



LSA ASSOCIATES, INC.

PACIFIC CENTER

703 PALOMAR AIRPORT RD., SUITE 260 760.931.5471 TEL
CARLSBAD, CALIFORNIA 92011 760.918.2458 FAX

BERKELEY

FT. COLLINS

IRVINE

FRESNO

PALM SPRINGS

PT. RICHMOND

RIVERSIDE

ROCKLIN

SAN LUIS OBISPO

SOUTH SAN FRANCISCO

January 19, 2011

Edalia Olivo-Gomez
Environmental Specialist
8315 Century Park Court, CP21E
San Diego, CA 92123-1548

Subject: Results of Focused Plant Survey at Ocotillo Sol Project Site in Imperial County (LSA Project No. SGE0905)

Dear Ms. Olivo-Gomez:

This report documents the results of a focused survey for sensitive plant species at the above-referenced approximately 115-acre project site, located in the Yuha Desert of lower Imperial Valley, approximately 10 miles southwest of El Centro, Imperial County, California, within portions of Sections 2 and 3 of Township 16.5 South, Range 12 East. An approximately 350-acre area encompassing the project site, as shown on the United States Geological Survey (USGS) *Mount Signal, California* 7.5-minute topographic quadrangle map (Figure 1, attached), was surveyed during site visits in the spring of 2010. Following project refinement, the survey area was reduced to approximately 145 acres for a fall site visit. The fall survey area consists of the project site surrounded by a 150-foot buffer in undeveloped areas (Figure 2).

The survey was conducted according to *Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species* (BLM protocol; Bureau of Land Management [BLM] 2009). No special status plant species were found during the survey and none are expected to occur on the project site. One target species, Thurber's pilostyles (*Pilostyles thurberi*), was found within the approximately 350-acre spring survey area but outside of the approximately 145-acre fall survey area. This species is not a special status plant (as defined in the BLM protocol) and is not considered sensitive, but is monitored by the California Department of Fish and Game (CDFG) and the California Native Plant Society (CNPS) as a CNPS List 4 species.

PROJECT DESCRIPTION

SDG&E proposes to develop, build, own, and operate a photovoltaic (PV) electric generation project in Imperial County, California on previously undisturbed Federal land adjacent to the SDGE Imperial Valley Substation. The project's purpose is to generate approximately 12-14 megawatts of renewable energy utilizing the abundant solar resource available in Imperial County. The existing substation and proposed PV array site are located on land under the jurisdiction of the BLM. The project will be located on approximately 100 acres directly south and southwest of SDG&E's Imperial Valley Substation and construction will temporarily require an additional 15 acres for equipment and components.

PHYSICAL AND BIOLOGICAL SETTING

The approximately 350-acre spring survey area is generally flat and level, with elevation ranging from approximately 10 feet below to 30 feet above mean sea level. Observed soils are sands and loamy sands. Pinto Wash crosses the southeast corner of the spring survey area but is outside the approximately 145-acre fall survey area and project site.

There are four vegetation types (CDFG 2007) within the spring survey area (Figure 2). The *Larrea tridentata* – *Ambrosia dumosa* Alliance is the predominant vegetation type in the spring survey area. The *Larrea tridentata* – *Ambrosia dumosa* vegetation type is the only vegetation type within the fall survey area and the project site. This vegetation type is dominated by creosote bush (*Larrea tridentata*), burrobush (*Ambrosia dumosa*), Panamint cryptantha (*Cryptantha angustifolia*), desert Indianwheat (*Plantago ovata*) and common Mediterranean grass (*Schismus barbatus*). The predominant vegetation type in Pinto Wash is the *Larrea tridentata* Alliance, which is dominated by creosote bush, Panamint cryptantha, and common Mediterranean grass. The *Psoralea argophylla* Alliance occupies a smaller portion of Pinto Wash, and is dominated by smoketree (*Psoralea argophylla*), cryptantha (*Cryptantha* sp.), common Mediterranean grass, and desert sand verbena (*Abronia villosa* var. *villosa*). A *Tamarix aphylla* Semi-Natural Non-Native Stand occurs in the northern portion of the spring survey area just east of the existing substation. This vegetation type is dominated by athel (*Tamarix aphylla*), cryptantha, creosote bush, and common Mediterranean grass.

SURVEY TARGET SPECIES

At the direction of Andrew Trouette of the BLM El Centro Field Office, all plants on Table 3A of the BLM's *California Desert Conservation Area Plan 1980 As Amended* (Bureau of Land Management 1980) were considered as potential survey target species. All plants on the CDFG *Special Vascular Plants, Bryophytes, and Lichens List* (CDFG, Natural Diversity Data Base [CNDDDB] 2009a) that are known to occur in Imperial County, based on records in the CNDDDB (CDFG, CNDDDB 2009b) and on CalFlora (Calflora 2009), were also considered.

Based on the distribution and habitat requirements of each taxon, and habitat conditions in the survey area, a determination of habitat suitability was made for each taxon. A list of taxa with potentially suitable habitat in the survey area is provided in Table A. These are the target species for the plant survey. All of these are CNPS List 2 plants, except for chaparral sand-verbena (*Abronia villosa* var. *aurita*), which is a CNPS List 1B plant, and Thurber's pilostyles, which is a CNPS List 4 plant. None is listed as threatened, endangered, or rare under the Federal or State Endangered Species Acts.

