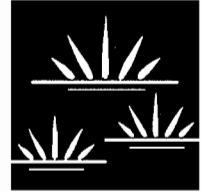


# LETTER OF TRANSMITTAL

GLENN LUKOS ASSOCIATES

Regulatory Services



**PROJECT NUMBER:** 0472-08-BANN

**TO:** Erin McCarthy (U.S. Fish and Wildlife Service)

Cc: Christine Medak (U.S. Fish and Wildlife Service)

**ADDRESS:** 6010 Hidden Valley Road  
Suite 101  
Carlsbad, California 92011

**FROM:** David Moskovitz

**DATE:** July 26, 2011

**SUBJECT:** Newport Banning Ranch – Report of 2010/2011 Wet Season Fairy Shrimp Surveys

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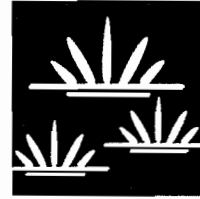
Enclosed is the report of wet season fairy shrimp surveys for the Newport Banning Ranch property, conducted for the 2010/2011 wet season.

If you have any questions regarding the report, please call me at (949) 837-0404, ext. 42.

s:0472-8o.lot.doc

# GLENN LUKOS ASSOCIATES

Regulatory Services



July 26, 2011

Erin McCarthy  
U.S. Fish and Wildlife Service  
6010 Hidden Valley Road  
Carlsbad, California 92009

SUBJECT: Report of a Wet-Season Survey for Listed Branchiopods Conducted for Oil Field Features at the 401-acre Newport Banning Ranch Property, City of Newport Beach and Unincorporated Orange County, Orange County, California

Dear Ms. McCarthy:

Glenn Lukos Associates, Inc. (GLA) conducted wet-season surveys for listed branchiopods (fairy shrimp) within 24 depressions, including oil field sumps and remediation areas, in which water collected during the rainy season at the Newport Banning Ranch property ("Project Site"), located in the City of Newport Beach and Unincorporated Orange County, Orange County, California.

GLA biologist David Moskovitz (TE-084606-1) conducted the surveys. The non-listed versatile fairy shrimp (*Branchinecta lindahli*) was detected in 11 of the 24 features surveyed during the 2010/2011 wet season, and listed San Diego fairy shrimp (*Branchinecta sandiegonensis*) was detected in five of the features surveyed during the 2010/2011 wet season. It is important to note that none of the features that support the versatile fairy shrimp are naturally occurring vernal pools or seasonal ponds; rather the features include asphalt parking areas, gravel-covered equipment storage areas, abandoned oil well pads, depressions created by removal of contaminated or remediated soils, and even low points in paved and unpaved roads.

The surveys were initiated in October 22, 2010 and continued through April 2011 with the last significant rain event occurring on March 27, 2011 and the final survey conducted on April 15, 2011. The areas being surveyed by GLA included those depressions which had been previously reported to the U.S. Fish and Wildlife Service (Service) by a member of the public and about which the Service had requested GLA to provide information, with the exception of four depressions which were no longer subject to survey requirements either due to the presence of previously-documented listed species or where the full two-year protocol surveys had been completed with no listed species detected. GLA's survey work also did not include a feature that is located offsite for which permission to enter and survey has not been obtained from the landowner.

## I. SITE LOCATION AND DESCRIPTION

The Newport Banning Ranch property covers approximately 401 acres and is located in unincorporated Orange County and the City of Newport Beach. The Site is located north of Pacific Coast Highway (PCH), east of the Santa Ana River, south of 19<sup>th</sup> Street (extended), and west of existing residential and commercial/industrial areas. The Site is situated within unsectioned areas of Township 6 South, and Range 10 West of the USGS Newport Beach 7.5' Topographic quadrangle map [Exhibit 1 – Vicinity Map]. Coordinates for the site are as follows: 33.634102°, -117.943283°.

The Site has been utilized as an operating oil field for over 50 years and ongoing oil extraction operations along with remnant oil wells and pipelines occur throughout the site. The site includes flat lowlands throughout the western portion of the property, south and west facing slopes located east of the lowlands, a southwest facing bluff overlooking the Newport Shores residential area, a large mesa encompassing the eastern portion of the site, and two arroyos that bisect the mesa. All of the depressed areas are located within the operating oil field, and some are themselves oil field facilities, such as sumps, soil remediation areas, and bermed areas located in oil field facilities, such as roads and parking lots. The location of each sampled feature is depicted on Exhibit 2. Exhibit 3 consists of representative photographs of the sampled areas.

## II. METHODOLOGY

GLA initiated surveys on October 22, 2010. Surveys for vernal pool branchiopods were conducted to comply with the USFWS' *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*.<sup>1</sup> A GLA biologist familiar with the USFWS guidelines and familiar with the requirements for fairy shrimp monitored the site to determine when each feature had sufficient water adequate for sampling. Site visits to monitor for ponding were conducted on October 22, 25, 28, November 5, 11, 22 and 24, December 13, 23, and 27, 2010. Sampling visits were conducted on October 28, 2010, January 6, January 20, February 1, February 17, April 1, and April 15, 2011, all of which occurred on 14 day intervals or within 14 days of the preceding rainfall event. Photographs were taken during many of the sampling visits and representative photographs are included in Exhibit 2. The information was recorded on vernal pool data sheets. Surveys for the presence of aquatic wildlife was performed with the aid of an invertebrate dip net. Representative portions of bottoms, edges, and vertical water columns within each feature were adequately sampled. Samples were collected using the dip net and specimens were stored

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<sup>1</sup> USFWS. 1996. *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*.

