico. It resides in vernal pools and other ephemeral basins.

The following report describes fairy shrimp surveys conducted for the 2005 wet season. Protocol level wet and dry season surveys were conducted in 2004.

## METHODS

HELIX Environmental Planning, Inc. (HELIX) biologist Greg Mason, Keli Balo, Dale Ritenour, (Permit TE 778195), assisted by HELIX biologist Martina Pernicano, conducted the wet season survey according to U.S. Fish and Wildlife Service (USFWS) protocol to determine the presence/absence of San Diego and Riverside fairy shrimp during the 2004/2005 rainy season. A total of eleven site visits were made, during which water-holding basins were sampled (Table 1). Survey visits to the site began on November 24, 2004. Subsequent visits were made on December 10 and 21, 2004; January 4 and 25, February 18, March 2, 18, and 31, April 14, and May 5, 2005.

Basins sampled in 2004 as part of the wet and dry season surveys were excluded from surveys this year. The increased amount of precipitation this year, along with continued vehicle use of the dirt roads, resulted in more areas of ponding and new depressions. New areas of ponding were the focus of the 2005 wet season fairy shrimp survey on the Candlelight site. These basins were given letter designations to distinguish them from the pools sampled in the previous season.

Samples were taken in water-holding basins using fine mesh aquarium nets. Fairy shrimp were identified in the field and immediately returned to their pool of origin. Care was taken to ensure that the nets were cleaned after each basin was sampled. Basin depth, area, water temperature, air temperature, habitat condition, and species present were noted and recorded on a USFWS Vernal Pool Data Sheet (Attachment A). Data sheets were not filled out when a basin was dry during a sampling visit. Representative photos of the site are included in last year's report.

**Table 1**  
**WET SEASON FAIRY SHRIMP SAMPLING RESULTS**

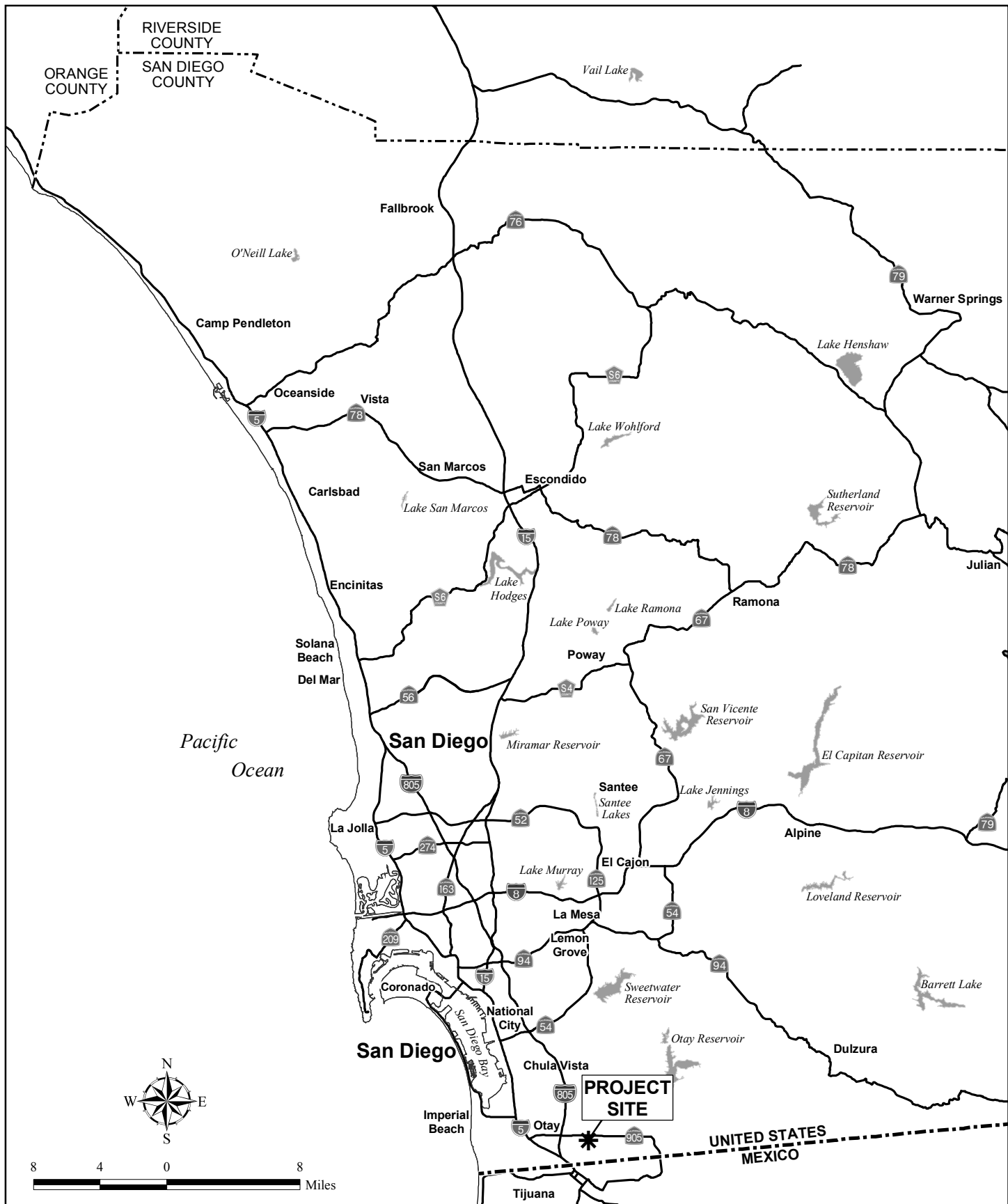
POOL	SPECIES OBSERVED										
	11/24/04	12/10/04	12/21/04	1/4/05	1/25/05	2/18/05	3/2/05	3/18/05	3/31/05	4/14/05	5/5/05
A	--	Dry	Dry	Dry	Dry	--	Dry	--	--	Dry	Dry
B	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
C	--	--	Dry	Dry	Dry	--	Dry	--	--	Dry	Dry
D	--	--	Dry	Dry	--	--	Dry	Dry	--	Dry	Dry
E	--	--	--	Dry	--	--	--	--	--	--	--
F	--	BRSA	Dry	Dry	--	--	--	--	Dry	Dry	Dry
G	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
H	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
I	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
J	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
K	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
L	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
M	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
N	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
O	--	Dry	Dry	Dry	Dry	--	Dry	--	Dry	Dry	Dry
P	--	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
R	Dry	--	Dry	Dry	Dry	--	Dry	Dry	Dry	Dry	Dry
S	Dry	--	Dry	Dry	Dry	--	--	Dry	Dry	Dry	Dry
T	Dry	--	Dry	Dry	Dry	--	--	--	Dry	Dry	Dry

BRSA=San Diego fairy shrimp (*Branchinecta sandiegonensis*)

## RESULTS

Nineteen basins (A through P, R, and S) were sampled during the 2005 wet season on the Candlelight site. Many of these basins are found along the artificial berms at the perimeter of the property (Figure 3). The remaining basins are found along the dirt roads that run throughout the site.

