

## **Appendix A: Plan of Operations**

**SIXTH REVISED DRAFT**  
**SMP GOLD CORP.**  
**EXISTING ORO CRUZ PIT AREA**  
**EXPLORATION PLAN OF OPERATIONS**  
**BLM CASE FILE NUMBER CACA-059124**

**Prepared for:** Bureau of Land Management

**Prepared by:** SMP Gold Corp.

**Date:** Sixth Revision, January 30, 2023

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## **I. INTRODUCTION AND BACKGROUND**

SMP Gold Corp. (SMP) proposes mineral exploration activities at the Oro Cruz Pit Area (the Project) within lands administered by the Bureau of Land Management (BLM), northwest of Yuma, Arizona, in Imperial County, California. The Project is located on previously mined BLM lands within Township 15 South, Range 20 East, Sections 1, 2, 12 and 13, and Township 15 South, Range 21 East, Section 6, 7 and 18 (the Project Area, **Figures 1 and 2**) that are managed by the El Centro Field Office. The Project Area has been previously disturbed by mining activities. Current surrounding land uses include prospecting and recreation.

Activities would be conducted in accordance with BLM regulations published in the Code of Federal Regulations (CFR) at 43 CFR part 3809 (BLM 2016). Pursuant to 43 CFR 3809.21 and 3809.301, the Project would result in minor surface reworking of previously mined and disturbed areas, and measures would be taken to prevent unnecessary or undue degradation during Project operations. The Project would comply with the performance standards in 43 CFR 3809.420 and other Federal and state laws related to environmental protection and protection of cultural resources, and the Project would attain the stated level of protection and reclamation required by specific laws in the California Desert Conservation Area. The Project Area occurs within the Picacho Area of Critical Environmental Concern (ACEC) as designated under the Desert Renewable Energy Conservation Plan, and thus requires a BLM Plan of Operations.

The Project is described in this Draft Exploration Plan of Operations (Plan).

## **2. CLAIMANT AND OPERATOR INFORMATION**

### **Claimant:**

Lincoln Gold US Corp.  
912 N. Division Street  
Carson City, Nevada 89703

ADGIS, Inc.  
210 South Rock Blvd.  
Reno, Nevada 89502

### **Operator:**

SMP Gold Corp.  
912 N. Division Street  
Carson City, Nevada 89703

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**Operator Employer Identification Number:**



**Contact:**

David Tupper  
Vice President - Exploration  
Phone: 604-802-0334  
Email: david@smp.gold

**Drilling Contractor:**

To be determined

**Subject Claims:**

See Table 1.

### **3. PROJECT AREA DESCRIPTION**

The Project Area has been previously disturbed by significant mining activities. Current surrounding land uses include prospecting and recreation. The Tumco Historic Mine is a historic and recreational area managed by the BLM for uses such as hiking, prospecting, wildlife viewing, and photography within western portions of the Project Area.

Soils on the site vary between rocky, hard-packed areas similar to desert pavement to pockets of loose sand. Soils in and adjacent to the existing Oro Cruz mine site are disturbed. Within the Project Area, elevations range from 600 feet (ft) above sea level (asl) to 800 ft asl. Vegetation within the Project Area is sparse consisting of primarily Creosote Bush Series, and Sonoran Creosote Scrub (Brown and Lowe 1994); dominant plant species include creosote bush (*Larrea tridentata*), burro bush (*Ambrosia dumosa*) and numerous annual and perennial scrubs and grasses (Tetra Tech 2011).

The Project Area occurs within the Picacho ACEC. The BLM's goals for the management of this ACEC are to enhance, protect and preserve the cultural and biological resources while providing compatible recreational opportunities; and to maintain desert tortoise habitat connectivity between the Chuckwalla Desert Wildlife Management/ACEC/Critical Habitat Units and high value climate refugia for wildlife (BLM 2016).

### **4. PLANNED EXPLORATION PROGRAM**

The Project consists of using existing access roads, constructing approximately 10,410 ft (2.0 miles) of existing road improvements, approximately 6.2 miles of new 12-foot-wide temporary exploration drilling access road, up to 8 helicopter landing pads, and 65 drill pads to support exploration in seven Drill Areas; and constructing approximately 9,640 linear ft (1.8 miles) of new, 15-foot-wide access road and 2.8-acre staging area for access to the Oro Cruz Portal on BLM lands (**Figures 2, 3a and**

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**3b).** The 2.8-acre staging area at the Oro Cruz Portal would be used for exploration within the proposed Drill Areas and underground mine area and resources. The area would house a 1,000-gallon diesel fuel tank and fueling station; helicopter landing area with 300-gallon Jet fuel tank and refueling station; two diesel-powered generators (125 kW or equivalent); two portable compressors (375 Series or equivalent); parking for access to the underground mine; small office and dry shop; and laydown areas for exploration drilling (**Figure 4**). Access to the portal staging area would be gated to prevent public access during Project implementation and reclamation.

#### **4.1. SCHEDULE OF ACTIVITIES**

The Project is proposed to begin upon completion of all BLM and Imperial County coordination, permitting and bonding. The Project mobilization, road construction, drilling, and borehole abandonment would be completed within 12 to 24 months. Activities at the Oro Cruz Mine Portal and project drilling activities in Drill Area 1 would be implemented first. Drilling activities potentially would be completed in up to two drill areas at once. Drill areas would be potentially revisited a second and third time based on the findings. Project reclamation would be completed concurrently for exploration drilling activities and monitoring for the success of reclamation of those areas would be completed within 5 years of Project implementation. Activities at the portal staging area and access route for underground investigations may extend beyond the 12- to 24- month exploration activities; but reclamation and monitoring of those areas would also be completed within 5 years of Project implementation.

#### **4.2. ACCESS**

Existing access roads would be used to the extent possible but some new access roads would be required across BLM land (**Figures 2 and 3a-3h**). The existing access routes that would be used are BLM-authorized routes. The proposed drill sites and new access roads would be mostly located within previously mined and disturbed areas. Interstate 8 and Ogilby Road (State Route 34) and Gold Rock Ranch Road are the primary roads that would be used for access (**Figures 2 and 3a**). Drilling equipment would be trucked to one of two truck unload points and then would be mobilized to the Drill Areas within the Project Area (**Figures 2 and 3a**). Equipment would be unloaded from low boys onto the existing road at the unload points and no improvements are needed to accommodate the unloading of equipment.

Access to the drill pads would be gained via existing and new roadways and via helicopter (AStar AS350 B2 or similar) from the Yuma Airport. The exploration drilling aspects of the Project would require approximately 10,410 ft (2.0 miles) of existing road improvements; approximately 32,740 ft (6.2 miles) of new temporary access road construction; and the construction of up to 8 helicopter landing pads (**Figure 2 and 3a-3h**). These new access roads would be used strictly for Project support vehicles to access the exploration Drill Areas, and they would be signed as having limited access.

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The helicopter used for access to up to 8 drill pads would only be flown during daylight hours. The helicopter would be used to transport the drilling equipment needed during drilling operations for up to ten (10) trips per day for drilling crew member access and delivery of water, fuel, and drilling supplies. Drilling operations would be conducted at each of the sites for 4 to 8 days, therefore a helicopter would be in use on the project for up to 64 days. The helicopter would fly from Yuma Airport, approximately 20 miles east of the Project. The flight to and from the Project would be approximately 15 minutes in duration. An additional designated helicopter landing and refueling area would be provided at the 2.8-acre portal staging area.

Access to the Oro Cruz Portal would require the construction of 9,640 linear ft (1.8 miles) of new 15-foot-wide road. The road would be secured from unauthorized access for the duration of activity at the portal staging area while assuring access by BLM staff. A gate would be placed across the road accompanied by proper deterrence on either side of the gate (i.e. fence, berm, or large boulder).

Reclamation would be implemented at the 2.8-acre portal staging area and all equipment would be removed within the 5-year reclamation monitoring period. The portal staging area would be secured with chain link fence and razor wire and locked during brief periods of non-operation.