Erin McCarthy  
U.S. Fish and Wildlife Service  
July 26, 2011  
Page 3

in containers with water collected where the specimen was found. Specimens were placed in an ethyl alcohol solution for preservation within four hours of collection. Specimens were inspected using a dissecting microscope and the key found in Eriksen and Belk (1999).<sup>2</sup>

It is important to note that the 2010/2011 rainfall season resulted in nearly 200-percent of normal rainfall and that December accounted for 9.19 inches of rainfall or 647-percent of normal. These conditions created unusual flooding across the site and created temporary ponding in many upland areas, including areas subject to active oil field operations. Most of the areas surveyed during the 2010/2011 rainfall season are subject to regular oil field operations or are not associated with areas that exhibit habitat values for the San Diego fairy shrimp and do not pond water in normal or average rainfall years. The 2001/2011 rainfall season at nearly double than normal resulted in conditions that are not “normal” hydrological conditions and do not reflect “wetland” conditions in accordance with accepted wetland delineation procedures set forth on page 95 of the Corps’ 2008 Arid West Supplement Version 2.0.<sup>3</sup>

### III. DESCRIPTION OF THE FEATURES SAMPLED DURING 2010/2011 SEASON

The accounts below provide a description for each feature sampled as a result of the extreme conditions associated with the 2010/2011 rainfall year as well as the results of the surveys. The nomenclature for the features follows GLA’s previous designations as well as new nomenclature for areas that were detected during the 2009/2010 and/or the 2010/2011 Survey Seasons. We have in an appendix also included a chart that cross-references the GLA nomenclature with information provided to the Service by a member of the public so that comparison of the information can be more easily undertaken by the Service.

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<sup>2</sup> Eriksen, C. and D. Belk. 1999. *Fairy Shrimps of California’s Puddles, Pools, and Playas*. Mad River Press, Inc. Eureka, California.

<sup>3</sup> *Direct hydrologic observations*. Verify that the plant community occurs in an area subject to prolonged inundation or soil saturation during the growing season. This can be done by visiting the site at 2- to 3-day intervals during the portion of the growing season when surface water is most likely to be present or water tables are normally high. Hydrophytic vegetation is considered to be present, and the site is a wetland, if surface water is present and/or the water table is 12 in. (30 cm) or less from the surface for 14 or more consecutive days during the growing season during a period when antecedent precipitation has been normal or drier than normal. If necessary, microtopographic highs and lows should be evaluated separately. The normality of the current year’s rainfall must be considered in interpreting field results, as well as the likelihood that wet conditions will occur on the site at least every other year (for more information, see the section on “Wetlands that Periodically Lack Indicators of Wetland Hydrology” in this chapter).

#### **Feature A**

This feature occurs near the bluff edge and was subject to a complete set of protocol surveys in 2008/2009 and 2009/2010 with only the versatile fairy shrimp present.

#### **Feature B (aka Pool 2010-C)**

This feature consists of a shallow depression that covers approximately 0.03-acre. The depression was formed by removal of portions of a temporary stockpile of bio-remediated soils that originated with oil field excavation activities. The maximum depth of this feature is approximately 20 centimeters. The feature is generally unvegetated. Site photographs are attached as Exhibit 2. The versatile fairy shrimp was detected during surveys in 2009/2010 and 2010/2011. The San Diego fairy shrimp was not detected during surveys. Exhibit 2, Photograph 1 depicts the feature.

#### **Feature C**

This feature consists of a shallow depression that covers approximately 0.04-acre. The depression formed immediately adjacent to a temporary stockpile of contaminated oil field concrete and soil and is underlain by oil-contaminated soils. Typically this feature measures less than 10 cm with a small area near the southern end that is approximately 50 cm deep. Site photographs are included in Exhibit 2. The versatile fairy shrimp was detected during the 2010/2011 surveys. The San Diego fairy shrimp was not detected during surveys. Exhibit 2, Photograph 2 depicts the feature showing the high level of disturbance.

#### **Feature D (aka Pool 2000-4)**

This feature covers approximately 0.02 acre and was created by excavation for oil field maintenance within an area of intensive oil field activities and is underlain by oil-contaminated soils. The versatile fairy shrimp was detected in this depression during protocol surveys conducted in 2000. Fairy shrimp were not detected during the 2010/2011 surveys.

#### **Feature E**

This feature covers approximately 0.05 acre and was created as an oil field sump area with the intent purpose of capturing oil spills from the surrounding wells and pipelines. This feature was previously subject to investigation efforts to determine the extent of contamination as part of standard oil field operations [see Appendix A] and is underlain by oil-contaminated soils. This feature, of which a portion is depicted on Exhibit 2, Photograph 3, is currently vegetated with

Erin McCarthy  
U.S. Fish and Wildlife Service  
July 26, 2011  
Page 5

mulefat. The San Diego fairy shrimp was detected in this feature in low numbers during the 2010/2011 surveys.