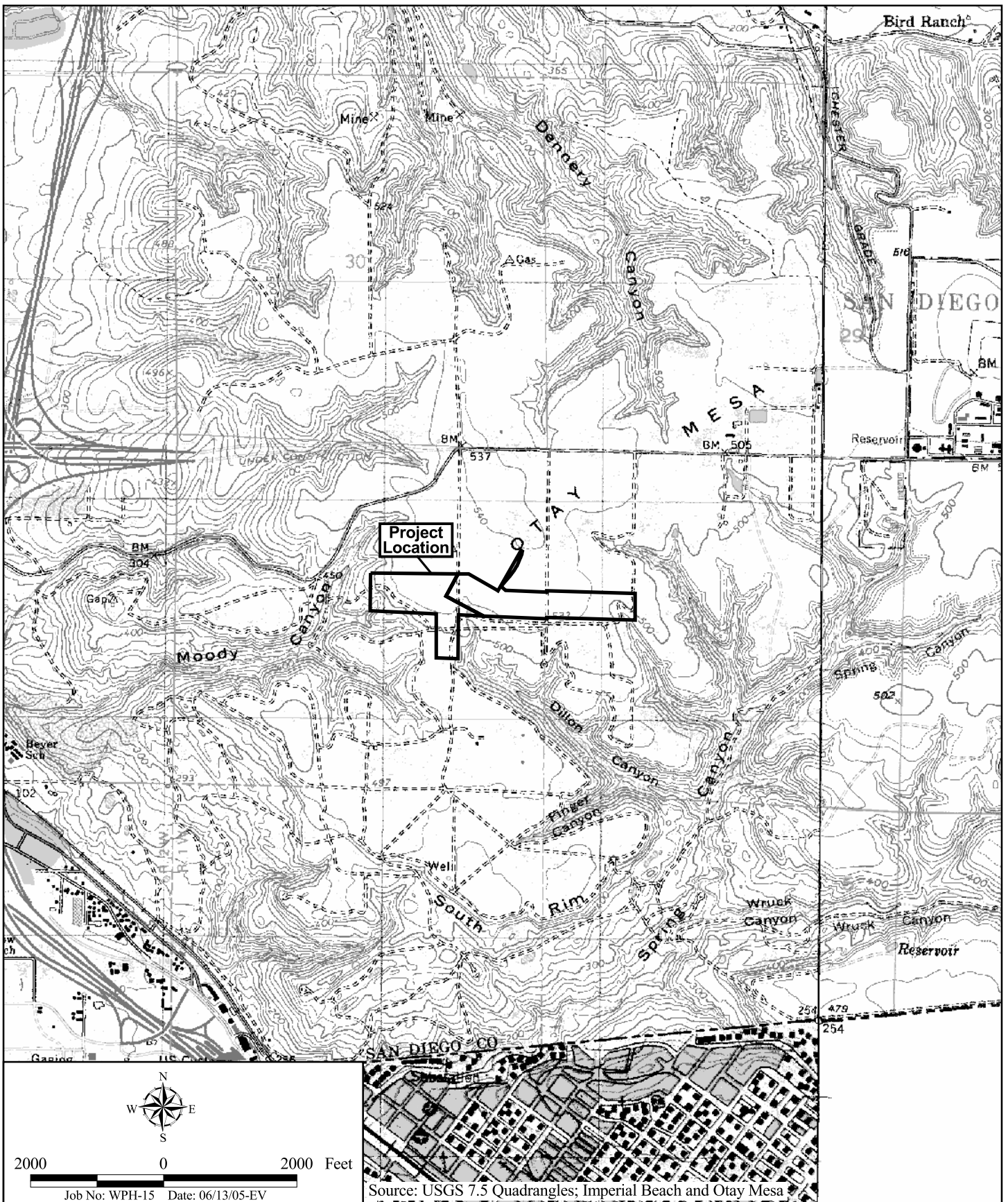
During the third visit (12/10/05), shrimp were found in basin F and were identified as San Diego fairy shrimp. No fairy shrimp were observed during any of the other visits, and no other fairy shrimp species were observed on site. Basin E continued to hold water through the last visit.



## Regional Location Map

CANDLELIGHT

Figure 1

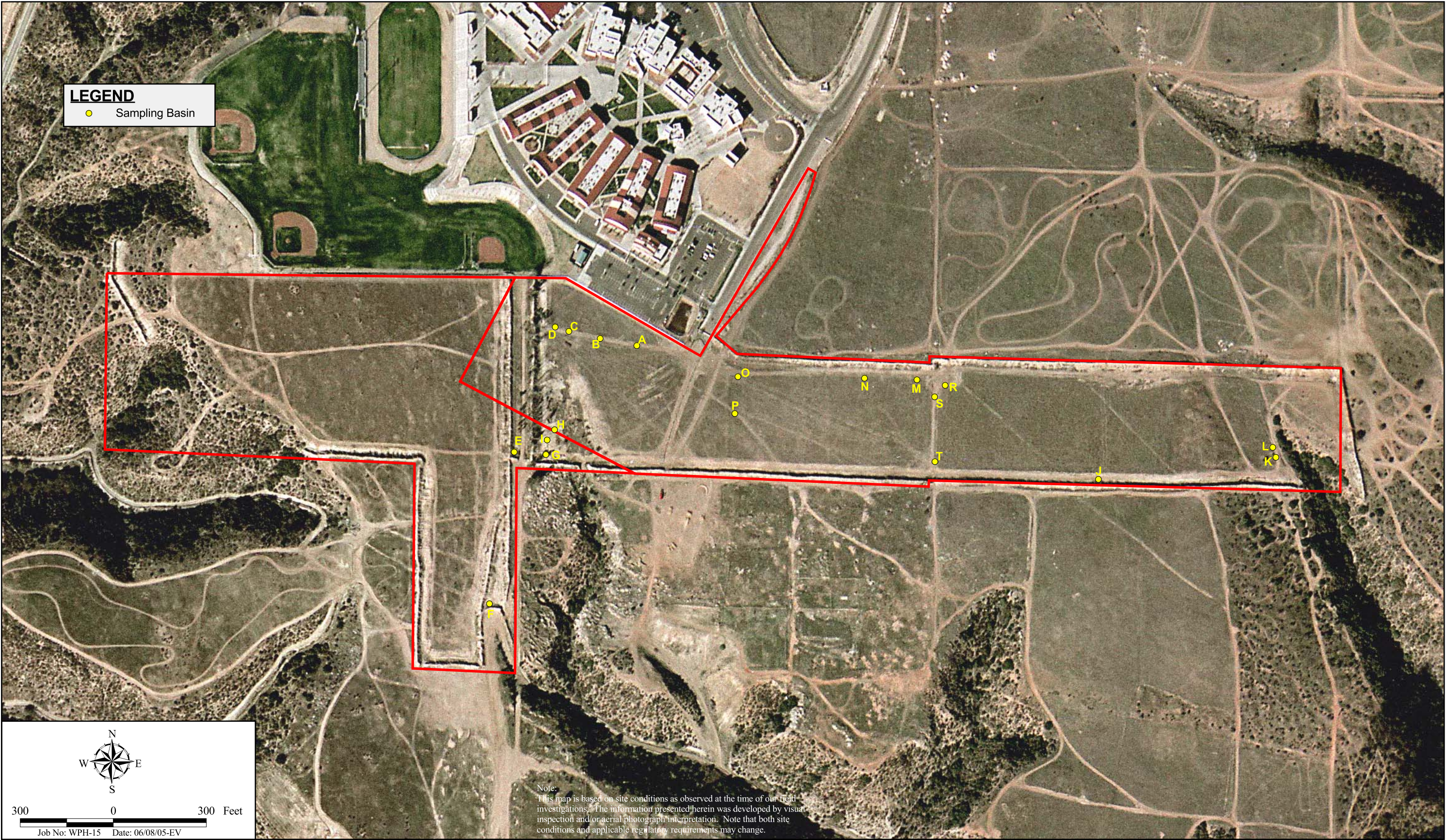


## Project Location Map

CANDLELIGHT

Figure 2





Spring 2005 Vernal Pool/Basin Location Map



**Attachment A**  
**USFWS VERNAL POOL DATA SHEETS**



SURVEY DATE:

11/24/04

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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Balo Permit #: 778195

Site/Project Name: Candlelight Pool #: A

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 5 cm estimated maximum:        cm  
Surface Area: at time of sampling: 1 m x 3 m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Lynxville Beach

Collector(s): Greg Mason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: B

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 2.5 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.5 m x 1.5 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: C

Township: 12 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 2.5 cm estimated maximum:        cm  
Surface Area: at time of sampling: 1 m x 1 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: D

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 1.3 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.5 m x 2.0 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: E

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 2.5 cm estimated maximum:        cm  
Surface Area: at time of sampling: 6.0 m x 10.0 m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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>
----------------	----------------------	----------------------------	---------------

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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: F

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: Surface Area:  
at time of sampling: 5.1 cm at time of sampling: 3 m x 6 m  
estimated maximum:        cm estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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.

<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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Zabo Permit #: 778195

Site/Project Name: Candlelight Pool #: 6

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 1.3 cm estimated maximum:        cm  
Surface Area: at time of sampling: 1 m x 1 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hixon, Keli Zale Permit #: 778195

Site/Project Name: Candlelight Pool #: 4

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum:          cm  
Surface Area: at time of sampling: 1 m x 1 m estimated maximum:          m x          m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):          ppm or mg/l Conductivity:          uMHO  
Dissolved NH<sub>4</sub>:          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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: 1

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 2.5 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.5 m x 0.5 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: 5

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 7.6 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.5 m x 9 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hasow, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: K

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 1.3 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.3 m x 0.3 m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: L

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 1.3 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.25 m x 3 m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Balo Permit #: 778195

Site/Project Name: Candlelight Pool #: 4

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 7.6 cm estimated maximum:        cm  
Surface Area: at time of sampling:        m x        m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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 X yes

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

Date: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: N

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 7.6 cm estimated maximum:        cm  
Surface Area: at time of sampling:        m x        m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: 0

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: 51 cm Surface Area: at time of sampling: 3 m x 3 m

estimated maximum: \_\_\_\_\_ cm estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO

Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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 X yes

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

Date: 11 / 24 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: P

Township: 18 S Range: 1 W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 9 °C Air: 10 °C

Pool Depth: at time of sampling: - cm Surface Area: at time of sampling: - m x - m

estimated maximum: - cm estimated maximum: - m x - 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): - ppm or mg/l Conductivity: - uMHO

Dissolved NH<sub>4</sub>: - 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: none  
(note reproductive status)

Notostracans: none  
(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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SURVEY DATE:  
12/10/04

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 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Ballo Permit #: 778195

Site/Project Name: Candlelight Pool #: A

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: - °C Air: 15 °C

Pool Depth: at time of sampling: - cm estimated maximum: - cm  
Surface Area: at time of sampling: - m x - m estimated maximum: - m x - m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total): - ppm or mg/l Conductivity: - uMHO  
Dissolved NH<sub>4</sub>: - 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: none  
(note reproductive status)

Notostracans: none  
(note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	<input checked="" type="radio"/> no
Conchostracans:	yes	<input checked="" type="radio"/> no
Copepods:	yes	<input checked="" type="radio"/> no
Ostracods	yes	<input checked="" type="radio"/> no
Fish	yes	<input checked="" type="radio"/> no
Frogs	yes	<input checked="" type="radio"/> no
Salamanders	yes	<input checked="" type="radio"/> no
Waterfowl	yes	<input checked="" type="radio"/> no
Other (specify)		

Insects: (adult or larvae)

Anisoptera:	yes	<input checked="" type="radio"/> no
Zygoptera:	yes	<input checked="" type="radio"/> no
Hydrophilidae:	yes	<input checked="" type="radio"/> no
Dytiscidae:	yes	<input checked="" type="radio"/> no
Corixidae:	yes	<input checked="" type="radio"/> no
Notonectidae:	yes	<input checked="" type="radio"/> no
Belostomatidae:	yes	<input checked="" type="radio"/> 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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: 13

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 5.1 cm Surface Area: at time of sampling: 0.3 m x 0.6 m

estimated maximum: \_\_\_\_ cm estimated maximum: \_\_\_\_ m x \_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_ uMHO

Dissolved NH<sub>4</sub>: \_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Balz Permit #: 778195

Site/Project Name: Candlelight Pool #: C

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 25 cm estimated maximum:        cm  
Surface Area: at time of sampling: 3 m x 0.3 m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: D

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 7.6 cm estimated maximum:        cm  
Surface Area: at time of sampling: 3 m x 1 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Ballo Permit #: 778195

Site/Project Name: Candlelight Pool #: E

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 30.5 cm Surface Area: at time of sampling: 4 m x 4 m

estimated maximum:        cm estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO

Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(note reproductive status)

(Optional) Species Observations:

Cladocerans: yes ☒ no  
Conchostracans: yes ☒ no  
Copepods: yes ☒ no  
Ostracods: yes ☒ no  
Fish: yes ☒ no  
Frogs: ☒ yes no -> tadpoles  
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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Ballo Permit #: 778195

Site/Project Name: Candlelight Pool #: F

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 2.5 cm Surface Area: at time of sampling: 5 m x 3 m

estimated maximum:          cm estimated maximum:          m x          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: open space

(Optional) Water Chemistry Data

Alkalinity (total):          ppm or mg/l Conductivity:          uMHO  
Dissolved NH<sub>4</sub>:          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: *Brachineola sandiegohensis* (100's)  
(note reproductive status)

Notostracans: none  
(note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	<input checked="" type="radio"/> no
Conchostracans:	yes	<input checked="" type="radio"/> no
Copepods:	yes	<input checked="" type="radio"/> no
Ostracods	yes	<input checked="" type="radio"/> no
Fish	yes	<input checked="" type="radio"/> no
Frogs	yes	<input checked="" type="radio"/> no
Salamanders	yes	<input checked="" type="radio"/> no
Waterfowl	yes	<input checked="" type="radio"/> no
Other (specify)		

Insects: (adult or larvae)

Anisoptera:	yes	<input checked="" type="radio"/> no
Zygoptera:	yes	<input checked="" type="radio"/> no
Hydrophilidae:	yes	<input checked="" type="radio"/> no
Dytiscidae:	yes	<input checked="" type="radio"/> no
Corixidae:	yes	<input checked="" type="radio"/> no
Notonectidae:	yes	<input checked="" type="radio"/> no
Belostomatidae:	yes	<input checked="" type="radio"/> 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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: 6