Road construction would be conducted using a D8 Dozer (or equivalent). Vegetation disturbance would be avoided to the maximum extent possible. No maintenance is planned for improved existing roads, as they will only be used for 12 to 24 months during active drilling and then would be reclaimed. Improvements would require selected stretches of existing access road to be bladed and cleared of vegetation. Most of the existing roads in the Project Area are about 6 ft wide, so it is assumed that road improvements would require approximately 6 ft of additional disturbance.

New access roads for exploration drilling would not disrupt the surface except where necessary to gain safe access. These roads would be used temporarily for access to the drill sites and would require a 12-foot width for access of drilling equipment.

Where needed to restrict access to Drill Areas 1 and 6, barriers constructed of onsite materials from areas disturbed as part of the Project would be installed to prevent unauthorized vehicular traffic from interfering with the reclamation of access roads and signs would be posted indicating these roads would be for authorized use only. The conceptual locations of the planned safety barriers (or berms) are depicted in **Figures 3b and 3g**. Berms would be 6 ft in height and placed along new access routes to prevent the public from accessing the Drill Areas. Gold Rock Ranch Road is gated at its intersection with Tumco Wash, so that gate will serve as the safety barrier to Drill Areas 2, 3, 4, 5, and 7. Road fill will be stabilized and maintained during and following any construction to prevent any erosion.

#### **4.3. VEHICLES AND EQUIPMENT**

The proposed activities would be conducted using the following equipment (or similar):

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- AStar AS350 B2 Helicopter or similar (size = 40 by 11 ft; weight ~ 2,600 lbs)
- LF-90D – Boart Longyear track-mounted drill rig (up to two rigs; size = 12 by 20 ft; weight ~ 18,000 lbs)
- Pipe truck (size = 10 by 35 ft; weight ~ 35,000 lbs)
- CAT® bulldozer (size = D8, weight ~80,000 lbs)
- Track hoe (weight ~30,000 lbs)
- Portable Water Tank (2,000 gallon; weight ~400 lbs)
- Diesel Fuel Tank (1,000 gallon; weight ~1,500 lbs)
- Above-Ground Jet fuel tank (300 gallon; weight ~500 lbs)
- Excavator (Size = 200; weight ~52,000 lbs)
- Water trucks (two 1,000 gallon; weight ~50,000 lbs each)
- Generators associated with drill rig (one 125 kW) and Oro Cruz Portal Staging Area (two 125 kW; weight ~13,000 lbs each)
- Portable compressors (two 375 Series; weight ~4,500 lbs each)
- Support vehicles (approximately five one-ton vehicles)

#### **4.4. DISTURBANCES ON PREVIOUSLY MINED LANDS**

The access routes will be used by a track-mounted drill rig and support vehicles. The drill pads will consist of an approximately 60-foot by 40-foot area that will be cleared to hold the drilling collar and sumps for drilling mud (wastewater and fluid), along with all drilling equipment and personnel during construction (**Figure 5**). The sumps would be approximately 12 ft by 12 ft and 6 ft deep, sloped approximately 2:1 on one side to allow for wildlife access out of the sump, if needed.

Clearing activities would be conducted with a bulldozer, track hoe and hoe ram. The total surface disturbance for the proposed activities is estimated at 20.5 acres on BLM lands (**Table 1**).

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**Table I. Project Estimated Disturbance Area**

Activity Area	Claims (BLM Serial No.)	Description of Activity	Estimated Impact by Activity (square feet)	Estimated Impact by Activity (Acres)	Estimated Impact Per Drill Area (Acres)
Drill Area 1	Hercules 7 (CAMC-79795)	Exploration Reverse Circulation (RC) or core drilling to be conducted within 14 60-by-40-ft drill sites (Accessed via Existing and New Roads)	33,600	0.8	1.9
	Hercules 8 (CAMC-79796)	Exploration core drilling to be conducted within 2 60-by-40-ft drill sites (Accessed via Helicopter)	4,800	0.1	
	Hercules 9 (CAMC-79797)	Approximately 3,500 linear ft of 12-foot-wide New Temporary Exploration Drilling Access Road	42,000	1.0	
Drill Area 2	Hercules 11 (CAMC-79799)	Exploration RC or core drilling to be conducted within 13 60-by-40-ft drill sites (Accessed via Existing and New Roads)	31,200	0.7	3.8
	Hercules 12 (CAMC-79800)	Exploration core drilling to be conducted within 2 60-by-40-ft drill sites (Accessed via Helicopter)	4,800	0.1	
	Hercules 28 (CAMC-79816)	2 Helicopter Landing Pads (50-by-50-ft area)	5,000	0.1	
	Hercules 29 (CAMC-79817)	Approximately 10,500 linear ft of 12-foot-wide New Temporary Exploration Drilling Access Road	126,000	2.9	
Drill Area 3	Hercules 30 (CAMC-79818)	Exploration RC or core drilling to be conducted within 7 60-by-40-ft drill sites (Accessed via Existing and New Roads)	16,800	0.4	1.8
	Hercules 53 (CAMC-79818)	Exploration core drilling to be conducted within 3 60-by-40-ft drill sites (Accessed via Helicopter)	7,200	0.2	
	OC 11 (CAMC-296330)	3 Helicopter Landing Pads (50-by-50-ft area)	7,500	0.2	
	SMP 1 (Not staked yet)	Approximately 3,500 linear ft of 12-foot-wide New Temporary Exploration Drilling Access Road	42,000	1.0	
	SMP 2 (Not staked yet)				

**Table I. Project Estimated Disturbance Area**

<b>Activity Area</b>	<b>Claims (BLM Serial No.)</b>	<b>Description of Activity</b>	<b>Estimated Impact by Activity (square feet)</b>	<b>Estimated Impact by Activity (Acres)</b>	<b>Estimated Impact Per Drill Area (Acres)</b>
Drill Area 4	OC 13 (CAMC-296332) OC 14 (CAMC-296333) OC 15 (CAMC-296334)	Exploration RC or core drilling to be conducted within 4 60-by-40-ft drill sites (Accessed via Existing and New Roads)	9,600	0.2	1.2
	Hercules 32 (CAMC-79820) Hercules 33 (CAMC-79821)	Approximately 3,500 linear ft of 12-foot-wide New Temporary Exploration Drilling Access Road	42,000	1.0	
Drill Area 5	Hercules 26 (CAMC-79814) Hercules 27 (CAMC-79815)	Exploration RC or core drilling to be conducted within 2 60-by-40-ft drill sites (Accessed via Existing and New Roads)	4,800	0.1	1.2
		Exploration core drilling to be conducted within 3 60-by-40-ft drill sites (Accessed via Helicopter)	7,200	0.2	
		3 Helicopter Landing Pads (50-by-50-ft area)	7,500	0.2	
		Approximately 2,700 linear ft of 12-foot-wide New Temporary Exploration Drilling Access Road	32,400	0.7	
Drill Area 6	Hercules 6 (CAMC-79794) OC 55 (CAMC-297374) OC 57 (CAMC-297376) OC 58 (CAMC-297377) OC 59 (CAMC-297378)	Exploration RC or core drilling to be conducted within 5 60-by-40-ft drill sites (Accessed via new access road)	12,000	0.3	0.8
	OC 60 (CAMC-297379) OC 61 (CAMC-297380) OC 62 (CAMC-297381)	Approximately 1,800 linear ft of 12-foot-wide New Temporary Exploration Drilling Access Road	21,600	0.5	