#### **Feature F**

This feature covers approximately 0.02 acre and occurs in grassland. The feature was created by construction of a berm located to protect an oil field road. No fairy shrimp were detected during the 2010/2011 surveys. Exhibit 2, Photograph 4 depicts the feature.

#### **Feature G**

This feature covers approximately 0.003 acre and was created by excavation within an area of intensive oil field activities. Exhibit 2, Photograph 5 depicts this feature with numerous pipelines. The San Diego fairy shrimp was detected during the 2010/2011 surveys.

#### **Feature H**

This feature covers less than 0.005 and is an artificial oil field depression created by excavation. This feature did not exhibit sufficient ponding to support fairy shrimp during the 2010/2011 surveys, and as such, no fairy shrimp were detected during the 2010/2011 surveys. Exhibit 2, Photograph 6 depicts this highly disturbed feature that supports a predominance of upland non-native vegetation.

#### **Feature I**

This feature covers approximately 0.03 acre and occurs in grassland. The feature was created by construction of a berm located to protect an oil field road and is depicted in Exhibit 2, Photograph 7. The San Diego fairy shrimp was detected during the 2010/2011 surveys.

#### **Feature J**

This feature covers approximately 0.09 acre and occurs in grassland. The feature was created by construction of a berm located to protect an oil field road and is depicted in Exhibit 2, Photograph 8. The San Diego fairy shrimp was detected during the 2010/2011 surveys.

### **Feature K**

This feature covers approximately 0.03 acre and occurs in grassland. The feature was created by excavation for oil operations and is depicted in Exhibit 2, Photograph 9. No fairy shrimp were detected during the 2010/2011 surveys.

### **Feature L**

This feature covers approximately 0.04 acre and occurs in grassland. The feature was created by excavation in a grassland area as part of oil field operations and is depicted in Exhibit 2, Photograph 10. No fairy shrimp were detected during the 2010/2011 surveys.

### **Feature M**

This feature covers approximately 0.02 acre and occurs in the oil field pipe and material storage yard; standpipes from oil field infrastructure occur within the area in which the rainwater collected. The versatile fairy shrimp was detected during surveys in 2010 and 2011. The San Diego fairy shrimp was not detected during surveys.

### **Feature N**

This feature covers approximately 0.06 acre and occurs in the oil field pipe and material storage yard and consists of a gravel-covered area and is depicted in Exhibit 2, Photograph 11. The versatile fairy shrimp was detected during surveys in 2010 and 2011. The San Diego fairy shrimp was not detected during surveys.

### **Feature O**

This feature occurs in the oil field pipe and material storage yard and consists of a gravel-covered area. This feature did not exhibit sufficient ponding to support fairy shrimp (i.e., more than a few days following storm events) during the 2010/2011 surveys, and as such, no fairy shrimp were detected during the 2010/2011 surveys.

### **Feature P**

This feature covers approximately 0.009 acre and occurs in the oil field pipe and material storage yard and consists of a gravel-covered area. The versatile fairy shrimp was detected during surveys in 2010 and 2011. The San Diego fairy shrimp was not detected during surveys. Exhibit 2, Photograph 12 depicts the feature.

### **Feature Q**

This “road” feature is a very shallow roadside depression that collects rainwater and runoff briefly following storm events, which in turn is part of a series of depressions that occupy the paved parking area and paved entrance road as well as adjacent earthen road shoulders near the 17<sup>th</sup> Street gate entrance to the project site. Because this feature occurs within a roadway it was determined to not exhibit potential for listed fairy shrimp and was not sampled during the 2010/2011 surveys. Exhibit 2, Photograph 15 depicts this feature.

### **Feature R**

This feature is a very shallow roadside depression that collects rain and runoff briefly following storm events, which in turn is part of a series of depressions that occupy the paved parking area and paved entrance road as well as adjacent earthen road shoulders near the 17<sup>th</sup> Street gate entrance to the project site. The versatile fairy shrimp was detected in this feature during the 2010/2011 surveys season. Exhibit 2, Photographs 13 and 14 depict this feature following a substantial storm event and then eight days later, showing how quickly it dries out.

### **Feature S**

This “road” feature is a very shallow roadside depression that collects rain and runoff briefly following storm events, which in turn is part of a series of depressions that occupy the paved parking area and paved entrance road as well as adjacent earthen road shoulders near the 17<sup>th</sup> Street gate entrance to the project site. Because this feature occurs within a roadway it was determined to not exhibit potential for listed fairy shrimp and was not sampled during the 2010/2011 surveys. Exhibit 2, Photograph 16 depicts this feature.

### **Feature T**

This “road” feature is a very shallow depression within the asphalt-covered parking area and entry road that collects rain and runoff briefly following storm events. This feature is part of a series of depressions that occupy the paved parking area and paved entrance road as well as adjacent earthen road shoulders near the 17<sup>th</sup> Street gate entrance to the project site. The versatile fairy shrimp was detected in Feature T during the 2010/2011 survey season. Exhibit 2, Photograph 17 depicts this feature.