Table A. Plant Taxa with Potentially Suitable Habitat in the Survey Area (Target Species)

Species	Habitat and Distribution	Activity Period
<i>Abronia villosa</i> var. <i>aurita</i> Chaparral sand-verbena	Sandy areas in chaparral and coastal sage scrub and rarely in desert dunes or other sandy areas, below 1,600 meters (5,300 feet) elevation.	Blooms mostly March through August (annual herb)
<i>Astragalus insularis</i> var. <i>harwoodii</i> Harwood's milk-vetch	Desert dunes or open sandy flats, or less often in stony desert washes, mostly within creosote bush scrub, at 0 to 710 meters (0 to 2,300 feet) elevation.	Blooms January through May (annual herb)

Table A. Plant Taxa with Potentially Suitable Habitat in the Survey Area (Target Species)

Species	Habitat and Distribution	Activity Period
<i>Castela emoryi</i> Emory's crucifixion-thorn	Non-saline dry lakes and less frequently along washes (especially among basalt flows) or similar non-saline seasonally wet sites where water accumulates, at 85 to 770 meters (280 to 2,530 feet) elevation in desert scrub. Occurs rarely if at all on upper alluvial slopes or rocky slopes.	Blooms mostly June through July (deciduous shrub)
<i>Chamaesyce abramsiana</i> Abrams' spurge	Sandy areas of desert scrub below 1,000 meters (3,300 feet) elevation.	Blooms mostly September through November following late summer rains (annual herb)
<i>Ipomopsis effusa</i> Baja California ipomopsis	Only a single occurrence is known from California, consisting of two plants on sandy flat near a wash with smoke trees (<i>Psorothamnus spinosus</i>) and button brittlebush (<i>Encelia frutescens</i>) at 33 meters (110 feet) elevation near the Mexican border in Imperial County. Not seen after 1987. Probably a waif (an unusual species that does not become naturalized in the wild). In Mexico, occurs on gravelly flats and in pinyon woodland up to 2,000 meters (6,600 feet) elevation.	Blooms April through June (annual herb)
<i>Malperia tenuis</i> Brown turbans	Sandy places and rocky slopes in Sonoran Desert scrub at 15 to 335 meters (50 to 1,100 feet) elevation.	Blooms March through April (annual herb)
<i>Mentzelia hirsutissima</i> Hairy stickleaf	Rocky sites, especially coarse rubble and talus slopes, washes, and alluvial fans, in Sonoran Desert scrub at -5 to 800 meters (-15 to 2,600 feet) elevation.	Blooms March through May (annual herb)
<i>Nemacaulis denudata</i> var. <i>gracilis</i> Slender woolly-heads	Coastal dunes or desert dunes or sandy sites at -50 to 400 (560) meters (-160 to 1,300 [1,800] feet) elevation.	Blooms mostly April through May (annual herb)
<i>Pilostyles thurberi</i> Thurber's pilostyles	Sandy alluvial plains and sandstone talus in Sonoran Desert scrub at up to 365 meters (1,200 feet) elevation, where it is a parasite of <i>Psorothamnus emoryi</i> (and of <i>Psorothamnus polydenius</i> in Nevada).	Blooms at various times, but old flowers remain visible for a year or more (perennial parasitic herb)

Table B (attached) contains a list of the evaluated plant taxa that are not expected to occur within the survey area because of unsuitable habitat conditions or because the survey area is outside the range of the taxon. Reasons for excluding each taxon are provided.

METHODS

Survey methods, including determination of target species, timing of site visits, and field methods, were coordinated with Andrew Trouette of the BLM El Centro Field Office. The survey was conducted according to the BLM protocol by biologists qualified, and previously approved by the BLM, to conduct botanical surveys. The survey consisted of three site visits in 2010. The survey area (Figure 2) for the first two site visits was approximately 350 acres, but following refinement of the project design, the survey area was reduced to approximately 145 acres for the third site visit.

The first visit was March 22 from 1:30 to 5:15 p.m. and March 23 from 9:00 a.m. to 6:20 p.m., near the peak of the flowering season at the site. The second visit was April 29 from 11:00 a.m. to 4:30 p.m. and April 30 from 10:00 a.m. to 2:00 p.m., near the end of the flowering season. Both first and second survey visits were conducted by LSA biologists Sarah Barrera, Stanley Spencer, Dan Rosie, Jodi Ross, and Matthew Willis.

These visits overlapped the expected blooming periods of all target species except for Emory's crucifixion-thorn (*Castela emoryi*), Thurber's pilostyles, and Abram's spurge. Emory's crucifixion-thorn and Thurber's pilostyles can be readily identified outside of the blooming period. Abram's spurge (*Chamaesyce abramsiana*) is primarily an Arizona species that typically grows following summer precipitation, which in the project vicinity is frequently of insufficient quantity to promote much germination and growth of annuals. Most precipitation in this extremely arid area occurs in late fall and winter (The Weather Channel 2010). Based on its known distribution and dependence on summer or early fall rain, this species is unlikely to occur at the project site.

A third site visit to survey for Abram's spurge and other species dependent on summer or early fall rain was conducted at the direction of BLM on November 4 from 12:00 to 5:00 p.m. by LSA biologists Stanley Spencer, Dan Rosie, and Jaime Morales, following substantial rain in early October. The El Centro area had received approximately 1.6 inches of rain between August 27 and October 20, with most of it (about 1 inch) occurring on October 2 (National Oceanic and Atmospheric Administration 2010).

All survey personnel were approved by BLM prior to participating in the survey, had previous experienced conducting desert plant surveys or vegetation mapping in habitats similar to those on the project site, and were familiar with common species expected to be observed in the survey area. Herbarium specimens, photographs, and written descriptions were used to familiarize survey personnel with the appearances and identifying characteristics of each of the target species. Reference populations for Emory's crucifixion-thorn and Thurber's pilostyles were visited prior to the first site visit. For other target species, reference populations with habitat conditions similar to those on the project site were not available.

The survey was floristic in nature. All plant taxa observed were documented and identified at least to the taxonomic level required to determine rarity status. The entire respective survey area was surveyed during each of the three site visits by walking along transects that provided for 100 percent visual coverage and detection of the smallest target species. The distances between transects averaged 15 meters (50 feet) during the first and third site visits and 20 meters (65 feet) during the second visit.

SURVEY RESULTS AND DISCUSSION

A complete list of plant species observed during the survey, with associated habitat type, is provided in Table C (attached).

The *Psorothamnus spinosus* Alliance in Pinto Wash (Figure 2) is a "rare or unusual plant community" as defined in the BLM protocol. This plant community is within the spring survey area but is not within the fall survey area or the project area. A California Natural Community Field

Survey Form (attached) documenting the occurrence of this vegetation type within the spring survey area was submitted to the CNDDDB as required by the BLM protocol.