**Table I. Project Estimated Disturbance Area**

<b>Activity Area</b>	<b>Claims (BLM Serial No.)</b>	<b>Description of Activity</b>	<b>Estimated Impact by Activity (square feet)</b>	<b>Estimated Impact by Activity (Acres)</b>	<b>Estimated Impact Per Drill Area (Acres)</b>
Drill Area 7	Hercules 10 (CAMC-79798) Hercules 11 (CAMC-79799) Hercules 12 (CAMC-79800)	Exploration RC or core drilling to be conducted within 10 60-by-40-ft drill sites (Accessed via Existing and New Roads)	24,000	0.6	2.5
	OC 48 (CAMC-296367) OC 49 (CAMC-296368)	Approximately 7,000 linear ft of 12-foot-wide New Temporary Exploration Drilling Access Road	84,000	1.9	
Existing Access Roads (Improvements Required)	SMP 1 (Not staked yet) SMP 2 (Not staked yet) OC 9 (CAMC- 296328) OC 13 (CAMC-296332) OC 14 (CAMC-296333) Hercules 10 (CAMC-79798) Hercules 11 (CAMC-79799) Hercules 12 (CAMC-79800) Hercules 26 (CAMC-79814) Hercules 55 (CAMC-79843) Hercules 31 (CAMC-79819)	Approximately 10,410 ft (2.0 miles) of existing road improvements; Assumes an additional 6 ft of disturbance would be added to the width of the existing roads.	62,460	1.4	NA
New Access to Oro Cruz Portal	See Drill Area 6 OC 64 (CAMC-297383) OC 66 (CAMC-297385) OC 68 (CAMC-297387) OC 93 (CAMC-297934)	Approximately 9,640 linear ft (1.8 miles) of 15-foot-wide New Portal Access Road	144,600	3.3	NA
Oro Cruz Portal Staging Area	Hercules 7 (CAMC-79795) Hercules 8 (CAMC-79796)	Access, fueling station, staging and parking to support the exploration of the underground resource accessible through the Oro Cruz Portal  Approximately 2.8-acre staging area in at the entrance of the Oro Cruz Portal	121,970	2.8	NA
<b>TOTAL</b>			<b>895,030</b>	<b>20.5</b>	

#### **4.5. DRILLING ACTIVITY**

Sixty-five (65) boreholes would be completed using reverse circulation or core techniques. The boreholes would be placed within seven Drill Areas (depicted in **Figures 2 and 3a-3h**). The anticipated maximum depth for the boreholes is approximately 800 ft. Drilling would be accomplished with a track-mounted rig. Any water encountered or generated by drilling will be fully contained within the drill sumps and removed, if required, to be recirculated for use in the drilling process or hauled away. The sumps will be backfilled once all water is evaporated.

A drill rig would operate on a 12- or 24-hour-per-day schedule (12 hours per shift) for 12 to 24 months. Once a hole is completed, the drillers would abandon the hole before moving to the next hole. There would only be two drill rigs in operation at a time within the Project Area.

Each drill site requires an approximately 60-by-40-foot drill pad that will encompass approximately 0.06 acres of disturbed area. A typical layout of a road-accessed drill site is provided in **Figure 5**. The drill sites would include sumps for drilling water and muds along with all drilling equipment and personnel during construction, portable toilet, and additional parking areas for support trucks and a water truck. The sumps would be approximately 12 ft by 12 ft and 6 ft deep.

Drill sites requiring access by helicopter would be cleared by hand where required and would require a drill area that is a maximum 60-by-40-feet in area. The drill rigs that would be used (LF-90D – Boart Longyear drill rig or similar) are unitized to enable disassembly. The helicopter would be used to complete the heavy lifts and to deliver the drilling rig components in sequence on a long-line lanyard for reassembly at each site. A steel skid would be placed directly on the ground surface if a level drill site can be established using hand tools. If additional leveling is required, 10-inch by 10-inch timbers would be used to create a temporary cribbing structure for the skid set to sit on. The cribbing will not exceed 4 ft in height at the low elevation points of the drill site. The cribbing will be fastened together using steel spikes and fully disassembled and removed upon completion of each drill hole. Helicopter-accessed drill sites would include all drilling equipment and personnel during construction and operation, and two hand dug sumps (maximum 12-ft by 12-ft in area) on the downslope sidehill. A portable toilet would be provided at each site. No support trucks or water trucks would be provided at the helicopter-accessed sites. Helicopter-accessed sites would be accessed only by helicopter and cleared entirely by hand. Water, fuel and supplies needed for the drilling process would be delivered by helicopter. Where necessary, daily crew changes would be done by helicopter.

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#### **4.6. WATER MANAGEMENT**

Water for drilling and dust suppression would be provided by the drilling company via a water truck. SMP would likely procure water from Gold Rock Ranch and/or Yuma. It is anticipated that two 1,000-gallon water trucks would be required onsite each day. A 2,000-gallon portable water storage tank would also be kept onsite for drilling and dust suppression (**Figure 4**).

Water would be needed during the drilling process, and the drill holes are expected to produce water during the drilling process. Water would come into contact with bentonite drilling mud and ground rock at depth. Water would be managed and handled at each drill site after it is pumped out of the hole either by recirculating it for use in the drilling process, by removing the water and hauling it away, or by evaporation and allowing solids to settle out in excavated mud pits or sumps at the drill site. The sumps would be backfilled after evaporation. There would be no discharges outside the drill site or in surface tributaries, and no pollutants would be discharged in accordance with Clean Water Act requirements. Activities would be in compliance with applicable state and federal laws.

Upon completion of the exploration, the exploratory drill holes would be sealed and abandoned in compliance with the most current edition of State Water Resources Control Board Bulletin #74-81 and #74-90. SMP would coordinate with Imperial County Planning and Development Services Department to obtain appropriate permitting for the exploration Project.

#### **4.7. HAZARDOUS AND SOLID WASTE MANAGEMENT**

No hazardous substances would be used in the drilling program and no hazardous wastes would be generated by the Project.

Fuel and lubricants would be stored in a reservoir to prevent any leakage. During drilling operations, the drill rig would be parked on top of plastic sheeting overlain by absorbent clay or shale (i.e., Oil-Dri, or “kitty litter”).

Trash generated by the contractors would be collected in appropriate containers and removed as required from the Project Area. Project-related refuse would be hauled to an authorized landfill for disposal in accordance with applicable laws and regulations. No refuse would be disposed onsite.

#### **4.8. SPILL CONTINGENCY PLAN**

SMP would have two fuel tanks onsite that would contain no more than 1,000 gallons of diesel fuel and 300 gallons of Jet fuel, respectively (**Figure 4**).

To prevent the spread of any accidental leakage in storage, fuel and lubricants would be stored in a shallow (4-inch depth), 10-foot by 10-foot lined reservoir at each drill site and in an approximately 6-inch

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deep, 20-foot by 40-foot lined reservoir at the fueling station. During drilling operations, the drill rig would be parked on top of plastic sheeting. A spill prevention kit would be stored on site consisting of an oil-only absorbent mat material (i.e., PIG<sup>®</sup> adsorbent mat pad) and absorbent clay or shale (i.e., Oil-Dri, or “kitty litter”). The volume of absorbent that would be kept onsite for potential spills is estimated to be 50 gallons at each active drill site and 100 gallons at the fueling station. Since there will be, at most, 2 active drill sites at one time the estimated volume of absorbent onsite is 200 gallons.

A Spill Contingency Plan would be prepared to describe the procedures followed by SMP and their contractors to prevent, control, and mitigate releases of oil and petroleum products to the environment within the Project Area. The following proposed spill prevention, control and countermeasures would be implemented:

- Fueling would be performed on a 20-ft by 40-ft plastic sheeting over an approximately 6-inch deep reservoir. The fueling area would be sloped gently to one corner with a small sump to contain any accidental releases of fuel.
  - Equipment servicing would be performed within the fueling area or on plastic sheeting within the drill sites.
  - A standard procedure fueling and servicing would be performed at the designated fueling stations and drill sites; however, equipment may need to be serviced at times elsewhere within the Project Area, and spill protection measures would be implemented.
  - Diesel fuel is a major consumable for the mine equipment. Diesel fuel is available from local suppliers and would be received in tank trucks. The Project would receive and unload diesel to the onsite storage tank.
  - Diesel fuel would be offloaded using drip-less connections in a contained area to eliminate spillage contamination. The off-loading sites would be designed to drain into the main storage site containment and have a spill response kit containing booms, and clean-up materials to ensure that any off-containment spillage is immediately contained and cleaned.
  - A small spill response trailer would be maintained in the Project Area to clean-up any spills.
  - Inspections of fuel valves and other inlets and outlets as well as secondary containment would be made daily.
  - All site personnel that would be involved in fuel-handling would be trained in the operation and maintenance of equipment to prevent discharges.
  - The 1,300-gallon fuel tank would be secured and locked during times when SMP personnel and contractors are not on site.
  - Berms and protective barriers would be placed around the fuel tank to prevent accidental or malicious damage by vehicles or equipment.
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#### **4.9. FIRE PREVENTION PLAN AND PUBLIC SAFETY**

SMP would implement site-specific fire prevention/protection actions. At a minimum these actions would include designating Project fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the Project Area.