### Feature U

This “road” feature is a very shallow depression within the asphalt-covered parking area and entry road that collects rain and runoff briefly following storm events. This feature is part of a series of depressions that occupy the paved parking area and paved entrance road as well as adjacent earthen road shoulders near the 17<sup>th</sup> Street gate entrance to the project site. Because this feature occurs within a roadway and active parking area it was determined to not exhibit potential for listed fairy shrimp and was not sampled during the 2010/2011 surveys. Exhibit 2, Photograph 18 depicts this feature.

### Feature V (aka Pool 2010-B)

This feature consists of a shallow depression located in the northeast portion of the site along the property boundary between 18<sup>th</sup> and 19<sup>th</sup> Streets (extended). It is located on a plateau area created to service existing oil well and the feature has formed because of the oil field activities. The estimated maximum depth of the majority of the depression is approximately 10 centimeters as depicted in Photograph 19 of Exhibit 2. The versatile fairy shrimp were detected during the 2009/2010 surveys and was not detected during the 2010/2011 surveys.

### Feature W

This feature is located in the southeast quadrant of the site within a grassland depression. The feature was created during grading in the 1960s. No fairy shrimp were detected during the 2010/2011 surveys.

**Table 1. Summary of Depression Features**

<b>Pool</b>	<b>Size (acres)</b>	<b>Vegetation Type</b>	<b>Origin/Function</b>	<b>Survey Information</b>
VP1	0.30 acre	Disturbed Mulefat	Historic oil production and recreation area, currently crossed by numerous pipelines and infrastructure	San Diego Fairy Shrimp
VP2	0.02 acre	Disturbed – Developed	Shallow depression on active oil production well pad	San Diego Fairy Shrimp
AD3	0.007 acre	Non-native, upland grassland	Artificial depression in active pipeline corridor	San Diego Fairy Shrimp

<b>Pool</b>	<b>Size (acres)</b>	<b>Vegetation Type</b>	<b>Origin/Function</b>	<b>Survey Information</b>
A	0.04 acre	Non-native, upland grassland	Depression with oil field infrastructure at edge of pool	Versatile Fairy Shrimp Only
B	0.03 acre	Disturbed	Temporary stockpile of bio-remediated soils; depression from oil field excavation activities	Versatile Fairy Shrimp Only
C	0.04 acre	Disturbed	Oil field excavation and stockpile area	Versatile Fairy Shrimp Only
D	0.02 acre	Disturbed	Oil field excavation area	Versatile Fairy Shrimp Only
E	0.05 acre	Disturbed Mulefat	Historic oil sump with contaminated soils – remediation necessary	San Diego Fairy Shrimp
F	0.02 acre	Non-native, upland grassland	Bermed area to protect oil field road	None
G	0.003	Non-native grassland	Oil field sump with multiple pipelines	San Diego Fairy Shrimp
H	0.005 acre	Non-native grassland	Shallow depression created by oil field activities	None
I	0.03 acre	Non-native grassland	Bermed area to store construction debris and protect oil field road	San Diego Fairy Shrimp
J	0.09 acre	Non-native grassland	Bermed area to store construction debris and protect oil field road	San Diego Fairy Shrimp
K	0.03 acre	Non-native grassland	Shallow artificial oil field depression	None
L	0.04 acre	Non-native grassland	Shallow artificial oil field depression	None
M	0.02 acre	Disturbed	Oil field pipe and material storage yard; standpipes in ponded area	Versatile Fairy Shrimp Only Surveys ongoing
N	0.06 acre	Disturbed	Oil field storage equipment area largely covered with gravel	Versatile Fairy Shrimp Only
O	NA	Disturbed	Oil field storage equipment area largely covered with gravel failed to pond for sufficient duration for fairy shrimp to emerge	None
P	0.009 acre	Disturbed	Oil field soil remediation area	Versatile Fairy Shrimp Only

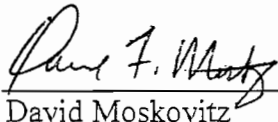
Erin McCarthy  
 U.S. Fish and Wildlife Service  
 July 26, 2011  
 Page 10

Pool	Size (acres)	Vegetation Type	Origin/Function	Survey Information
Q	NA	Developed	Roadside feature	None
R	NA	Disturbed	Roadside feature	Versatile Fairy Shrimp Only
S	NA	Developed	Roadside feature	None
T	NA	Developed	Paved Roadway	Versatile Fairy Shrimp Only
U	NA	Developed	Paved Roadway	None
V	NA	Disturbed	Existing Well Pad	Versatile Fairy Shrimp Only
W	0.26	Non-native grassland	Relict depression in non-native grassland from Caltrans grading	None

If you have any questions regarding this report, please call me at (949) 837-0404, ext. 42.

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

GLENN LUKOS ASSOCIATES, INC.


TE-084606-1
7/26/11  
 \_\_\_\_\_  
 David Moskovitz Permit # Date  
 Biologist

Cc: Christine Medak (U.S. Fish and Wildlife Service)

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: 10/28/10 Time: 9:46 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE 084606-1

Site/Project Name: Newport Banning Ranch Pool #: N

Township: 6 S Range: 10 W Section:      33.634102 117.943283  
lat. long.