The intent of the third site visit was to survey for plants that had germinated as a result of rain in early October. Although several annual species had germinated following the October rain, all had previously been observed in greater abundance during the first or second site visits. Photographs of site conditions during the third site visit are included in Figure 3. Species that appeared to have germinated as a result of the October rain include manybristle chinchweed (*Pectis papposa*), cryptantha (*Cryptantha* sp.), Sahara mustard (*Brassica tournefortii*), desert sand verbena, browneyes (*Camissonia claviformis*), desert Indianwheat, common Mediterranean grass, and possibly desert palafox (*Palafoxia arida* var. *arida*).

One target species, Thurber's pilostyles, was found just outside the fall survey area (Figure 2; Figure 3, Photograph 4) during the third site visit, but was not found on the project site. This species is a short-lived perennial and a stem parasite of dyebush (*Psorothamnus emoryi*). It is not a special status plant (as defined in the BLM protocol) and is not considered sensitive, but is monitored by the CDFG and by the CNPS as a CNPS List 4 species. No other target or special status plant species were found during the survey. Only one individual of Thurber's pilostyles was found. Because its host plant is only sparsely distributed in the project vicinity, Thurber's pilostyles is expected to be sparsely distributed as well. Because Thurber's pilostyles is believed to be dioecious (individual plants do not have both male and female parts) and individuals are short-lived, the individual encountered is unlikely to reproduce or to be living at the time of project construction. The project location is within the known range of this species, and the species has been recorded from about 4 miles southwest of the project site at the intersection of Highway 98 and Pinto Wash (CDFG, CNDDDB, 2009b). A California Native Species Field Survey Form documenting the observation of this species during the survey is attached and was submitted to CNDDDB as required by the BLM protocol.

Given the habitat conditions and results of the plant survey, no special status plant species are expected to occur on the project site and no impacts to special status plant species are expected; hence no mitigation for impacts to special status plants is recommended.

REFERENCES CITED

Bureau of Land Management. 2009. *Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species*.

Bureau of Land Management. 1980. *California Desert Conservation Area Plan 1980 As Amended*.

California Department of Fish and Game, Natural Diversity Data Base. 2009a. *Special Vascular Plants, Bryophytes, and Lichens List* (April 2009 update). The Resources Agency, Sacramento, California.

California Department of Fish and Game, Natural Diversity Data Base. 2009b. *Rarefind 3* (version 3.1.0, dated November 4, 2009). The Resources Agency, Sacramento, California.

California Department of Fish and Game. 2007. *Department of Fish and Game, Biogeographic Data Branch, Vegetation Classification and Mapping Program, List of California Vegetation Alliances, October 22, 2007*. The Resources Agency, Sacramento, California.

Calflora. 2009. *Calflora: Information on California Plants for Education, Research and Conservation*. Berkeley, California. <http://www.calflora.org/> (Accessed: November, 2009).

National Oceanic and Atmospheric Administration. 2010. *National Weather Service*. Preliminary monthly climate data for Imperial. <http://www.weather.gov/climate/index.php?wfo=psr> (Accessed: December, 2010).

The Weather Channel. 2010. *Weather.com*. Monthly weather for El Centro. <http://www.weather.com/outlook/health/fitness/wxclimatology/monthly/graph/USCA0332> (Accessed: December, 2010).

PERSONS CONTACTED

Andrew Trouette, El Centro Field Office, Bureau of Land Management.

Andrew Sanders, Curator, Herbarium, University of California, Riverside (UCR).

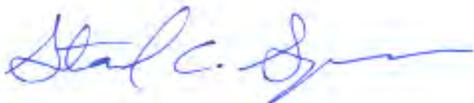
HERBARIA VISITED

University of California, Riverside (UCR).

Please do not hesitate to contact me if you require any additional information.

Sincerely,

LSA ASSOCIATES, INC.



Stanley C. Spencer, Ph.D.
Senior Biologist/Botanist

Attachments: Figure 1 – Regional Location
Figure 2 – Vegetation Map and Survey Results
Figure 3 – Site Photographs
Table B – Excluded Plant Taxa
Table C – Vascular Plant Species Observed
California Natural Community Field Survey Form (and map)
California Native Species Field Survey Form

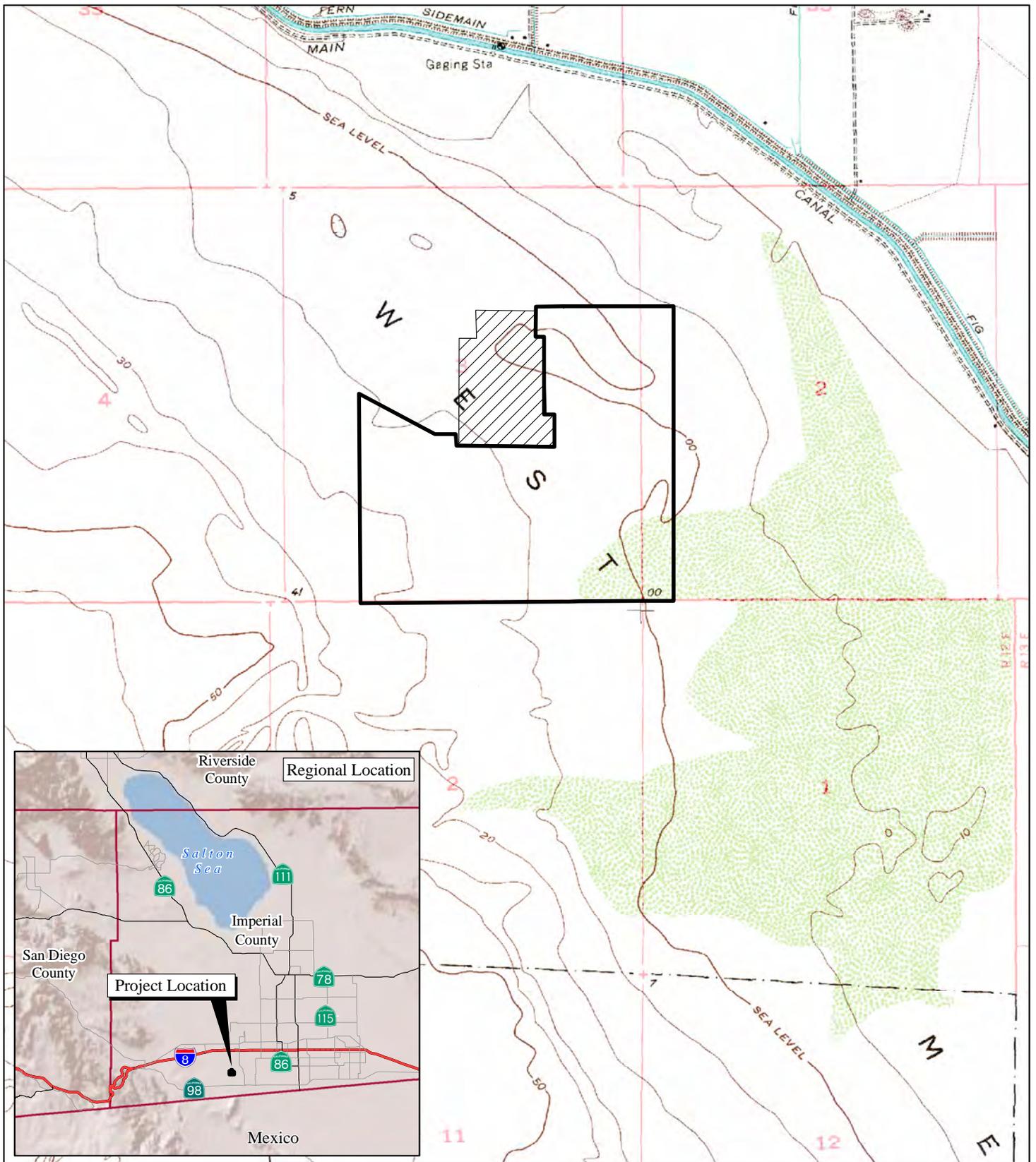
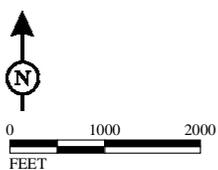