SMP would have a 2,000-gallon portable water storage tank onsite for dust suppression that would also be available to assist in firefighting operations (**Figure 4**). SMP would ensure that all mobile equipment be equipped with fire extinguishers, hand tools, and first aid kits.

In the event of an initial, small fire that does not create enough smoke, flame, and heat to prevent fighting the fire using a hand-held fire extinguisher or a small water hose, and providing no one would be endangered, SMP personnel and/or contractors would use make a reasonable effort to extinguish the fire. If two or more people are present, one would fight the fire while one reports to 911 the size, type, and location in the event the fire grows out of control. Personnel would not directly engage any fire which is beyond the incipient stage, i.e., a fire which has progressed to the point it has substantially involved any structure/equipment.

Planning and prevention of fires is also managed through the appropriate handling and storage of fuels, inspections and recordkeeping, spill prevention and response procedures, proper use of safety equipment, resource management training, and fire prevention training.

SMP will coordinate with local law enforcement and fire departments to provide 24-hour access as needed for emergency response.

Cellular telephone service is generally available within the Project Area site for emergency and other communications. A satellite phone would also be made available in case of emergencies. Contractors would be trained in proper emergency response, incident reporting, and general health and safety issues. All equipment would be maintained in a safe and orderly manner.

#### **4.10. PLAN FOR INTERIM CURTAILMENT**

This plan for interim curtailment describes the procedures that SMP will implement to prevent unnecessary or undue degradation of BLM lands in the event of a temporary suspension of the Project. These procedures are intended to provide for public safety and environmental protection, while facilitating resumption of operations when appropriate.

SMP will implement the following procedures as appropriate in the event of a curtailment.

- *Measures to monitor the Project:* SMP would designate a field contact representative (FCR) to conduct routine maintenance and inspections and maintain compliance with requirements in
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environmental permits and this Plan. Monitoring would be conducted monthly or periodically as needed based on communications with BLM and Imperial County.

- *Measures to stabilize excavations:* Excavations anywhere within the Project will be stabilized by preventing stormwater erosion of or excessive run-on into these features. Sediment control structures could include, but not be limited to fabric and/or hay bale filter fences, siltation or filter berms, and downgradient drainage channels in order to prevent unnecessary or undue degradation.
- *Measures to maintain the Project in a safe condition:* Public access will be controlled by signing, fencing, gates, or berms to warn the public of hazards associated with the Project area. All equipment, facilities and fuels would be removed from the site or secured at the Portal Staging Area, which would be fenced and locked to prevent access.

## **5. ENVIRONMENTAL PROTECTION MEASURES**

### **5.1. PREVENTION OF UNNECESSARY OR UNDUE DEGRADATION**

SMP would prevent unnecessary or undue degradation of public lands by complying with the performance standards found in 43 CFR § 3809.415 and 3809.420, as applicable. SMP would comply with BLM's terms and conditions related to the specific mining and reclamation activities and with other federal and state laws related to environmental protection and protection of cultural resources.

SMP would commit to the following environmental protection measures to prevent unnecessary or undue degradation during project activities. The measures are derived from the general requirements established in 43 CFR § 3809.420, as applicable, as well as other federal and state water and air quality regulations.

### **5.2. SURFACE WATER AND GROUNDWATER**

Surface water within the Project Area consists of stormwater runoff within natural ephemeral drainages. The Project will comply with all applicable regulations relating to hydrology and water quality. SMP would obtain coverage for the Project under a CGP pursuant to CGP Regulation (NPDES No. CAS000002; SWRCB Order No. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ), if required. The Project may be located in an area that is not hydrologically connected to waters of the U.S., and would be therefore, eligible for a Notice of Non-Applicability (NONA) in the Statewide Stormwater Industrial General Permit (IGP).

Best Management Practices (BMPs) would be installed to manage disturbed surfaces. Sediment control structures could include, but not be limited to fabric and/or hay bale filter fences, siltation or filter berms, and downgradient drainage channels in order to prevent unnecessary or undue degradation.

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Water used for dust control will be kept to a practicable minimum in order to minimize the risk of water runoff, and any water runoff will be managed so to not cause downstream erosion or flooding nor cause an exceedance of applicable water quality standards.

Only minor servicing of mobile equipment (greasing and periodic fueling) would be conducted on BLM lands, limiting the potential for diesel fuel spills. Spill response kits would be maintained to ensure that pollutants are prevented from entering into washes. Any pollutants generated by Project activities would be properly disposed of in accordance with applicable regulations.

The Project does not trigger any waste discharge requirements under Title 27, CCR, Section 20005 et seq.

### 5.3. EROSION AND SEDIMENT CONTROL

Prior to commencement of operations, site-specific stormwater and erosion control BMP's will be implemented on an as needed basis. BMPs to be implemented onsite may include, but are not limited to, the following: specific prohibitions, effluent limitations, potential contaminant source identification, practices to reduce pollutants, assessment of pollutant sources, materials inventory, preventative maintenance program, spill prevention and response procedures, general storm water BMPs, training, record keeping, sampling procedures and a description of the monitoring program.

**Table 2** summarizes the potential erosion control BMPs that would be implemented as part of the Project.

**Table 2. Summary of Erosion BMPs**

<b>Industrial Activity/Material</b>	<b>Potential Pollutants</b>	<b>BMPs Implemented</b>	<b>Required Equipment &amp; Tools</b>
Site Preparation and/or Exploratory Drilling	Sediment	Erosion control; Sediment control; Stormwater containment.	Silt fencing and fiber rolls. Mobile equipment for berm maintenance as needed.
	Dust	Wind erosion control; Erosion control; Sediment control; Tracking control.	Water truck; Soil binders.
Equipment and Vehicle Maintenance	Oil & Grease Hydrocarbons Gross Pollutants Trace Metals	Good housekeeping; Spill prevention & maintenance; Interior berms as needed to direct surface flows to pit; Secondary containment.	Covered trash bin; Spill kit; Bulldozer for berm maintenance.

No stockpiling of material is anticipated other than for temporary storage as may be necessary. For example, temporary stockpiles may be formed when developing the access roads and/or individual drill pads. If needed, additional BMPs (e.g., berms, sandbags, fiber rolls, or silt fencing, etc.) will be

installed to ensure sediment does not inadvertently erode into adjacent areas during a large storm event.

Due to the existing topography and the proposed design of the access roads and drill pads, stormwater runoff and sediment erosion from the Project Area is considered unlikely. Development of the Project would not add any paving or impervious surface areas. Due to site topography and design, and through the implementation of BMPs, the chances of discharge, erosion, and/or sedimentation from the Project Area that could adversely impact adjacent properties is considered very low.

#### **5.4. AIR QUALITY**

Air quality impacts associated with the Project would be primarily from fugitive dust generation by vehicles and equipment during operations and from vehicle and drill powerplant emissions. Road dust emissions and tailpipe emissions from drilling activities and vehicle travel along the access roads have the potential to release regulated pollutants. The Project would comply with applicable State of California and Imperial County Air District rules for fugitive dust emissions and greenhouse gas emissions.

#### **5.5. SOLID WASTES**

SMP would properly dispose of waste oil, other related fluids, filters, oily rags, etc. in appropriate disposal locations. Litter and trash generated by the contractors would be collected in appropriate containers and removed as required from the Site. Project-related refuse would be hauled to an authorized landfill for disposal. No refuse would be disposed onsite.

Portable toilet facilities provided for the duration of the Project would be maintained by contractors and accumulated human waste would periodically be collected and transported to an approved disposal site. No waste would be buried on site.