Temperature: Water: 15 °C Air: 23 °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 scraped  
- 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 Observations: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's) *1000s*

Anostracans:  
(note reproductive status) *many mature females*

Notostracans:  
(note reproductive status) *Collected 15 muls B. lindahli*

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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: 10/28/10 Time: 10:05 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: P

Township: 6S Range: 10W Section: \_\_\_\_\_ 33.634102 117.943283  
lat. long.

Temperature: Water: 19 °C Air: 24 °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: \_\_\_\_\_

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

Anostracans:  
 (note reproductive status)

*Some females*  
*males smaller*

Notostracans:  
 (note reproductive status)

*Collected 12 male *B. lindahli**

Species Observations (Optional):

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: 10/28/10 Time: 10:30 County: Orange Quad: Newport Beach

Collector(s): David Moskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: B

Township: 6S Range: 10W Section: --- 33.634102 117.943283  
lat. long.

Temperature: Water: 20 °C Air: 27 °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 ~~sheep~~
- other:  light moderate heavy
- land use of habitat: borrow pit

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

Anostracans:

(note reproductive status) Collected 3 male *B. lindahl*

Notostracans:

(note reproductive status)

Species Observations (Optional) :

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: 10/28/10 Time: 11:20 County: Orange Quad: Newport Beach

Collector(s): David Moskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: R

Township: 6S Range: 10W Section: \_\_\_\_\_ 33.634102 117.943283  
lat. long.

Temperature: Water: 21 °C Air: 27 °C

Pool Depth: at time of sampling: \_\_\_\_\_ cm Surface Area: \_\_\_\_\_ 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: roadside depression

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

Anostracans:  
 (note reproductive status)

mostly immature females

Notostracans:  
 (note reproductive status)

Collected 8 male *B. lindahli*

Species Observations (Optional) :

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: 1/6/11 Time: 10:23 County: Orange Quad: Newport Beach

Collector(s): David Moskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: J

Township: 65 Range: 10 W Section:      33.634102 117.943283  
lat. long.

Temperature: Water: 11 °C Air: 16 °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: created by constructed berm

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

Anostracans:  
(note reproductive status)

Notostracans:  
(note reproductive status)

Species Observations (Optional) :

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>
<i>B. sandiegonensis</i>	11		J

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: 1/6/11 Time: 10:37 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: L

Township: 6S Range: 10W Section: \_\_\_\_\_ 33.634102 lat. 117.943283 long.

Temperature: Water: 11 °C Air: 16 °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: excavator in grassland area

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

Anostracans: (note reproductive status) None

Notostracans: (note reproductive status)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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: 1/16/11 Time: 10:45 County: Orange Quad: Newport Beach

Collector(s): David Moskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: I

Township: 6S Range: 10W Section:        33.634102 117.943283  
lat. long.

Temperature: Water: 11 °C Air: 16 °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: Created by construction of berm

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

Anostracans: males + females  
(note reproductive status)

Notostracans:  
(note reproductive status)

Species Observations (Optional):

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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>B. sandiegonensis</u>	<u>8</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: 1/6/11 Time: 10:51 County: Orange Quad: Newport Beach

Collector(s): David Moskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: F

Township: 6S Range: 10W Section:            33.184102 117.943283  
lat. long.

Temperature: Water: 12 °C Air: 16 °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: Created by construction of berm

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

Anostracans: (note reproductive status) *None*

Notostracans: (note reproductive status)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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: 1/6/11 Time: 11:10 County: Orange Quad: Newport Beach

Collector(s): David Moskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: B

Township: 6S Range: 10W Section: \_\_\_\_\_ 33.634102 117.943283  
lat. long.

Temperature: Water: 13 °C Air: 16 °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: borrow pit

(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 Observations: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's) *10,000's*

Anostracans:  
(note reproductive status)

*Collected 10 male B. lindahli*

Notostracans:  
(note reproductive status)

Species Observations (Optional):

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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: 1/6/11 Time: 11:20 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: E

Township: 6S Range: 10W Section:      33.634102 117.943283  
lat. long.

Temperature: Water: 11 °C Air: 16 °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: Oil field sump area.

(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 Observations: 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)      2 males collected. No other shrimp detected.

Notostracans:  
(note reproductive status)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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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<i>B. sandiegensis</i>	2		
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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: 1/6/11 Time: 11:25 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-089606-1

Site/Project Name: Newport Banning Ranch Pool #: C

Township: 6 S Range: 10 W Section:      33.634102 117.943283  
lat. long.

Temperature: Water: 12 °C Air: 16 °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: Adjacent to contaminated oil field concrete.

(Optional) Water Chemistry Data pipe runs through depression

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

Anostracans:

(note reproductive status)

*None*

Notostracans:

(note reproductive status)

Species Observations (Optional) :

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: 1/16/11 Time: 11:40 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: N

Township: 6S Range: 10W Section:      33.634102 117.943283  
lat. long.

Temperature: Water: 14 °C Air: 16 °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: Scraped area

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

Anostracans:  
(note reproductive status)

Notostracans: Collected 5 male B. lindahl  
(note reproductive status)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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: 1/6/11 Time: 11:47 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: M

Township: 6S Range: 10W Section: --- 33.634102 117.943283  
lat. long.

Temperature: Water: 14 °C Air: 16 °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: Oil field pipe and material storage yard.