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 7.6 cm estimated maximum:        cm  
Surface Area: at time of sampling: 1 m x 1 m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: #

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.3 m x 0.3 m estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Salo Permit #: 778195

Site/Project Name: Candlelight Pool #: I

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: Surface Area:  
at time of sampling: 7.6 cm at time of sampling: 1 m x 2 m  
estimated maximum:        cm estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: 5

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 15.2 cm Surface Area: at time of sampling: 6 m x 0.25 m

estimated maximum:          cm estimated maximum:          m x          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: open space

(Optional) Water Chemistry Data

Alkalinity (total):          ppm or mg/l Conductivity:          uMHO

Dissolved NH<sub>4</sub>:          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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hasen, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: K

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum:          cm  
Surface Area: at time of sampling: 2 m x 1 m estimated maximum:          m x          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: open space

(Optional) Water Chemistry Data

Alkalinity (total):          ppm or mg/l Conductivity:          uMHO  
Dissolved NH<sub>4</sub>:          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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hasen, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: L

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum:          cm  
Surface Area: at time of sampling: 1 m x 1 m estimated maximum:          m x          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: open space

(Optional) Water Chemistry Data

Alkalinity (total):          ppm or mg/l Conductivity:          uMHO  
Dissolved NH<sub>4</sub>:          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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Ballo Permit #: 778195

Site/Project Name: Candelight Pool #: 11

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 12.7 cm Surface Area: at time of sampling: 10 m x 1 m

estimated maximum:        cm estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO

Dissolved NH<sub>4</sub>:        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: none ✓  
(note reproductive status)

Notostracans: none ✓  
(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) aquatic springtails

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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Ballo Permit #: 778195

Site/Project Name: Candlelight Pool #: N

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: Surface Area:  
at time of sampling: 5.1 cm at time of sampling: 15 m x 1.5 m  
estimated maximum: \_\_\_\_\_ cm estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Ballo Permit #: 778195

Site/Project Name: Candlelight Pool #: 7

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum:        cm  
Surface Area: at time of sampling: 10 m x 1.5 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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) aquatic springtails

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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Ballo Permit #: 778195

Site/Project Name: Candlelight Pool #: Q

Township: 18S Range: 1W Section: 21 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 2.5-2.6 cm estimated maximum: \_\_\_\_ cm  
Surface Area: at time of sampling: 1 m x 1 m estimated maximum: \_\_\_\_ m x \_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_ 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: 3 pools

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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Balz Permit #: 778195

Site/Project Name: Candlelight Pool #: R

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 2.5 cm estimated maximum:        cm  
Surface Area: at time of sampling: 1 m x 0.5 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: none  
(note reproductive status)

Notostracans: none  
(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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: S

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling:          cm  
estimated maximum:          cm  
Surface Area: at time of sampling:          m x          m  
estimated maximum:          m x          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: open space

(Optional) Water Chemistry Data

Alkalinity (total):          ppm or mg/l Conductivity:          uMHO  
Dissolved NH<sub>4</sub>:          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: *none*  
(note reproductive status)

Notostracans: *none*  
(note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	<input checked="" type="radio"/> no
Conchostracans:	yes	<input checked="" type="radio"/> no
Copepods:	yes	<input checked="" type="radio"/> no
Ostracods	yes	<input checked="" type="radio"/> no
Fish	yes	<input checked="" type="radio"/> no
Frogs	yes	<input checked="" type="radio"/> no
Salamanders	yes	<input checked="" type="radio"/> no
Waterfowl	yes	<input checked="" type="radio"/> no
Other (specify)		

Insects: (adult or larvae)

Anisoptera:	yes	<input checked="" type="radio"/> no
Zygoptera:	yes	<input checked="" type="radio"/> no
Hydrophilidae:	yes	<input checked="" type="radio"/> no
Dytiscidae:	yes	<input checked="" type="radio"/> no
Corixidae:	yes	<input checked="" type="radio"/> no
Notonectidae:	yes	<input checked="" type="radio"/> no
Belostomatidae:	yes	<input checked="" type="radio"/> no
Other (specify)	<i>aquatic springtail</i>	

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: 12 / 10 / 04 Time: 7:00 am County: San Diego Quad: Imperial Beach

Collector(s): Greg Hason, Keli Balu Permit #: 778195

Site/Project Name: Candlelight Pool #: 1

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 10 °C Air: 15 °C

Pool Depth: at time of sampling: 5.1 cm Surface Area: at time of sampling: 1 m x 1 m

estimated maximum: \_\_\_\_ cm estimated maximum: \_\_\_\_ m x \_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_ uMHO

Dissolved NH<sub>4</sub>: \_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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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SURVEY DATE:  
12/21/04

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 / 21 / 04 Time: 7:00am County: San Diego Quad: Imperial Beach

Collector(s): Greg Mason, Juli Balo, Dale Aiteson Permit #: 778195

Site/Project Name: Candlelight Pool #: E

Township: 12 S Range: 10 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: - °C Air: 6 °C

Pool Depth: at time of sampling: 12.7 cm estimated maximum: \_\_\_\_ cm  
Surface Area: at time of sampling: 4 m x 5 m estimated maximum: \_\_\_\_ m x \_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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) mosquito larvae

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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SURVEY DATE:

1/4/05

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 / 04 / 05 Time: — County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo assisted by Martina Pernicaro Permit #: 778195

Site/Project Name: Candlelight Pool #: —

Township: 12S Range: 1W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: — °C Air: — °C

Pool Depth: at time of sampling: — cm estimated maximum: — cm  
Surface Area: at time of sampling: — m x — m estimated maximum: — m x — 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): — ppm or mg/l Conductivity: — uMHO  
Dissolved NH<sub>4</sub>: — 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: all pools dry

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: none  
(note reproductive status)

Notostracans: none  
(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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SURVEY DATE:

1/25/05

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 / 25 / 05 Time: 9:15 am County: San Diego Quad: Imperial Beach

Collector(s): Eli Balgo Permit #: 778195

Site/Project Name: Candlelight Pool #: D

Township: 18S Range: 1W Section: 31 32°33' lat. 117°01' long.

Temperature: Water: 16 °C Air: 16 °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum: \_\_\_\_\_ cm  
Surface Area: at time of sampling: 0.15 m x 1.2 m estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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 / 25 / 05 Time: 9:15 am County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo Permit #: 77 81 95

Site/Project Name: Candlelight Pool #: E

Township: 18 S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 16 °C Air: 16 °C

Pool Depth: at time of sampling: 36 cm estimated maximum:        cm  
Surface Area: at time of sampling: 1.8 m x 2.4 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: *none*  
(note reproductive status)

Notostracans: *none*  
(note reproductive status)

(Optional) Species Observations:

Cladocerans: yes ☒ no  
Conchostracans: yes ☒ no  
Copepods: yes ☒ no  
Ostracods: ☒ yes ☒ no  
Fish: yes no  
Frogs: ☒ yes no *→ tadpoles*  
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 / 25 / 05 Time: 9:15 am County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo Permit #: 778195

Site/Project Name: Candlelight Pool #: F

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 16 °C Air: 16 °C

Pool Depth: at time of sampling: 2.5 cm estimated maximum:        cm  
Surface Area: at time of sampling: 0.6 m x 0.6 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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	<u>yes</u>	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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SURVEY DATE:  
2/18/05