#### **5.6. BIOLOGICAL RESOURCES**

A biological resources assessment was conducted by Tetra Tech, Inc. within the Project Area in October 2011, and concluded that desert tortoise (*Gopherus agassizii*) has some potential to occur within the Project Area (Tetra Tech 2011). Known observations of desert tortoise in the general vicinity of the Project Area are not recent (1988-2005) and are primarily from desert wash habitat with little disturbance (BLM 2018), significantly different than the Project Area, which is on previously mined areas and associated access roads. The nearest designated critical habitat is approximately 10 miles from the Project Area. As provided in the measures below, adverse impacts to tortoise would be avoided. It was also determined that the Gila woodpecker (*Melanerpes uropygialis*), a state-listed endangered species may occur in the Project Area but that was determined to be unlikely due to the lack of large trees in this area (Tetra Tech 2011).

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Given the following, no designated or proposed threatened or endangered species or designated or proposed critical habitat listed under the Endangered Species Act are expected to be adversely impacted by the Project.

1. To the extent possible, the Project would be completed outside the tortoise active season (March 15-November 1), between November 2 and March 14.
2. The Project would result in limited surface disturbance,
3. Project impacts would occur on previously disturbed areas,
4. The exploration drilling portion of the Project is short term, and would be conducted within a period of 12 to 24 months,
5. Measures are proposed to avoid and limit effects to wildlife and vegetation,

Similarly, because of the items identified above, the proposed exploration activities are not expected to result in adverse impacts to BLM-sensitive species that may be present in the area that would lead towards loss of viability or a trend towards listing.

Due to the limited scope and duration of the Project, it is recommended that potential impacts to sensitive species habitats be avoided using measures identified below.

1. Prior to Project activities, pre-construction tortoise surveys shall be conducted by a BLM-approved Qualified Biologist within the area to be disturbed plus a 500-foot buffer, focusing on areas that could provide suitable burrow or cover sites, such as dry washes with caliche. A subsequent survey shall be conducted by a Qualified Biologist within 24 hours of the commencement of surface disturbance activities (should Project activities occur between March 15 and November 1). Burrows will be flagged such that they will be avoided by Project activities.
  2. A BLM-Qualified Biologist will be onsite during the initial activities or mobilization (should Project activities occur between March 15 and November 1).
  3. All surface disturbing activity shall be limited to the land area essential for the Project. In determining these limits, consideration shall be given to topography, public health and safety, placement of facilities, and other limiting factors. Work area boundaries shall be appropriately marked to minimize disturbance. All workers shall strictly limit their activities and vehicles to the areas marked. All workers shall be trained to recognize work area markers and to understand equipment movement restrictions.
  4. All workers, including all construction and drilling contractor personnel, and others who implement Project activities would be given special instruction, which would include training on distribution, general behavior and ecology, protection afforded by State and Federal endangered species acts (including prohibitions and penalties), and procedures for reporting encounters, and the importance of following the protection measures. The education program
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may consist of a class or video presented by a BLM-approved Qualified Biologist. The presentation to be used would be reviewed and approved by a BLM biologist.

5. All personnel would be notified that the desert tortoise is a species listed as threatened under the Endangered Species Act and protected by State and Federal law. Fines can be as high as \$50,000 and/or one year in prison for violations.
  6. Personnel would be notified that desert tortoises are not to be handled, fed, or harassed in any way. If encountered, tortoises will be allowed space and time to move from the area on their own volition.
  7. Personnel who attend tortoise training will sign an attendance sheet, which would be submitted to the BLM for their information. Should BLM staff inspect the site during construction activities, workers onsite should be able to provide proof of tortoise training (a hard hat sticker is recommended for this purpose).
  8. SMP would designate a field contact representative (FCR) who will be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordination on compliance with the BLM. The FCR must be onsite during all Project activities (should Project activities occur between March 15 and November 1). The FCR would have the authority to halt Project activities that are in violation of the stipulations. The FCR would have a copy of all stipulations when work is being conducted on the site. The FCR may be a crew chief or field supervisor, a project manager, any other employee of the project proponent, or a BLM-approved Authorized Biologist. Any incident occurring during project activities which is considered by the biological monitor to be in non-compliance with the mitigation plan shall be documented immediately by the biological monitor. The FCR shall ensure that appropriate corrective action is taken. Corrective actions shall be documented by the monitor. The following incidents shall require immediate cessation of the construction activities causing the incident, including:
    - a) imminent threat of injury or death to a desert tortoise;
    - b) unauthorized handling of a desert tortoise, regardless of intent;
    - c) operation of construction equipment or vehicles outside a project area cleared of desert tortoise, except on designated roads, and
    - d) conducting any construction activity without a biological monitor where one is required.
  9. If a tortoise is encountered during construction activities, work would be halted in proximity to the tortoise until an on-call BLM-approved Authorized Biologist can move the animal from harm's way, or until the desert tortoise leaves of its own accord.
  10. Where possible, motor vehicle access would be limited to maintained roads and designated routes. All vehicle tracks that might encourage public use would be reclaimed after Project-specific use. Barriers would be installed to prevent unauthorized vehicular traffic and signs would be posted indicating these roads would be for authorized use only.
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11. The following requirements apply to vehicle use:
    - a) Speed Limits: Vehicle speed within Project area, along right-of-way maintenance roads and on routes designated for limited use shall not exceed 20 miles per hour. Speed limits shall be clearly marked by the proponent, and workers shall be made aware of these limits.
    - b) Tortoises Under Vehicles: Vehicles parked in desert tortoise habitat would be inspected immediately prior to being moved. The practice of placing an orange cone by the driver side door will be used as a reminder to check for tortoise before re-entering and moving the vehicle. If a tortoise is found beneath a vehicle, a BLM-approved Authorized Biologist would be contacted to move the animal from harm's way, or the vehicle shall not be moved until the desert tortoise leaves of its own accord.
  12. Access roadside signs depicting a picture of desert tortoise will be posted to remind workers of the potential presence of tortoise within the Project Area.
  13. Project maintenance and construction, stockpiles of excavated materials, equipment storage, and vehicle parking shall be limited to existing disturbed areas wherever possible. Should use of existing disturbed areas prove infeasible, any new disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows or vegetation, public health and safety, and other limiting factors. Special habitat features, particularly tortoise burrows, shall be flagged by the Qualified Biologist so that they may be avoided by installation equipment and during placement of poles and anchors.
  14. All trash and food items generated by construction and maintenance activities shall be promptly contained and regularly removed from the project site to reduce the attractiveness of the area to common ravens and other desert predators. Portable toilets shall be provided on site if appropriate.
  15. Feeding of wildlife and/or leaving of food or trash as an attractive nuisance to wildlife is prohibited. Particular attention will be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny). All trash and food items shall be promptly contained within closed, wildlife-proof containers. These shall be regularly removed from the project site to reduce the attractiveness of the area to ravens and other predators.
  16. Domestic pets are prohibited on site. This prohibition does not apply to the use of domestic animals that may be used to aid in official and approved monitoring procedures/protocols, or service animals under Titles II and III of the Americans with Disabilities Act.
  17. Injury: Should any desert tortoise be injured or killed, all activities shall be halted, and the Authorized Biologist immediately contacted. The biologist shall have the responsibility for determining whether the animal should be transported to a veterinarian for care, which is paid
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for by the project proponent, if involved. If the animal recovers, USFWS is to be contacted to determine the final disposition of the animal; few injured desert tortoises are returned to the wild.

## **5.7. CULTURAL RESOURCES**

WestLand Resources, Inc. (WestLand) conducted a cultural resources assessment within the Project Area, where two cultural resources inventory projects have been previously conducted (WestLand 2020). Eight known historic resources are located within the Project Area. The records search indicates all eight of the historic resources within the Project Area are related to and are located within the current boundary of the Hedges/Tumco Historic Townsite. No prehistoric archaeological sites have been previously identified within the Project Area. However, previous studies have documented late nineteenth-century Native American Quechan buff ware ceramics in other portions of the larger townsite (Burney et al. 1993:B.8).