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

Anostracans:

(note reproductive status)

*Collected 4 males of B. lindahli*

Notostracans:

(note reproductive status)

Species Observations (Optional) :

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: 1/6/11 Time: 12:05 County: Orange Quad: Newport Beech

Collector(s): David Moskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: P

Township: 6S Range: 10W Section:        33.634102 117.943283  
lat. long.

Temperature: Water: 14 °C Air: 19 °C

Pool Depth: at time of sampling: \_\_\_\_\_ cm Surface Area: \_\_\_\_\_ 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: Oil field soil remediation area.

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

Anostracans:

(note reproductive status) 5 male B. lindahli collected

Notostracans:

(note reproductive status)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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 X yes

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

Date: 1/6/11 Time: 12:10 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: R

Township: 6S Range: 10W Section: \_\_\_\_\_ lat. 33.634102 long. 117.943283

Temperature: Water: 13 °C Air: 18 °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: roadside feature

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

Anostracans:  
(note reproductive status)

Notostracans: One male B. lindahli collected  
(note reproductive status)

Species Observations (Optional) :

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: 1/6/11 Time: 12:30 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: V

Township: 6S Range: 10W Section: --- 33.634102 117.943283  
lat. long.

Temperature: Water: 17 °C Air: 19 °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: existing well pad

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

Anostracans:  
(note reproductive status)

*None*

Notostracans:  
(note reproductive status)

Species Observations (Optional) :

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: 1/20/11 Time: 1:30 pm County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: M

Township: 65 Range: 10W Section: --- 33.634102 117.943283  
lat. long.

Temperature: Water: 23 °C Air: 22 °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: Oil field pipe and material storage yard.

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

Anostracans:

(note reproductive status)

*Collected 2 male B. lindahli*

Notostracans:

(note reproductive status)

Species Observations (Optional) :

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: 1 / 20 / 11 Time: 1:55 pm County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: K

Township: 65 Range: 10W Section: --- 33.634102 117.943283  
lat. long.

Temperature: Water: 23 °C Air: 22 °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: Shallow artificial oil field depression.

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

Anostracans:  
(note reproductive status) *None*

Notostracans:  
(note reproductive status)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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: 1/20/11 Time: 2:15 pm County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: D

Township: 6S Range: 10W Section: \_\_\_\_\_ 33.63402 117.943283  
lat. long.

Temperature: Water: 23 °C Air: 22 °C

Pool Depth: at time of sampling: 3 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: oil field excavation area

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

Anostracans:  
(note reproductive status) *None*

Notostracans:  
(note reproductive status)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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: 1/20/11 Time: 2:35 pm County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: FE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: C

Township: 6S Range: 10W Section: \_\_\_\_\_ lat. 33.634102 long. 117.943283

Temperature: Water: 14 °C Air: 23 °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: Oil field excavation and stockpile area

(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 Observations: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's) *1000's Male/female*

Anostracans:  
 (note reproductive status)

Notostracans:  
 (note reproductive status)

*Collected 10 male B. lindahli*

Species Observations (Optional) :

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: 2/1/11 Time: 10:55 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: W

Township: 6S Range: 10W Section:      33.634102 117.943283  
lat. long.

Temperature: Water: 14 °C Air: 18 °C

Pool Depth: at time of sampling: 25 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: Depression in non-native grassland

(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 Observations: 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)

*None*

Species Observations (Optional) :

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 X yes

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

Date: 2 / 1 / 11 Time: 11:40 am County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: ~~1~~ C

Township: 65 Range: 10W Section: \_\_\_\_\_ 33.634102 lat. 117.943283 long.

Temperature: Water: 12 °C Air: 18 °C

Pool Depth: at time of sampling: 20 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: Oil field excavation and stockpile area.

(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 Observations: 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:  
(note reproductive status)

Species Observations (Optional) :

<table border="0"> <tr><td>Cladocerans:</td><td>yes</td><td>no</td></tr> <tr><td>Conchostracans:</td><td>yes</td><td>no</td></tr> <tr><td>Copepods:</td><td>yes</td><td>no</td></tr> <tr><td>Ostracods</td><td>yes</td><td>no</td></tr> <tr><td>Fish</td><td>yes</td><td>no</td></tr> <tr><td>Frogs</td><td>yes</td><td>no</td></tr> <tr><td>Salamanders</td><td>yes</td><td>no</td></tr> <tr><td>Waterfowl</td><td>yes</td><td>no</td></tr> <tr><td>Other (specify) _____</td><td></td><td></td></tr> </table>	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) _____			<p>Insects: (adult or larvae)</p> <table border="0"> <tr><td>Anisoptera:</td><td>yes</td><td>no</td></tr> <tr><td>Zygoptera:</td><td>yes</td><td>no</td></tr> <tr><td>Hydrophilidae:</td><td>yes</td><td>no</td></tr> <tr><td>Dytiscidae:</td><td>yes</td><td>no</td></tr> <tr><td>Corixidae:</td><td>yes</td><td>no</td></tr> <tr><td>Notonectidae:</td><td>yes</td><td>no</td></tr> <tr><td>Belostomatidae:</td><td>yes</td><td>no</td></tr> <tr><td>Other (specify) _____</td><td></td><td></td></tr> </table>	Anisoptera:	yes	no	Zygoptera:	yes	no	Hydrophilidae:	yes	no	Dytiscidae:	yes	no	Corixidae:	yes	no	Notonectidae:	yes	no	Belostomatidae:	yes	no	Other (specify) _____		
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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: 4 / 1 / 11 Time: 10:37 County: Orange Quad: Newport Bend

Collector(s): David Moskowitz Permit #: TE-087606-1

Site/Project Name: Newport Banning Ranch Pool #: VP 2

Township: 6S Range: 10W Section:            lat.            long.           