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 / 18 / 05 Time:        County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo Permit #: 77-8195

Site/Project Name: Candlelight Pool #:       

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water:        °C Air:        °C

Pool Depth: Surface Area:  
at time of sampling:        cm at time of sampling:        m x        m  
estimated maximum:        cm estimated maximum:        m x        m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: all ponds holding water

Ponding ✓ - basins dry on previous survey  
A, B, C, G, H, I, J, K, L, M, N, O, P  
R, S, T

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: none  
(note reproductive status)

Notostracans: none  
(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: 02 / 12 / 05 Time:        County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo Permit #: 778195

Site/Project Name: Candlelight Pool #: #10

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 19 °C Air:        °C

Pool Depth: at time of sampling: 4 cm estimated maximum:        cm  
Surface Area: at time of sampling: 15 m x 1 m estimated maximum:        m x        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: open space

(Optional) Water Chemistry Data

Alkalinity (total):        ppm or mg/l Conductivity:        uMHO  
Dissolved NH<sub>4</sub>:        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: all ponds holding water

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: none  
(note reproductive status)

Notostracans: none  
(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: 02 / 18 / 05 Time: — County: San Diego Quad: Inperial Beach

Collector(s): Keli Balo Permit #: 77-8195

Site/Project Name: Candlelight Pool #: E

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 18 °C Air: — °C

Pool Depth: at time of sampling: 16 cm estimated maximum: — cm  
Surface Area: at time of sampling: 2 m x 3 m estimated maximum: — m x — m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total): — ppm or mg/l Conductivity: — uMHO  
Dissolved NH<sub>4</sub>: — 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: all ponds holding water

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: none ✓  
(note reproductive status)

Notostracans: none ✓  
(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: 02 / 12 / 05 Time: \_\_\_\_\_ County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo Permit #: 778195

Site/Project Name: Candlelight Pool #: F

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 19 °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 4 cm Surface Area: at time of sampling: 3 m x 5 m

estimated maximum: \_\_\_\_\_ cm estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ m

Habitat Condition: (circle where appropriate)

- undisturbed ☒ disturbed ☒ tire tracks ☐ garbage ☐ discing/plowing  
- ☒ ungrazed ☐ grazed: cattle light horses moderate sheep heavy other \_\_\_\_\_

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: all ponds holding water

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: none ✓  
(note reproductive status)

Notostracans: none ✓  
(note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	<input checked="" type="radio"/> no
Conchostracans:	yes	<input checked="" type="radio"/> no
Copepods:	yes	<input checked="" type="radio"/> no
Ostracods	yes	<input checked="" type="radio"/> no
Fish	yes	<input checked="" type="radio"/> no
Frogs	yes	<input checked="" type="radio"/> no
Salamanders	yes	<input checked="" type="radio"/> no
Waterfowl	yes	<input checked="" type="radio"/> no
Other (specify)		

Insects: (adult or larvae)

Anisoptera:	yes	<input checked="" type="radio"/> no
Zygoptera:	yes	<input checked="" type="radio"/> no
Hydrophilidae:	yes	<input checked="" type="radio"/> no
Dytiscidae:	yes	<input checked="" type="radio"/> no
Corixidae:	yes	<input checked="" type="radio"/> no
Notonectidae:	yes	<input checked="" type="radio"/> no
Belostomatidae:	yes	<input checked="" type="radio"/> 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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SURVEY DATE:

3/2/05

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 X yes

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

Date: 03 / 02 / 05 Time: 12:20 pm County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo, Dale Ritenour Permit #: 778195

Site/Project Name: Candlelight Pool #: E, F, S, T

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: 22 °C Air: 22 °C

Pool Depth: Surface Area:  
at time of sampling: \_\_\_\_ cm at time of sampling: \_\_\_\_ m x \_\_\_\_ m  
estimated maximum: \_\_\_\_ cm estimated maximum: \_\_\_\_ m x \_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_ 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: listed pools hold water  
no shrimp  
no pool dimensions taken

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: none  
(note reproductive status)

Notostracans: none  
(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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SURVEY DATE:

3/18/05

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 / 18 / 05 Time: 10:50am County: San Diego Quad: Imperial Beach

Collector(s): Keli Galo Permit #: 77 8195

Site/Project Name: Candlight Pool #: A

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 10.2 cm estimated maximum: \_\_\_\_\_ cm  
Surface Area: at time of sampling: 5 m x 3 m estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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 / 18 / 05 Time: 10:50am County: San Diego Quad: Imperial Beach

Collector(s): Keli Galo Permit #: 77 8195

Site/Project Name: Candlelight Pool #: C

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum: \_\_\_\_\_ cm  
Surface Area: at time of sampling: 5 m x 1 m estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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 / 18 / 05 Time: 10:50am County: San Diego Quad: Imperial Beach

Collector(s): Keli Ballo Permit #: 77 8195

Site/Project Name: Candlight Pool #: E

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 30.5 cm Surface Area: at time of sampling: 8 m x 13 m

estimated maximum: \_\_\_\_\_ cm estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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 / 18 / 05 Time: 10:50am County: San Diego Quad: Imperial Beach

Collector(s): Keli Galo Permit #: 77 8195

Site/Project Name: Candlelight Pool #: F

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: — °C Air: — °C

Pool Depth: at time of sampling: — cm estimated maximum: — cm  
Surface Area: at time of sampling: — m x — m estimated maximum: — m x — 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): — ppm or mg/l Conductivity: — uMHO  
Dissolved NH<sub>4</sub>: — 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: none  
(note reproductive status)

Notostracans: none  
(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 / 18 / 05 Time: 10:50 am County: San Diego Quad: Imperial Beach

Collector(s): Kelli Baid Permit #: 77 8195

Site/Project Name: Candlelight Pool #: 0

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: Surface Area:  
at time of sampling: 2.5 cm at time of sampling: 0.5 m x 1.2 m  
estimated maximum: \_\_\_\_\_ cm estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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 / 18 / 05 Time: 10:50am County: San Diego Quad: Imperial Beach

Collector(s): Keli Ballo Permit #: 778195

Site/Project Name: Candlight Pool #: 1

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 10.2 cm estimated maximum: \_\_\_\_\_ cm  
Surface Area: at time of sampling: 4 m x 4 m estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: 40%  
(note reproductive status)

Notostracans: 40%  
(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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SURVEY DATE:

3/31/05

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 / 31 / 05 Time: 8:30am County: San Diego Quad: Imperial Beach

Collector(s): Kali Balo Permit #: 77 #195

Site/Project Name: Candlelight Pool #: A

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: Surface Area:  
at time of sampling: 5.1 cm at time of sampling: 5 m x 4 m  
estimated maximum: \_\_\_\_\_ cm estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	<input checked="" type="radio"/> no
Conchostracans:	yes	<input checked="" type="radio"/> no
Copepods:	yes	<input checked="" type="radio"/> no
Ostracods	yes	<input checked="" type="radio"/> no
Fish	yes	<input checked="" type="radio"/> no
Frogs	yes	<input checked="" type="radio"/> no
Salamanders	yes	<input checked="" type="radio"/> no
Waterfowl	yes	<input checked="" type="radio"/> no
Other (specify)		

Insects: (adult or larvae)