The results of the records search indicate that the prehistoric resources within the Project Area are within the geographic area previously described by Imperial County for the Keruk/Xam Kwatcan Trail Landscape (Imperial County 2015). Additionally, the results of the records search from the Native American Heritage Commission Sacred Lands Search (NAHC SLF) indicate that further tribal consultation, particularly with the Quechan Tribe of the Fort Yuma Reservation, may be required as part of additional data-gathering efforts for identifying cultural resources that could be affected by the proposed Project (WestLand 2020).

Given the nature of the previous research in the Project Area, SMP plans to retain a qualified archaeologist to conduct cultural resources inventory in all areas that will be potentially affected by surface disturbance associated with the Project to identify any historic resources present on the surface and areas that may be sensitive to intact buried cultural deposits. This type of inventory will collect precise locational data on the resources present and allow SMP to incorporate avoidance measures. Additionally, SMP proposes to prepare and implement a tribal engagement plan with the Native American Heritage Commission and the Quechan Tribe of the Fort Yuma Reservation regarding the Project.

All ground-disturbing activities have the potential to unearth archaeological sites or human remains and that all such discoveries on federal lands will be treated in accordance with the Native American Graves and Repatriation Act (25 USC 30001-3013).

## **6. RECLAMATION PLAN**

The intent of the California Surface Mining and Reclamation Act (SMARA) is to "maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining

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operations so as to assure that: (a) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative uses; (b) the production and conservation of aggregates are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment; and (c) residual hazards to the public health and safety are eliminated" (Section 2712)." Article 9, Section 3700 of SMARA states the following: "Reclamation of mined lands shall be implemented in conformance with standards in this Article. The standards shall apply to each surface mining operation to the extent that:

- They are consistent with required mitigation identified in conformance with CEQA; and
- They are consistent with the planned or actual subsequent use or uses of the site."

**Section 6** herein describes the Reclamation Plan for reclaiming land disturbed by exploration drilling within the Project Area, as required under SMARA. This Reclamation Plan addresses the reclamation activities that will be undertaken following completion of the exploratory drilling, in conformance with SMARA.

### **6.1. PURPOSE, APPROACH, AND SCHEDULE**

The anticipated post-Project land uses are mining, recreational uses, and open space. Following the completion of all drilling, solids and desiccated drilling muds that have been contained in the sump would be treated by evaporation and by allowing solids to settle out in excavated mud pits or sumps at the drill site. The sumps would then be backfilled. The drilling muds that would be used do not contain toxic or deleterious materials. The proposed drilling mud material data sheets could be provided to BLM upon request. The inert drilling mud materials would be disposed of in accordance with applicable state and federal regulations. The drill site, mud pits, and outer berm would then be returned to natural grade with a track hoe using rocks and soil set aside during site construction and mud pit excavation.

Water bars and erosion-control features would be repaired and constructed as necessary. All equipment and supporting structures would be removed from BLM lands.

Upon completion of the exploration, the exploratory drill holes would be sealed and abandoned in compliance with the most current edition of State Water Resources Control Board Bulletin #74-81 and #74-90. This would include backfilling with onsite materials, sealing with bentonite clay; and covering with a 2- to 3-foot mound of onsite material. Drilling and drill hole abandonment would be conducted in accordance with SMARA, Public Resources Code Sections 2710 et seq. and its regulations at 14 California Code of Regulations Section 3500 et seq.

Consistent with the H-3809-1 Surface Management Handbook (BLM 2012), this Reclamation Plan would be updated or appended to reflect other agency permits or authorizations, final designs, or certain stipulations, as more specific and detailed plans become available.

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Project reclamation for drilling activities and monitoring for the success of reclamation would be completed within 5 years of Project implementation.

A reclamation cost estimate would be submitted to BLM upon approval of the Final Plan in accordance with 43 CFR 3809.401(d).

## **6.2. REMOVAL OF EQUIPMENT AND FACILITIES**

Generally, the strategy for reclamation and closure of equipment and facilities would include:

- Removing temporary instrumentation and equipment, utilities, and unneeded access roads; and
- Reclaiming disturbed surfaces by ripping and/or covering and reseeding.

## **6.3. ROAD CLOSURE**

The main entrance road would remain in use during the post-closure period to provide access for post closure land uses, including reclamation work and monitoring.

Closure of roads that are not needed for post-closure access would involve demolishing fill while maintaining satisfactory drainage. Roads not needed for post-closure access would be reclaimed. The abandoned road surfaces would be scarified by ripping, if necessary. Where needed, rock or earthen berms and water bars would be placed to prevent vehicular access and reduce erosion. The road corridors would be reclaimed by treatment with a mulch/seed mix to promote revegetation.

## **6.4. REVEGETATION**

Reclaimed areas would be revegetated with a BLM-approved seed mix. These areas would be revegetated after cover placement and at the appropriate time of the year for optimum seed germination and plant growth.

### **6.4.1. Growth Media**

Generally, initial seedbed preparation on flatter surfaces would include ripping or discing the surface along contours. Conventional seeding techniques (including drill and broadcast) would be used as appropriate depending on soil/cover characteristics and landform. Hydroseed, hydromulch, and tackifier may be used on slopes that are not suitable for conventional seeding. Mulch may be applied to minimize erosion and promote moisture retention where appropriate.

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#### 6.4.2. Seed Mix

Revegetation would require site-appropriate, BLM-approved native seed mixtures. A diverse native plant community would be targeted through the definition of seed mixtures and application rates. The seed mix list would be reviewed before revegetation activities are initiated to confirm the availability of the seeds, and the list would be adjusted as needed. The seed mix and mulch materials would be certified by the revegetation contractor to be relatively weed free.

The proposed native seed mixture will consist of the following: creosotebush (*Larrea tridentata*), burrobush (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), desert spineflower (*Geraea canescens*), turtleback (*Psathyrotes ramosissima*), forget-me-not (*Cryptantha* spp.), and hairy prairie clover (*Dalea mollis*). Seeds will be purchased and mixed in equal quantities and will be hand broadcasted at approximately 10 pounds per acre.

The seed mix would be designed to meet the following criteria:

- Native non-invasive species that have a high compatibility with the existing landscape;
- Species and plant type diversity to promote a sustainable vegetative cover throughout the seasonal changes and other climate related variances; and
- Species and plant type diversity to promote a variety of germination periods and seasonal growth.

## 7. MONITORING PLAN

The scale of the Project is relatively small, affecting approximately only 21 acres of BLM lands. The Project poses relatively low risks of environmental impacts and would not require extensive monitoring at closure. Reclamation would occur concurrently with the Project implementation; once access is no longer required by SMP, the Project Area would be reclaimed and revegetated. The reclaimed and revegetated Project Area would be monitored and maintained annually in late Spring or early Summer for 3 years to ensure that vegetation is established, and reclaimed areas are stable.

As described in detail in **Section 5.6 (Biological Resources)**, Project activities will be monitored to avoid potential impacts to sensitive species habitats (particularly Mojave Desert tortoise habitat) should Project activities occur between March 15 and November 1 (the active Mojave Desert tortoise season). Pre-construction tortoise surveys shall be conducted by a BLM-approved Qualified Biologist within the area to be disturbed plus a 500-foot buffer, and a BLM-Qualified Biologist will be onsite during the initial activities or mobilization. In addition, SMP would designate a FCR who will be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordination on compliance with the BLM. The FCR must be onsite during all Project activities (should Project activities occur between March 15 and November 1).

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As described in **Section 5.7 (Cultural Resources)**, SMP will avoid impacts to cultural resources and engage in consultation with the Native American Heritage Commission and the Quechan Tribe of the Fort Yuma Reservation regarding the Project.