Temperature: Water: 26 °C Air:            °C

Pool Depth: at time of sampling: 10 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: Shallow depression on active oil production well pad.

(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 Observations: 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)

Species Observations (Optional) :

Cladocerans:	yes	no	Insects: (adult or larvae)		
Conchostracans:	yes	no	Anisoptera:	yes	no
Copepods:	yes	no	Zygoptera:	yes	no
Ostracods	yes	no	Hydrophilidae:	yes	no
Fish	yes	no	Dytiscidae:	yes	no
Frogs	yes	no	Corixidae:	yes	no
Salamanders	yes	no	Notonectidae:	yes	no
Waterfowl	yes	no	Belostomatidae:	yes	no
Other (specify) _____			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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*B. sandiegoensis*

10

VP 2

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: 4 / 1 / 11 Time: 9:35 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: T

Township: 6S Range: 10W Section: --- lat. --- long. ---

Temperature: Water: 22 °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: paved roadway

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

Anostracans:  
(note reproductive status)

*Collected 9 male B. lindahli*

Notostracans:  
(note reproductive status)

Species Observations (Optional):

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: 4/1/14 Time: 10:20 County: Orange Quad: Newport Beach

Collector(s): David Maskowitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: D

Township: 65 Range: 10 W Section:          lat.          long.         

Temperature: Water: 16 °C Air:          °C

Pool Depth: at time of sampling: 7 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: Oil field excavation area

(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 Observations: 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)

*None*

Species Observations (Optional) :

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: 4/1/11 Time: 9:58 County: Orange Quad: Newport Beed

Collector(s): David Maskovitz Permit #: TE-084606-1

Site/Project Name: Newport Banning Ranch Pool #: C

Township: 6 S Range: 10 W Section:        lat.        long.       

Temperature: Water: 17 °C Air:        °C

Pool Depth: at time of sampling: 30 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: Oil excavation and storage area

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

Anostracans:

(note reproductive status)

Collected 20 male B. lindahli

Notostracans:

(note reproductive status)

Species Observations (Optional):

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: 4 / 1 / 11 Time: 12:30 County: Orange Quad: Newport Beach

Collector(s): David Moskowitz Permit #: TE-089606-1

Site/Project Name: Newport Bunniny Ranch Pool #: M

Township: 6S Range: 10W Section:          lat.          long.         

Temperature: Water: 29 °C Air:          °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: Oil field ppr and material storage yard

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

Anostracans:

(note reproductive status) *Collected 2 male B. lindahli*

Notostracans:

(note reproductive status)

Species Observations (Optional):

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) \_\_\_\_\_

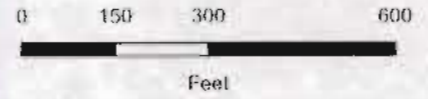
Voucher Specimens

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<u>Species</u>	<u># Individuals</u>	<u>Accession/Catalog #</u>	<u>Pool #</u>
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### Legend