FIGURE 1

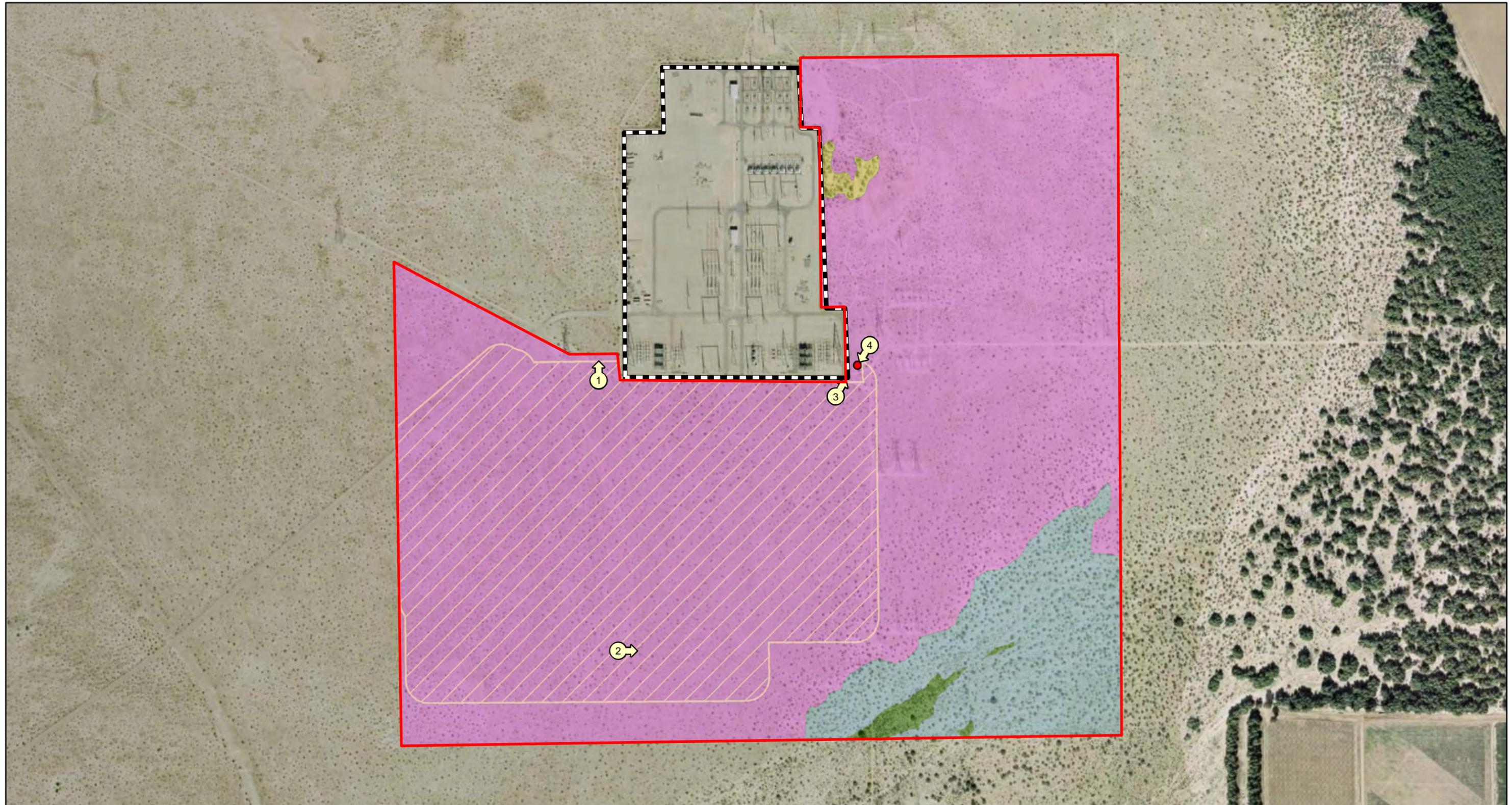
LSA

LEGEND

-  Survey Area
-  Existing Imperial Valley Substation (not a part)



*San Diego Gas & Electric Company
Ocotillo Sol Project
Imperial County, California
Regional Location Map*



L S A



0 300 600
FEET

SOURCE: Bing Maps (2008).