Anisoptera:	yes	<input checked="" type="radio"/> no
Zygoptera:	yes	<input checked="" type="radio"/> no
Hydrophilidae:	yes	<input checked="" type="radio"/> no
Dytiscidae:	yes	<input checked="" type="radio"/> no
Corixidae:	yes	<input checked="" type="radio"/> no
Notonectidae:	yes	<input checked="" type="radio"/> no
Belostomatidae:	yes	<input checked="" type="radio"/> no
Other (specify)	mosquito larvae	

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.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 / 31 / 05 Time: 8:30am County: San Diego Quad: Imperial Beach

Collector(s): Kali Ballo Permit #: 778195

Site/Project Name: Candlelight Pool #: C

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 5.1 cm estimated maximum: \_\_\_\_\_ cm  
Surface Area: at time of sampling: 5 m x 1 m estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
 (note reproductive status)

Notostracans: none  
 (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) mosquito larvae

**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 / 31 / 05 Time: 8:30am County: San Diego Quad: Imperial Beach

Collector(s): Kali Balo Permit #: 77 #195

Site/Project Name: Candlelight Pool #: D

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 25 cm estimated maximum: \_\_\_\_\_ cm  
Surface Area: at time of sampling: \_\_\_\_\_ m x \_\_\_\_\_ m estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ m

Habitat Condition: (circle where appropriate)

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

- land use of habitat: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(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) mosquito larvae

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 / 31 / 05 Time: 8:30am County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo Permit #: 77 81 95

Site/Project Name: Candlight Pool #: E

Township: 18 S Range: 1 W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: \_\_\_\_\_ °C Air: \_\_\_\_\_ °C

Pool Depth: at time of sampling: 30.5 cm Surface Area: at time of sampling: 6 m x 10 m

estimated maximum: \_\_\_\_\_ cm estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l Conductivity: \_\_\_\_\_ uMHO  
Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
 (note reproductive status)

Notostracans: none  
 (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) mosquito larvae

**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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SURVEY DATE:

4/14/05

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 / 14 / 05 Time: — County: San Diego Quad: Imperial Beach

Collector(s): Keli Salo Permit #: 778195

Site/Project Name: Caswellight Pool #: E

Township: 18S Range: 1W Section: 31 32° 33' lat. 117° 01' long.

Temperature: Water: — °C Air: — °C

Pool Depth: at time of sampling: 15.2 cm estimated maximum: — cm  
Surface Area: at time of sampling: 6 m x 3 m estimated maximum: — m x — 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: open space

(Optional) Water Chemistry Data

Alkalinity (total): — ppm or mg/l Conductivity: — uMHO  
Dissolved NH<sub>4</sub>: — 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: none  
(note reproductive status)

Notostracans: none  
(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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SURVEY DATE:

5/5/05

**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   X   yes

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

Date: 05 / 05 / 05 Time: 9:00am County: San Diego Quad: Imperial Beach

Collector(s): Keli Balo Permit #: 778195

Site/Project Name: Candlelight Pool #: E

Township: 18S Range: 10E Section: 31 32°33' lat. 117°01' long.

Temperature:                      Water: \_\_\_\_\_ °C                      Air: \_\_\_\_\_ °C

Pool Depth: \_\_\_\_\_ Surface Area: \_\_\_\_\_  
at time of sampling: 17.8 cm at time of sampling: 4 m x 3 m

estimated maximum: \_\_\_\_\_ cm      estimated maximum: \_\_\_\_\_ m x \_\_\_\_\_ 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:

(Optional) Water Chemistry Data

Alkalinity (total): \_\_\_\_\_ ppm or mg/l      Conductivity: \_\_\_\_\_ uMHO

Dissolved NH<sub>4</sub>: \_\_\_\_\_ 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: none  
(note reproductive status)

Notostracans: none  
(note reproductive status)

(Optional) Species Observations:

Cladocerans:	yes	<input checked="" type="radio"/> no
Conchostracans:	yes	<input checked="" type="radio"/> no
Copepods:	yes	<input checked="" type="radio"/> no
Ostracods	yes	<input checked="" type="radio"/> no
Fish	yes	<input checked="" type="radio"/> no
Frogs	yes	<input checked="" type="radio"/> no
Salamanders	yes	<input checked="" type="radio"/> no
Waterfowl	yes	<input checked="" type="radio"/> no
Other (specify)		

Insects: (adult or larvae)

Anisoptera:	yes	<input checked="" type="radio"/> no
Zygoptera:	yes	<input checked="" type="radio"/> no
Hydrophilidae:	yes	<input checked="" type="radio"/> no
Dytiscidae:	yes	<input checked="" type="radio"/> no
Corixidae:	yes	<input checked="" type="radio"/> no
Notonectidae:	yes	<input checked="" type="radio"/> no
Belostomatidae:	yes	<input checked="" type="radio"/> 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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## **Appendix Y**

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**Burrowing Owl Survey  
Alden Environmental, May 2012**



May 8, 2012

Mr. Walter T. Schwerin, P.E.  
Schwerin & Associates  
814 Morena Blvd., Ste. 101  
San Diego, CA 92110

**Subject: Burrowing Owl Survey for the Candlelight Project**

Dear Mr. Schwerin:

This letter report presents the results of a focused burrowing owl (*Athene cunicularia*) survey conducted for the Candlelight project located on a 44.9-acre parcel in the City of San Diego's Otay Mesa community (Figures 1 and 2). The project site occupies a portion of Section 31 within Township 18 South, Range 1 West of the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle map.

**Physical Description and Land Use**

The project site consists of a mesa top previously used for agriculture. The site is currently undeveloped and supports native and non-native habitats. The vast majority of the property has been actively farmed since at least 1955; as a result, the site has been repeatedly disced and tilled. Earthen berms were constructed along the site property boundaries between 1995 and 1997 to restrict access and illegal dumping. Most of the site supports non-native grassland habitat, with areas of maritime succulent scrub habitat on the far western and eastern ends of the site, outside of the proposed project development footprint.

**Methods**

Breeding season burrowing owl surveys were conducted by Alden biologist Greg Mason in accordance with the City of San Diego's Multiple Species Conservation Program (MSCP) requirements. A total of four survey visits were conducted (Table 1) under suitable conditions. During each visit the entire site was surveyed on foot to ensure 100% visual coverage of the ground surface and identify burrowing owls that may be present on, or adjacent to the site. The first survey visit included the focused burrow survey to identify and map potentially suitable owl habitat components. During this, and subsequent survey visits suitable habitat components including ground squirrel (*Spermophilus beecheyi*) burrows, berms, and debris piles were surveyed. Land adjacent to the site also was surveyed. Specific signs of owl presence were also searched for including owls, feathers, castings, and owl droppings. Animal species observed during the survey were recorded (Attachment A).

<b>Table 1</b>			
<b>Burrowing Owl Survey Dates</b>			
<b>Survey Number</b>	<b>Date</b>	<b>Time Start/Stop</b>	<b>Conditions</b>
1	3/11/12	1830/2010	Clear sky, 74° F, Wind 0-3 mph
2	3/12/12	1815/2010	Partly cloudy, 71°F, Wind 0-3 mph
3	3/13/12	1825/2000	Partly cloudy, 65° F, Wind 3-5 mph
4	4/15/12	1830/2015	Scattered clouds, 68°F, Wind 3-7 mph

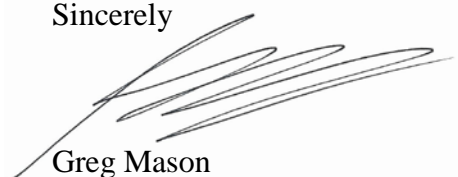
In addition to these focused surveys, burrowing owls were surveyed for opportunistically during numerous other focused spring (2012) surveys on the site including rare plant and Quino checkerspot butterfly (*Euphydryas editha editha*) surveys.