-  Project Boundary
-  Oil Operations
-  Oil Pipeline
-  Well Locations



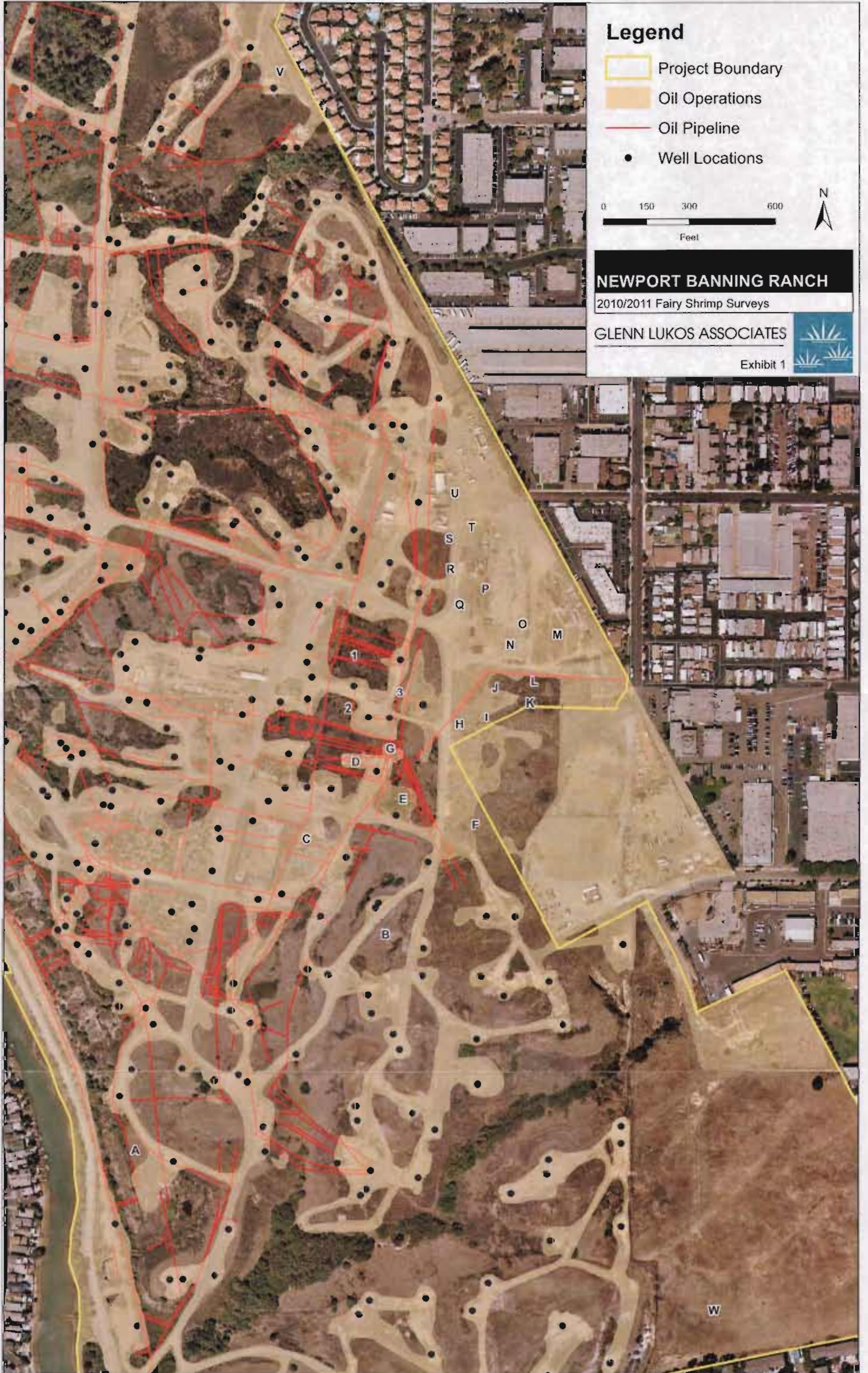
## NEWPORT BANNING RANCH

2010/2011 Fairy Shrimp Surveys

GLENN LUKOS ASSOCIATES



Exhibit 1





PHOTOGRAPH 1: View of Feature B looking south. This feature is a soil remediation area and versatile fairy shrimp were detected in 2009/2010 & 2010/2011 surveys.



PHOTOGRAPH 2: View of Feature C looking northeast. This feature is a low point in soil and concrete stockpile area. The versatile fairy shrimp was detected during the 2010/2011 surveys.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 3: Feature E is a partially remediated oil sump with low density of San Diego fairy shrimp.



PHOTOGRAPH 4: Feature F looking southwest. Shallow depression created by berm to protect oil field road. No fairy shrimp were detected in 2011.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 5: View of Feature G looking southeast. Feature G exhibits a low density of San Diego fairy shrimp.



PHOTOGRAPH 6: View of Feature H looking northeast. Feature H is a shallow, recently disturbed area with a predominance of non-native upland vegetation. No fairy shrimp were detected in 2011.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 7: View of Feature I looking west. Feature I exhibits a low density of San Diego fairy shrimp.



PHOTOGRAPH 8: Feature J supports San Diego fairy shrimp. Shallow depression created by oil field berms constructed to protect roads.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

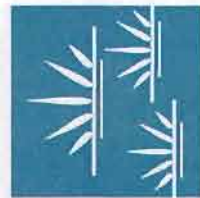
Site Photographs



PHOTOGRAPH 9: View of Feature K looking north. No fairy shrimp were detected in the feature in 2011.



PHOTOGRAPH 10: View of Feature L looking north. No fairy shrimp were detected in the feature in 2011.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 11: View of Feature N looking north. Feature N is a shallow depression within an oil field storage yard. This feature supports the versatile fairy shrimp.



PHOTOGRAPH 12: View of Feature P looking north. This area is immediately adjacent to a soil remediation area (see stockpile in background). The versatile fairy shrimp was detected during 2010/2011 surveys.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 13: Feature R looking south on October 22, 2010 showing shallow roadside feature. The versatile fairy shrimp was detected during 2010/2011 surveys.



PHOTOGRAPH 14: Feature R looking south on November 1, 2010 showing how rapidly the feature dries during normal conditions.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 15: View of Feature Q looking north showing shallow ponding within roadside depression.



PHOTOGRAPH 16: View of Feature S looking north showing shallow ponding with roadside depression.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 17: View of Feature T looking north showing shallow ponding in asphalt covered road area. The versatile fairy shrimp was detected in the feature in 2011.



PHOTOGRAPH 18: View of Feature U looking north showing shallow ponding in asphalt parking area.



GLENN LUKOS ASSOCIATES

Exhibit 3

NEWPORT BANNING RANCH

Site Photographs



PHOTOGRAPH 19: View of Feature V looking south. Feature V occurs on an oil well pad and supports the versatile fairy shrimp.



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Exhibit 3

**NEWPORT BANNING RANCH**

Site Photographs