I:\SGE0905\Reports\Plant_Survey\fig2_Veg_Map.mxd (12/02/10)

LEGEND

- Spring Survey Area
- Fall Survey Area
- Existing SDG&E Imperial Valley Substation
- Photograph location and direction taken

Vegetation

- Tamarix aphylla* Semi-Natural Non-Native Stand
- Larrea tridentata* Alliance
- Larrea tridentata* - *Ambrosia dumosa* Alliance
- Psoralea spinosus* Alliance

- Thurber's pilostyles

FIGURE 2

San Diego Gas & Electric Company
Ocotillo Sol Project
Imperial County, California
Vegetation Map and Survey Results



PHOTOGRAPH 1: *View looking north, showing open area near north edge of fall survey area with recently germinated cryptantha and common Mediterranean grass (S. Spencer, 11/4/10).*



PHOTOGRAPH 2: *View of manybristle chinchweed, a native annual that typically blooms after summer rains (S. Spencer, 11/4/10).*



PHOTOGRAPH 3: *View of desert palafox, a native annual or short-lived perennial (S. Spencer, 11/4/10).*



PHOTOGRAPH 4: *View of dark brown flowers of Thurber's pilostyles, a parasitic plant, on stems of dyebush, found approximately 10 meters outside the fall survey area (S. Spencer, 11/4/10).*

LSA

FIGURE 3

San Diego & Electric Company
Ocotillo Sol Project
Imperial County, California
Site Photographs

Table B. Excluded Plant Taxa

Taxon	In BLM Table 3A?	Reason for Exclusion
<i>Agave utahensis</i> var. <i>eborispina</i>	Yes	1
<i>Arabis shockleyi</i>	Yes	1
<i>Arctomecon merriamii</i>	Yes	1
<i>Astragalus albens</i>	Yes	1
<i>Astragalus cimae</i> var. <i>cimae</i>	Yes	1
<i>Astragalus cimae</i> var. <i>sufflatus</i>	Yes	1
<i>Astragalus funereus</i>	Yes	1
<i>Astragalus jaegerianus</i>	Yes	1
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Yes	1
<i>Astragalus lentiginosus</i> var. <i>micans</i>	Yes	1
<i>Astragalus lentiginosus</i> var. <i>sesquimetrals</i>	Yes	1
<i>Astragalus magdalenae</i> var. <i>peirsonii</i>	Yes	2
<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	Yes	1
<i>Astragalus tricarinatus</i>	Yes	1
<i>Berberis nevinii</i>	Yes	2
<i>Brickellia knappiana</i>	Yes	1
<i>Bursera microphylla</i>	No	2
<i>Calliandra eriophylla</i>	No	3
<i>Calochortus excavatus</i>	Yes	1
<i>Calochortus striatus</i>	Yes	1
<i>Calystegia piersonii</i>	Yes	1
<i>Camissonia arenaria</i>	No	2
<i>Carnegiea gigantea</i>	No	2
<i>Caulanthus simulans</i>	Yes	1
<i>Caulostramina jaegeri</i>	Yes	1
<i>Chaenactis carphoclinia</i> var. <i>peirsonii</i>	No	2
<i>Chamaesyce (Euphorbia) platysperma</i>	Yes	3
<i>Chorizanthe</i> (special status species)	Yes	1
<i>Colubrina californica</i>	Yes	2
<i>Cordylanthus eremicus</i> ssp. <i>bernardinus</i>	Yes	1
<i>Coryphantha alversonii</i> (vivipara var. <i>alversonii</i>)	Yes	3
<i>Coryphantha vivipara</i> var. <i>rosea</i>	Yes	1
<i>Croton wigginsii</i>	Yes	4
<i>Cryptantha ganderi</i>	Yes	1
<i>Cylindropuntia munzii</i> (<i>Opuntia munzii</i>)	Yes	2

Table B. Excluded Plant Taxa

Taxon	In BLM Table 3A?	Reason for Exclusion
<i>Cylindropuntia xfosbergii</i> (<i>Opuntia bigelovii</i> var. <i>hoffmannii</i>)	Yes	2
<i>Cymopterus deserticola</i>	Yes	1
<i>Deinandra</i> (<i>Hemizonia</i>) <i>arida</i>	Yes	1
<i>Deinandra</i> (<i>Hemizonia</i>) <i>floribunda</i>	Yes	1
<i>Deinandra</i> (<i>Hemizonia</i>) <i>mohavensis</i>	Yes	1
<i>Ditaxis claryana</i>	No	2
<i>Ditaxis serrata</i> var. <i>californica</i>	Yes	2
<i>Dudleya saxosa</i> ssp. <i>saxosa</i>	Yes	1
<i>Echinocereus engelmannii</i> ssp. <i>munzii</i>	Yes	1
<i>Enceliopsis covillei</i>	Yes	1
<i>Enceliopsis nudicaulis</i>	Yes	1
<i>Ephedra funerea</i>	Yes	1
<i>Erigeron parishii</i>	Yes	1
<i>Eriogonum bifurcatulum</i>	Yes	1
<i>Eriogonum eremicola</i>	Yes	1
<i>Eriogonum gilmanii</i>	Yes	1
<i>Eriogonum kennedyi</i> var. <i>pinicola</i>	Yes	1
<i>Eriogonum microthecum</i> var. <i>panamintense</i>	Yes	1
<i>Eriogonum ovalifolium</i> ssp. <i>vineum</i>	Yes	1
<i>Eriogonum thornei</i> (<i>ericifolium</i> var. <i>thornei</i>)	Yes	1
<i>Eriogonum thornei</i> (<i>ericifolium</i>)	Yes	1
<i>Eriophyllum mohavense</i>	Yes	1
<i>Eryngium aristulatum</i> var. <i>parishii</i>	No	2
<i>Eucnide rupestris</i>	No	5
<i>Fimbristylis thermalis</i>	Yes	1
<i>Galium angustifolium</i> ssp. <i>bernardinus</i>	Yes	1
<i>Galium angustifolium</i> ssp. <i>borregoense</i>	Yes	1
<i>Galium hilendiae</i> ssp. <i>kingstoense</i>	Yes	1
<i>Galium hypotrichum</i> ssp. <i>tomentillum</i>	Yes	1
<i>Geraea viscida</i>	No	2
<i>Gilmania luteola</i>	Yes	1
<i>Glossopetalon pungens</i> (includes <i>Forsellesia pungens</i> var. <i>glabra</i>)	Yes	1
<i>Grindellia fraxino-pratensis</i>	Yes	1
<i>Helianthus niveus</i> ssp. <i>tephrodes</i>	Yes	2
<i>Herissantia crispa</i>	No	2