## 8. REFERENCES

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- Tetra Tech. 2011. Preliminary Biological Resources Assessment Oro Cruz Proposed Exploratory Dilling Locations Imperial County, California. Prepared for: Lincoln Gold US Corp. San Bernardino, CA: Tetra Tech. October 2011.
- WestLand Resources, Inc. 2020. A Cultural Resources Assessment for the Oro Cruz Gold Project, Imperial County, California, Report prepared for Southern Empire Resources Corporation. Cultural Resources Report 2020-126. Dated November 4, 2020.
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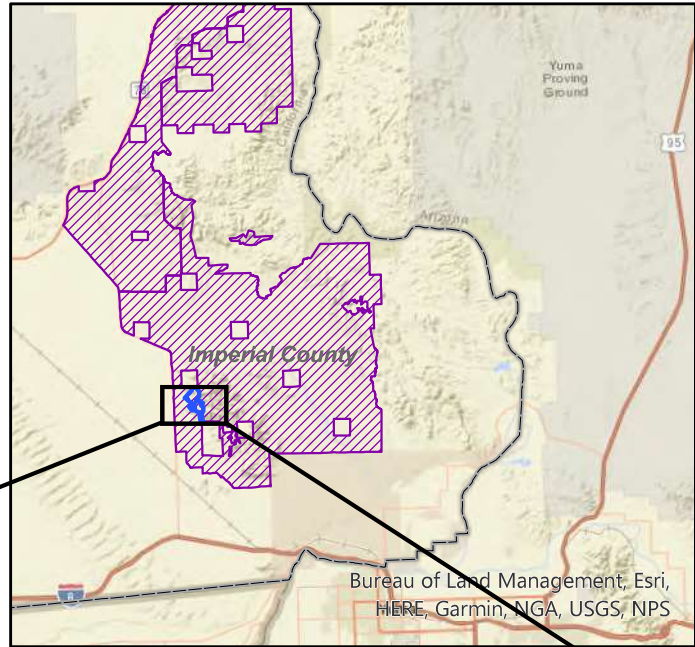
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## **FIGURES**

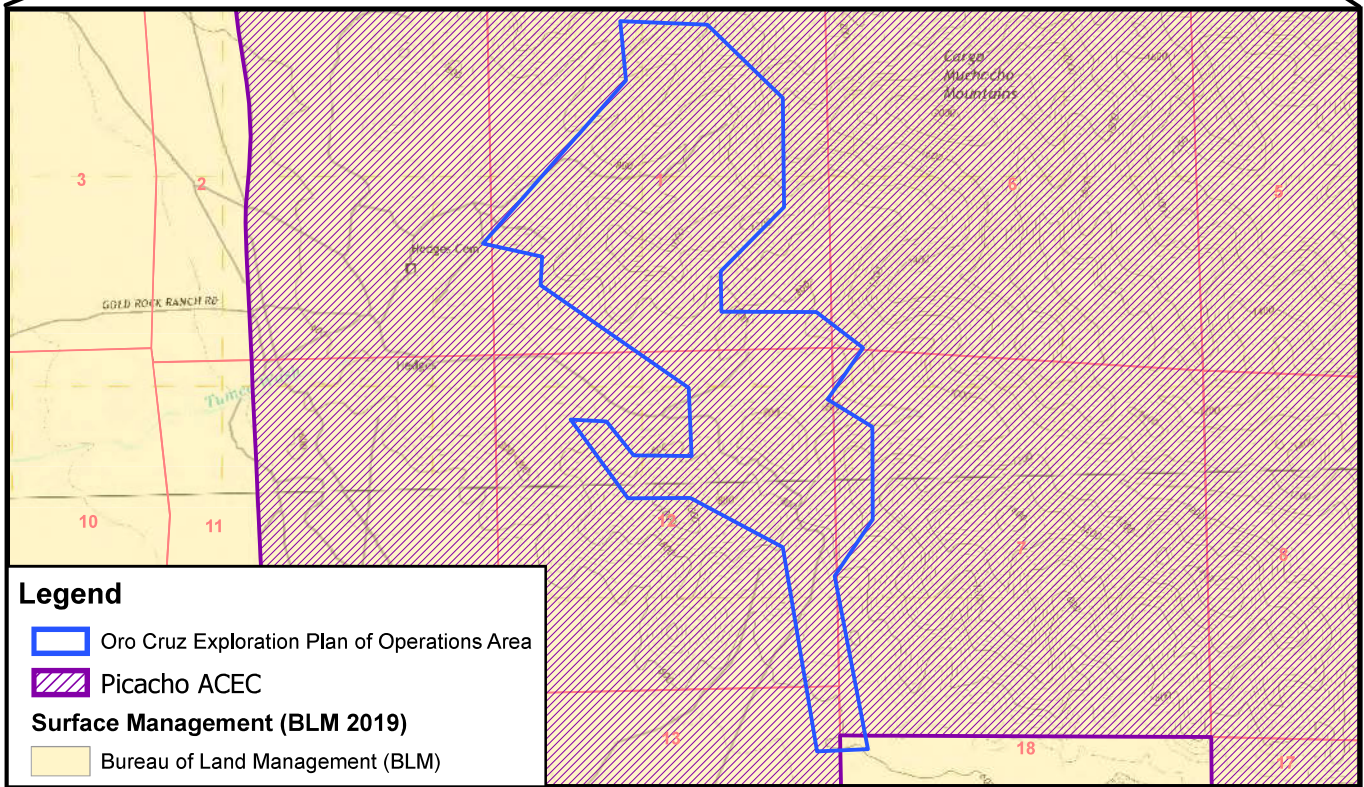
### CALIFORNIA






### PROJECT VICINITY



Approximate Scale 1 Inch = 12 Miles



#### Legend

-  Oro Cruz Exploration Plan of Operations Area
-  Picacho ACEC
- Surface Management (BLM 2019)**
-  Bureau of Land Management (BLM)

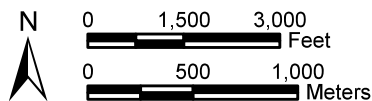
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 Image Source: ArcGIS Online, World Street Map

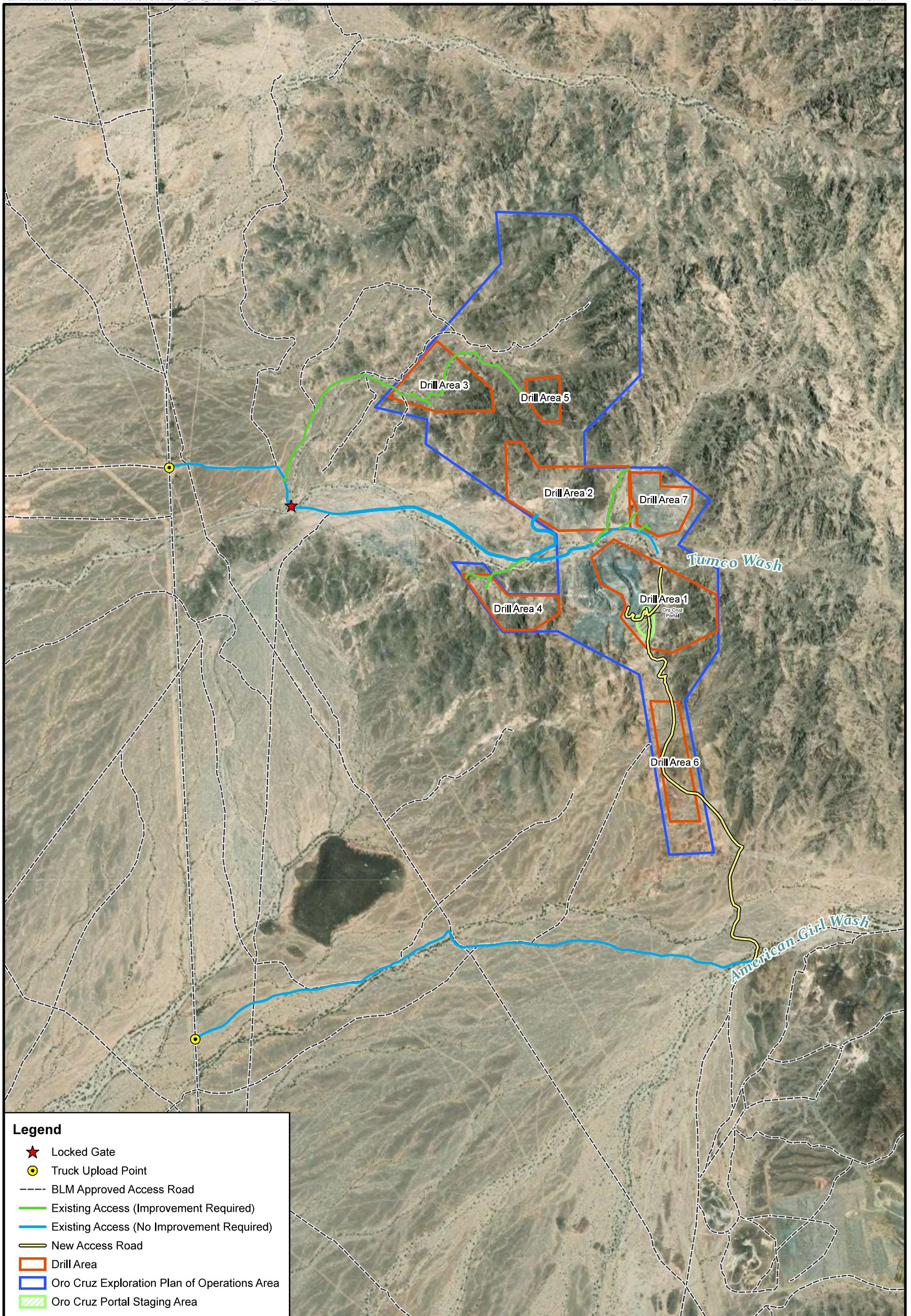
## SMP GOLD CORP.