## Results

The site does support ground squirrels and suitable foraging habitat; however, no evidence of burrowing owl occupation was found on or adjacent to the site during the focused survey visits. Based on the results of the focused survey, along with the lack of owl observations during other focused surveys, the site does not currently support burrowing owls.

Please contact me if you have any questions regarding this letter report.

Sincerely



Greg Mason  
Senior Biologist

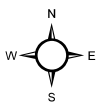
Enclosures: Figure 1	Project Location
Figure 2	Survey Map
Figures 3a & 3b	Vegetation and Sensitive Resources
Attachment A	Animal Species Observed



## Legend



Project Boundary



2,400 1,200 0 2,400  
Feet

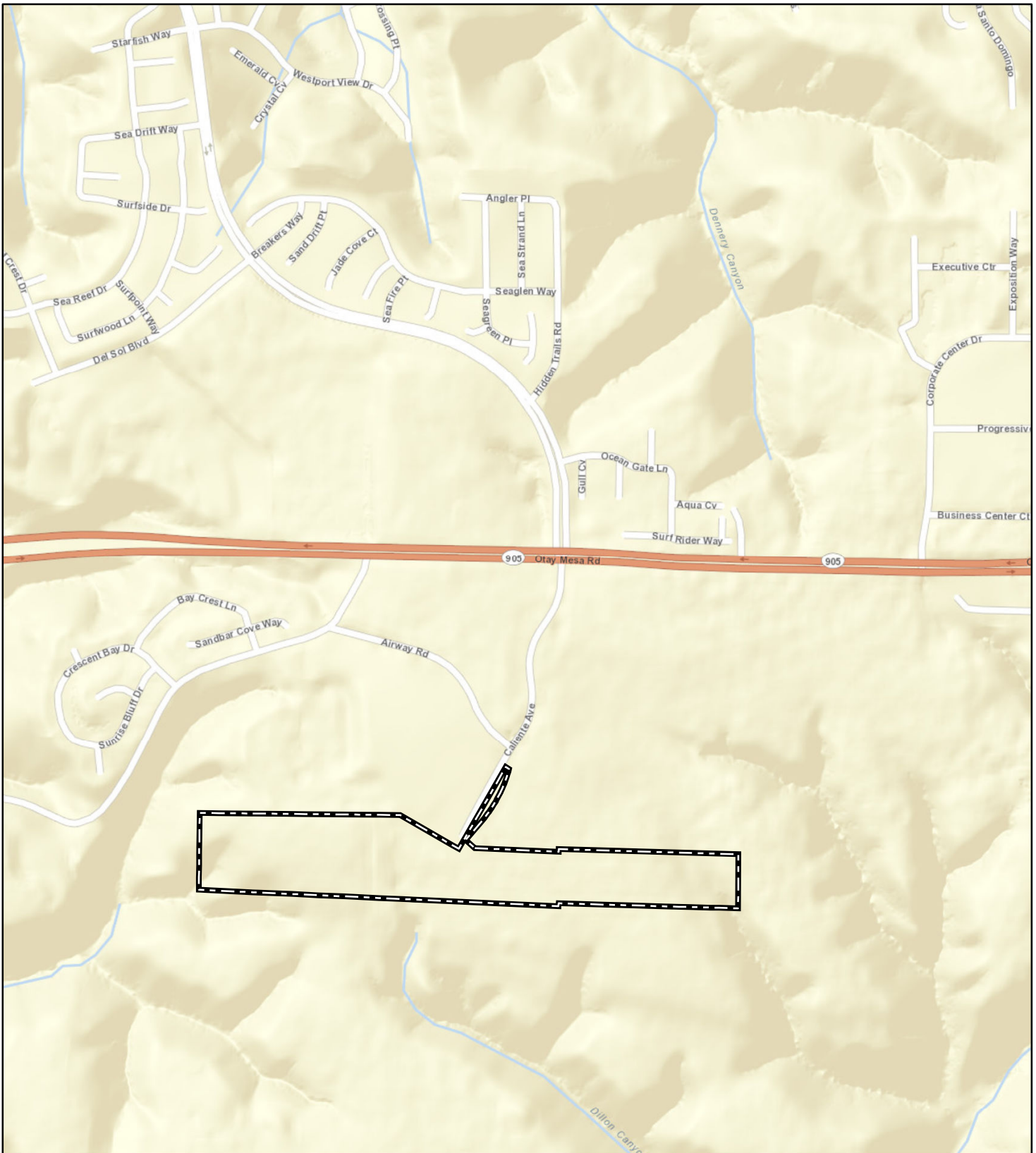
**ALDEN**  
ENVIRONMENTAL, INC

**Figure 1**

**Regional Vicinity**

CANDLELIGHT  
BIOLOGICAL TECHNICAL REPORT

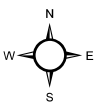




## Legend



Project Boundary



960 480 0 960  
Feet

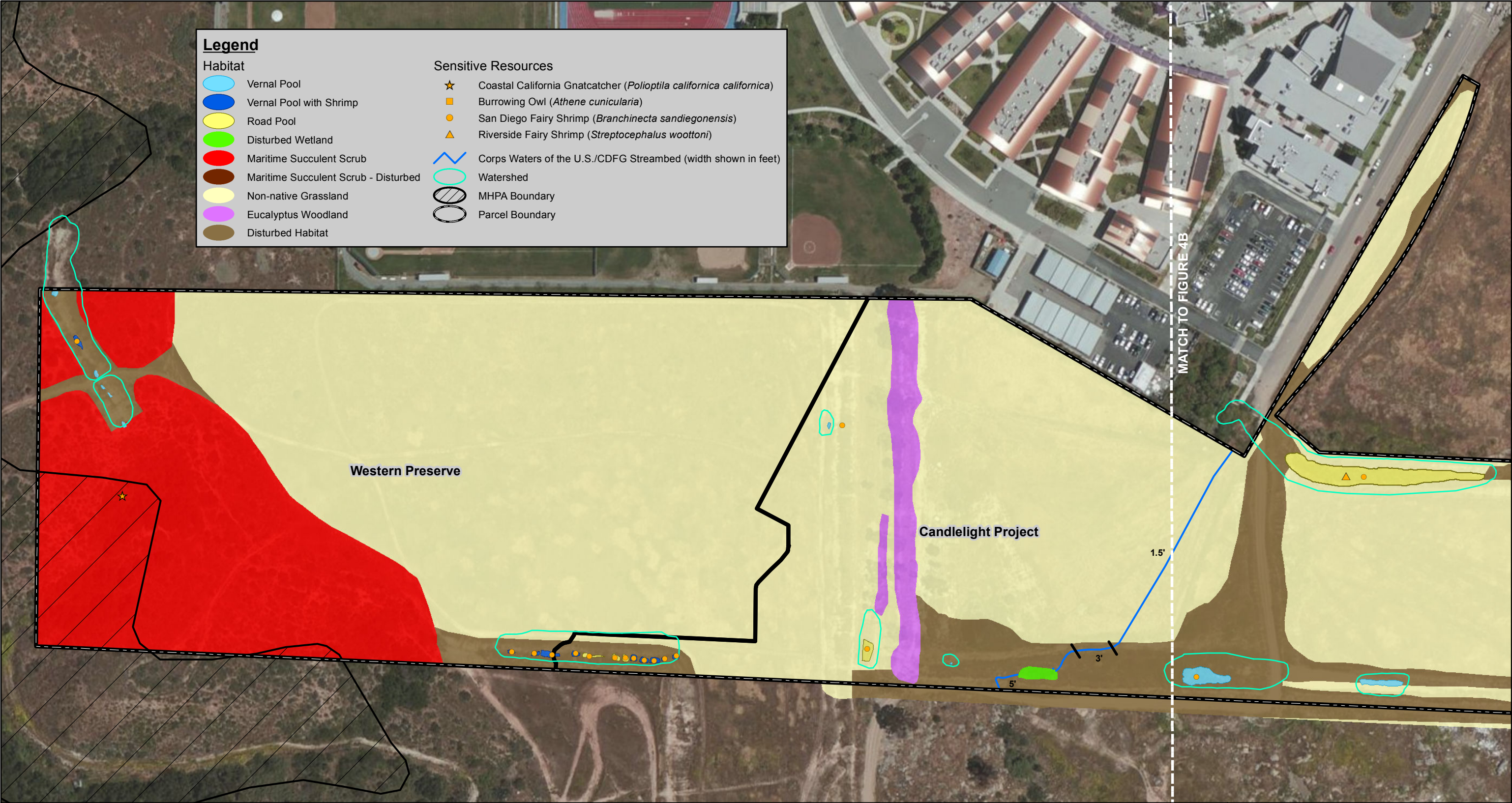