Table B. Excluded Plant Taxa

Taxon	In BLM Table 3A?	Reason for Exclusion
<i>Hulsea mexicana</i>	No	2
<i>Hulsea vestita</i> ssp. <i>inyoensis</i>	Yes	1
<i>Hymenoxys odorata</i>	No	2
<i>Imperata brevifolia</i>	No	6
<i>Ipomopsis tenuifolia</i>	No	2
<i>Ivesia patellifera</i> (<i>Potentilla patellifera</i>)	Yes	1
<i>Koeberlinia spinosa</i> ssp. <i>tenuispina</i>	No	2
<i>Lepidium flavum</i> var. <i>filipense</i>	Yes	1
<i>Linanthus maculatus</i>	Yes	1
<i>Lotus haydonii</i>	No	2
<i>Lupinus excubitus</i> var. <i>medius</i>	Yes	3
<i>Lupinus holmgrenianus</i>	Yes	1
<i>Lycium parishii</i>	No	2
<i>Marina orcuttii</i> var. <i>orcuttii</i>	Yes	1
<i>Maurandya petrophila</i>	Yes	1
<i>Mentzelia tridentata</i>	No	3
<i>Mimulus rupicola</i>	Yes	1
<i>Monardella robisonii</i>	Yes	1
<i>Nama stenocarpum</i>	No	4
<i>Nitrophila mohavensis</i>	Yes	1
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	Yes	1
<i>Opuntia phaeacantha</i> var. <i>mohavensis</i>	Yes	1
<i>Opuntia wigginsii</i>	Yes	2
<i>Palafoxia arida</i> var. <i>gigantea</i>	No	2
<i>Penstemon calcareus</i>	Yes	1
<i>Penstemon californicus</i>	Yes	1
<i>Penstemon stephensii</i>	Yes	1
<i>Perityle inyoensis</i>	Yes	1
<i>Perityle villosa</i>	Yes	1
<i>Petalonyx thurberi</i> ssp. <i>gilmanii</i>	Yes	1
<i>Phacelia amabilis</i>	Yes	1
<i>Phacelia anelsonii</i>	Yes	1
<i>Phacelia mustelina</i>	Yes	1
<i>Phacelia novemmillensis</i>	Yes	1
<i>Pholisma</i> (<i>Ammobroma</i>) <i>sonorae</i>	Yes	4

Table B. Excluded Plant Taxa

Taxon	In BLM Table 3A?	Reason for Exclusion
<i>Puccinellia parishii</i>	Yes	1
<i>Salvia greatae</i>	Yes	2
<i>Sclerocactus polyancistrus</i>	Yes	1
<i>Selaginella eremophila</i>	No	3
<i>Senna covesii</i>	No	2
<i>Sphaeralcea rusby ssp. eremicola</i>	Yes	1
<i>Tetracoccus ilicifolius</i>	Yes	1
<i>Teucrium cubense ssp. depressum</i>	No	5
<i>Xylorhiza (Machaeranthera) orcuttii</i>	Yes	2
<i>Xylorhiza cognata</i>	No	4
<i>Zeltnera (Centaurium) namophila(um)</i>	Yes	1

- 1: Taxon does not occur in Imperial County.
2: Site is well outside expected geographic range of the taxon.
3: Site is outside expected geographic and elevational range of the taxon.
4: Site is outside expected geographic range of the taxon, and habitat conditions on site are unsuitable.
5: Site is outside expected elevational range of the taxon, and habitat conditions on site are unsuitable.
6: Habitat conditions on site are unsuitable.

Table C: Vascular Plant Species Observed

Scientific Name	Common Name	Vegetation Community
PINOPHYTA	GYMNOSPERMS	
Ephedraceae	Ephedra family	
<i>Ephedra trifurca</i>	Longleaf jointfir	LA, P
MAGNOLIOPHYTA:	DICOT FLOWERING	
MAGNOLIOPSIDA	PLANTS	
Apodanthaceae	Stemsucker family	
<i>Pilostyles thurberi</i>	Thurber's pilostyles	LA
Asteraceae	Sunflower family	
<i>Ambrosia dumosa</i>	Burrobush	LA, L
<i>Ambrosia salsola</i>	Burrobrush	L
<i>Baileya pauciradiata</i>	Laxflower	LA, L
<i>Chaenactis stevioides</i>	Steve's dustymaiden	LA
<i>Encelia farinosa</i>	Brittlebush	P
<i>Encelia frutescens</i>	Button brittlebush	LA, P
<i>Lactuca serriola</i> *	Prickly lettuce	LA
<i>Logfia</i> sp.	Cottonrose	LA
<i>Malacothrix glabrata</i>	Desert dandelion	L
<i>Palafoxia arida</i> var. <i>arida</i>	Desert palafox	LA
<i>Pectis papposa</i>	Manybristle chinchweed	T
<i>Psathyrotes ramosissima</i>	Velvet turtleback	LA
<i>Rafinesquia neomexicana</i>	Desert chicory	LA
<i>Sonchus oleraceus</i> *	Common sow thistle	T
<i>Stephanomeria exigua</i>	Small wreath-plant	LA
Boraginaceae	Borage family	
<i>Cryptantha angustifolia</i>	Panamint cryptantha	LA
<i>Cryptantha maritima</i>	Guadalupe cryptantha	LA, L
<i>Cryptantha micrantha</i>	Redroot cryptantha	LA
<i>Pectocarya heterocarpa</i>	Mixed-nut pectocarya	LA
<i>Tiquilia palmeri</i>	Palmer's crinklemat	LA
<i>Tiquilia plicata</i>	Fanleaf crinklemat	LA
Brassicaceae	Mustard family	
<i>Brassica tournefortii</i> *	Sahara mustard	LA
<i>Dithyrea californica</i>	California shieldpod	LA, L
<i>Lepidium lasiocarpum</i>	Shaggyfruit pepperweed	LA, T
<i>Streptanthella longirostris</i>	Streptanthella	LA
Cactaceae	Cactus family	
<i>Cylindropuntia echinocarpa</i>	Silver cholla	L
<i>Ferocactus cylindraceus</i>	California barrel cactus	L

Table C: Vascular Plant Species Observed

<i>Opuntia basilaris</i> var. <i>basilaris</i>	Beavertail pricklypear	LA
Caryophyllaceae	Pink family	
<i>Achyronychia cooperi</i>	Onyxflower	LA, L, P
Chenopodiaceae	Saltbush family	
<i>Atriplex canescens</i>	Fourwing saltbush	L
<i>Atriplex polycarpa</i>	Cattle saltbush	L
<i>Chenopodium murale</i> *	Nettleleaf goosefoot	LA, T
Euphorbiaceae	Spurge family	
<i>Chamaesyce polycarpa</i>	Smallseed sandmat	LA
<i>Croton californicus</i>	California croton	LA
<i>Stillingia spinulosa</i>	Annual toothleaf	L
Fabaceae	Pea family	
<i>Acacia greggii</i>	Catclaw	L
<i>Lupinus arizonicus</i>	Arizona lupine	L
<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Honey mesquite	LA
<i>Psoralea emoryi</i>	Dyebush	LA
<i>Psoralea schottii</i>	Schott's dalea	P
<i>Psoralea spinosa</i>	Smoketree	P
Fouquieriaceae	Ocotillo family	
<i>Fouquieria splendens</i>	Ocotillo	LA
Hydrophyllaceae	Waterleaf family	
<i>Emmenanthe penduliflora</i>	Whispering bells	L
<i>Nama hispidum</i>	Bristly nama	L
Loasaceae	Loasa family	
<i>Petalonyx thurberi</i> ssp. <i>thurberi</i>	Thurber's sandpaper plant	P
Nyctaginaceae	Four-o'clock family	
<i>Abronia villosa</i> var. <i>villosa</i>	Desert sand verbena	LA
Onagraceae	Evening primrose family	
<i>Camissonia claviformis</i>	Browneyes	LA
<i>Camissonia californica</i>	Mustard-like evening primrose	LA
<i>Oenothera deltoidea</i>	Birdcage evening primrose	LA, L
Plantaginaceae	Plantain family	
<i>Plantago ovata</i>	Desert Indianwheat	LA
Polemoniaceae	Phlox family	
<i>Loeseliastrum schottii</i>	Schott's calico	LA, L
Polygonaceae	Buckwheat family	

Table C: Vascular Plant Species Observed

<i>Chorizanthe brevicornu</i>	Brittle spineflower	LA
<i>Chorizanthe rigida</i>	Devil's spineflower	LA
<i>Eriogonum deflexum</i>	Flatcrown buckwheat	LA
<i>Eriogonum thomasii</i>	Thomas' buckwheat	LA
Resedaceae	Mignonette family	
<i>Oligomeris linifolia</i>	Lineleaf whitepuff	LA
Solanaceae	Nightshade family	
<i>Lycium cf. andersonii</i>	Anderson's desert thorn	L
Tamaricaceae	Tamarisk family	
<i>Tamarix aphylla</i> *	Athel	L, T
<i>Tamarix ramosissima</i> *	Mediterranean tamarisk	L, T
Zygophyllaceae	Caltrop family	
<i>Larrea tridentata</i>	Creosote bush	LA, L, P, T
Liliaceae	Lily family	
<i>Agave desertii</i>	Desert agave	P
<i>Hesperocallis undulata</i>	Desert lily	LA
Poaceae	Grass family	
<i>Bouteloua barbata</i>	Sixweeks grama	T
<i>Schismus barbatus</i> *	Common Mediterranean grass	LA, T

* Non-native

LA = *Larrea tridentata* – *Ambrosia dumosa* Alliance

L = *Larrea tridentata* Alliance

P = *Psoralea argophylla* Alliance

T = *Tamarix aphylla* Semi-Natural Non-Native Stand

California Natural Community Field Survey Form

Mail to:

Veg. Classification and Mapping
California Dept. of Fish and Game
1807 13th Street #202
Sacramento, CA 95911
(916) 323-1618

For office use only	
Source Code _____	Quad Code _____
Community Code _____	Occ # _____
Map Index # _____	Update Y _____ N _____

Please provide as much of the following information as you can. Please attach a map (if possible, based on the USGS 7.5 minute series) showing the site's location and boundaries. Use the back if needed.

Community name: Psorothamnus spinosus Alliance

Reporter: Stanley Spencer E-mail Address: stan.spencer@LSA-Assoc.com Phone 951-781-9310

Affiliation and Address LSA Associates, Inc. 1500 Iowa Ave., Suite 200, Riverside, CA 92507

Date of field work: 4 Nov 2010 County: Imperial

Location (**Please attach/submit map**):

See purple polygon on attached map.

Quad name: Mount Signal T 16.5S R 12E se $\frac{1}{4}$ of se $\frac{1}{4}$ sec 5 Meridian San Bernardino

UTM Zone 11 Northing 3 6 1 9 7 6 9 Easting 6 2 0 6 9 7 Datum NAD83 WGS84 NAD27

Landowner/Manager: BLM Photographs: Slide Print Digital

Elevation: 10 ft Aspect: _____ Slope (indicate % or °) _____ Drainage: _____

Site acreage: 3 acres

Evidence of disturbance or threats:

None

Current land use: None

Substrate/Soils:

Sandy wash.

General description of community:

Smoketree community in desert wash.