 **ALDEN**  
ENVIRONMENTAL, INC

**Figure 2**

## Project Location

CANDLELIGHT  
BIOLOGICAL TECHNICAL REPORT





**Figure 3a**

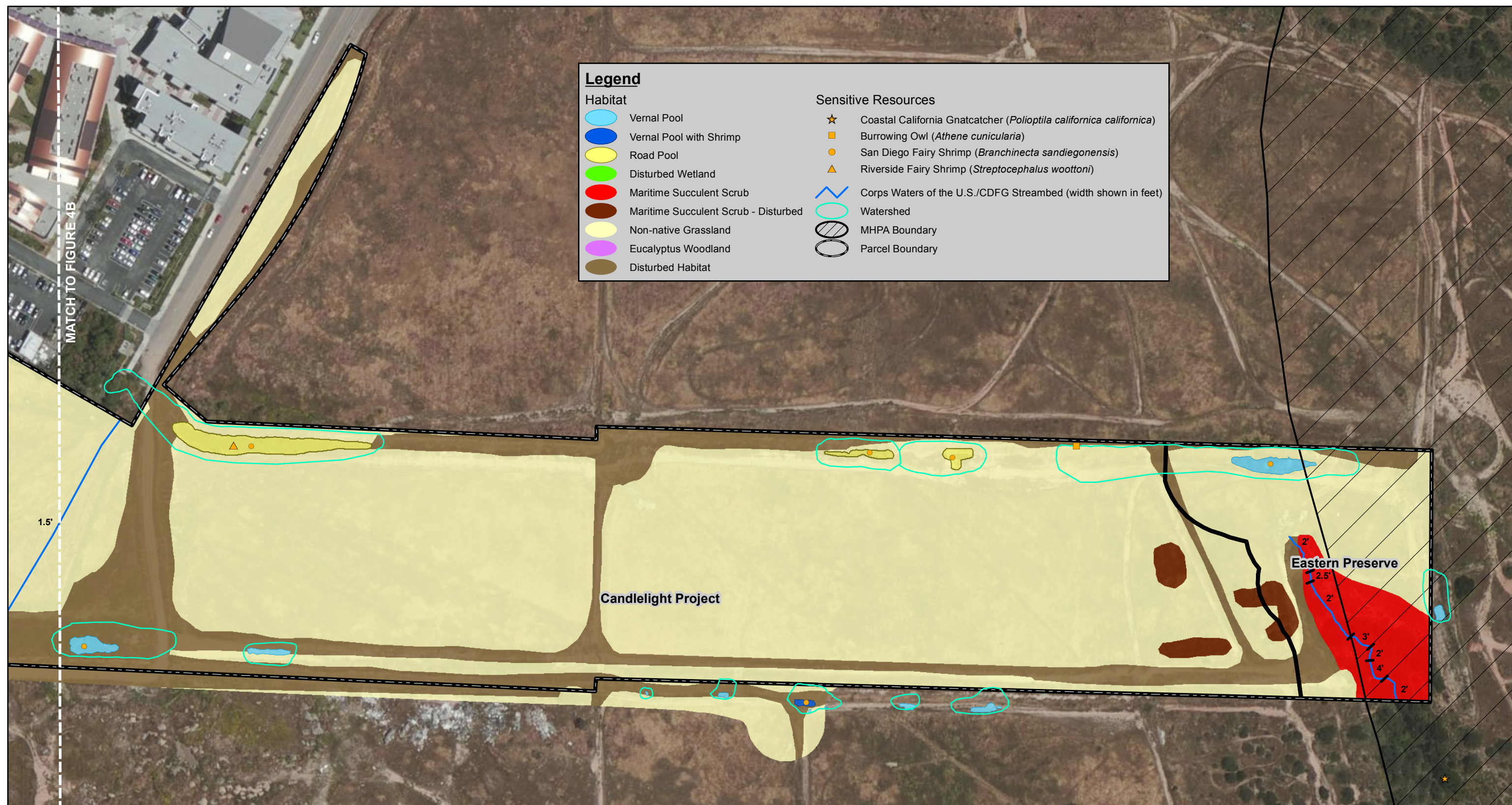
**Vegetation and Sensitive Resources**

CANDLELIGHT  
BIOLOGICAL TECHNICAL REPORT

150 75 0 150 Feet

**ALDEN**  
ENVIRONMENTAL, INC





**Figure 3b**

**Vegetation and  
Sensitive Resources**

CANDLELIGHT  
BIOLOGICAL TECHNICAL REPORT



## Attachment A

### Animals Observed

Scientific Name	Common Name
<b>Birds</b>	
<i>Carpodacus mexicanus</i>	House finch
<i>Charadrius vociferus</i>	Killdeer
<i>Calypte anna</i>	Anna's hummingbird
<i>Corvus corax</i>	Common raven
<i>Sturnella neglecta</i>	Western meadowlark
<i>Pipilo maculatus</i>	Spotted towhee
<i>Zenaida macroura</i>	Mourning dove
<b>Mammals</b>	
<i>Canis latrans</i> (scat)	Coyote
<i>Lepus californicus bennettii</i>	Black-tailed jackrabbit
<i>Spermophilus beecheyi</i>	California ground squirrel
<i>Sylvilagus audubonii</i>	Desert cottontail
<b>Reptiles</b>	
<i>Sceloporus occidentali</i>	Western fence lizard