Any Special Plants or Animals present:

Successional status/Evidence of regeneration of dominant taxa:

Overall site quality: Excellent Good Fair Poor Comments (below):

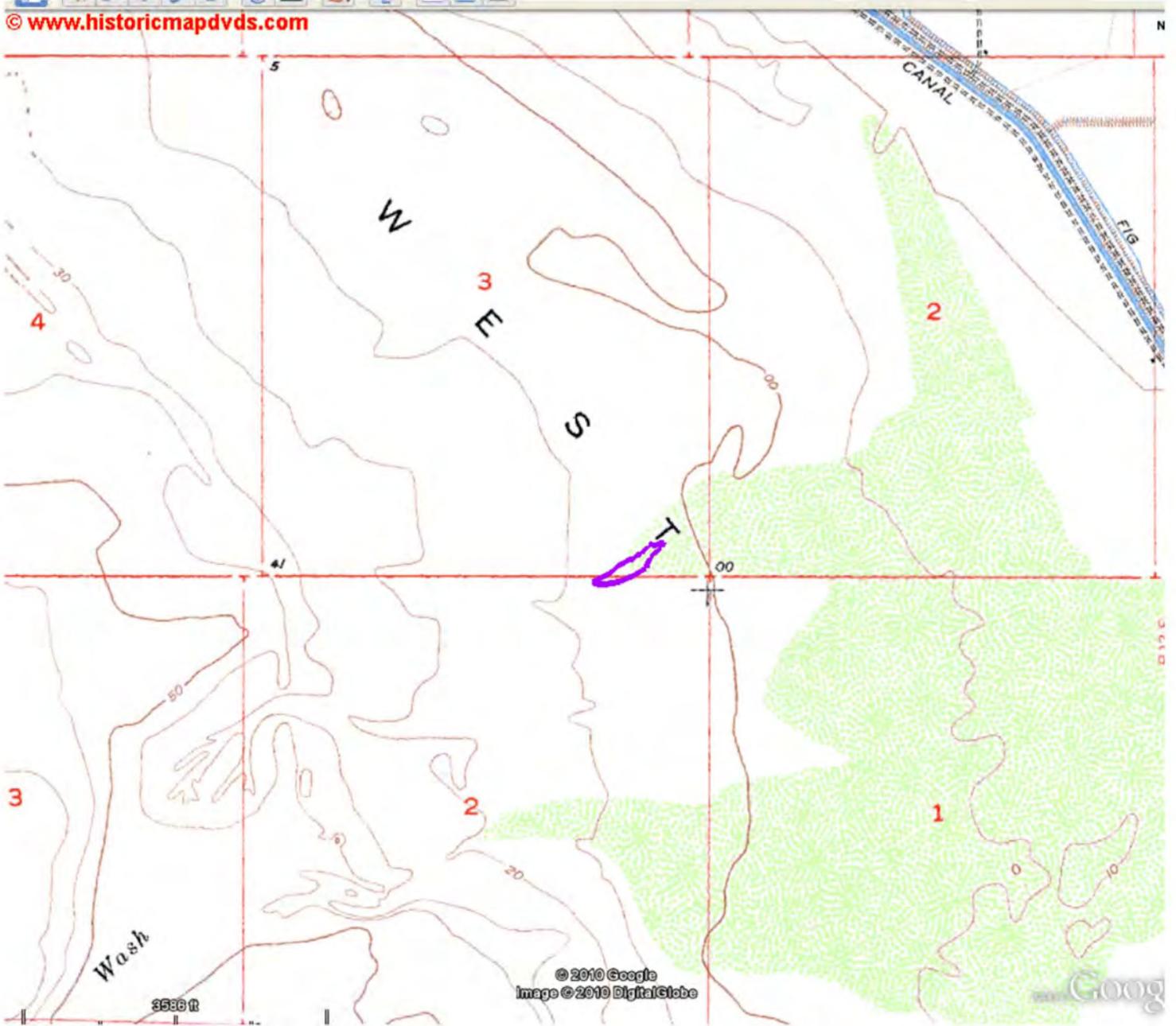
Basis for report: Remote image Binocular/Telescopic survey Windshield survey Brief walk-thru

Detailed survey Other

Relevé: In the space below, indicate each species cover % within the following growth form categories:

<u>Trees</u>	<u>Shrubs</u> <u>Psorothamnus spinosus 20%</u>	<u>Herbs/Graminoids</u> <u>Cryptantha sp. 2%</u> <u>Schismus barbatus 5%</u> <u>Abronia villosa var. villosa 2%</u>
--------------	---	--

Continue on back if needed. Thank you for your contribution.



Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811

Fax: (916) 324-0475 email: CNDDDB@dfg.ca.gov

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work (mm/dd/yyyy): 11/04/2010

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: Pilostyles thurberi

Common Name: Thurber's pilostyles

Species Found? Yes No _____ If not, why? _____

Total No. Individuals 1 Subsequent Visit? yes no

Is this an existing NDDDB occurrence? _____ no unk.
Yes, Occ. # _____

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Stanley Spencer

Address: 1500 N. Iowa Ave, Riverside, CA 92507

E-mail Address: stan.spencer@lsa-assoc.com

Phone: (951) 781-9310

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

adults # juveniles # larvae # egg masses # unknown
wintering breeding nesting rookery burrow site other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

County: Imperial Landowner / Mgr.: BLM

Quad Name: Mount Signal Elevation: 7 feet

T 16.5S R 12E Sec 3, ne ¼ of se ¼, Meridian: H M S Source of Coordinates (GPS, topo. map & type): _____

T _____ R _____ Sec _____, _____ ¼ of _____ ¼, Meridian: H M S GPS Make & Model Magellan MobileMapper 6

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy 1m meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 620616 m E, 3620462 m N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Larrea tridentata – Ambrosia dumosa Alliance, dominated by Larrea tridentata, Ambrosia dumosa, Cryptantha angustifolia, Plantago ovata, and Schismus barbatus. Open sandy desert scrub. On Psorothamnus emoryi.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use:

Visible disturbances:

Threats: Only one individual seen. Unlikely to reproduce due to dioecy and isolation from other individuals.

Comments: Plant was in post-flower stage. Host plant (P. emoryi) is very sparsely distributed in vicinity.

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
 Compared with specimen housed at: _____
 Compared with photo / drawing in: <http://waynesword.palomar.edu/ploct98.htm>
 By another person (name): _____
 Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no