### Oro Cruz Exploration Plan of Operations

VICINITY MAP

Figure 1

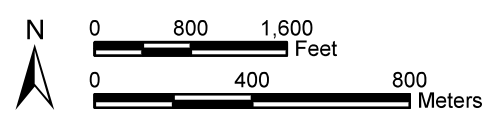




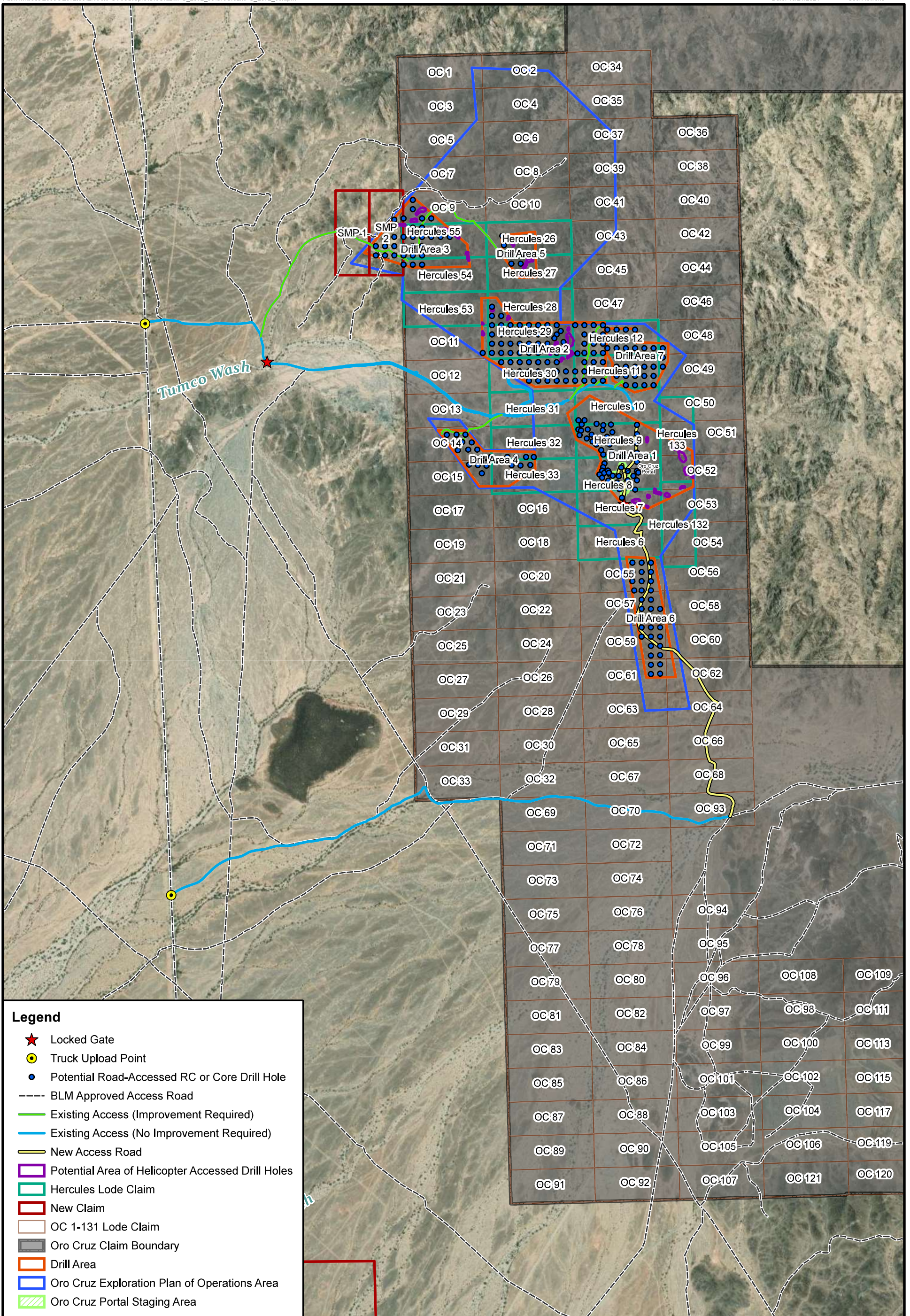
**Legend**

- ★ Locked Gate
- Truck Upload Point
- BLM Approved Access Road
- Existing Access (Improvement Required)
- Existing Access (No Improvement Required)
- New Access Road
- Drill Area
- Oro Cruz Exploration Plan of Operations Area
- ▨ Oro Cruz Portal Staging Area

T15S, R20E, Portions of Sections 1, 2, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018



**SMP GOLD CORP.**  
 Oro Cruz Exploration Plan of Operations  
 PROJECT LOCATION  
 Figure 2

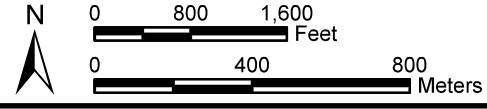


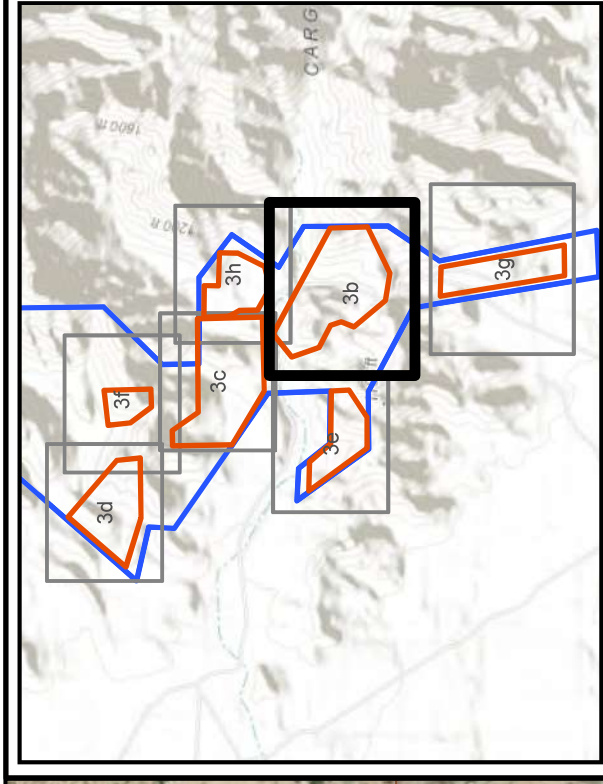
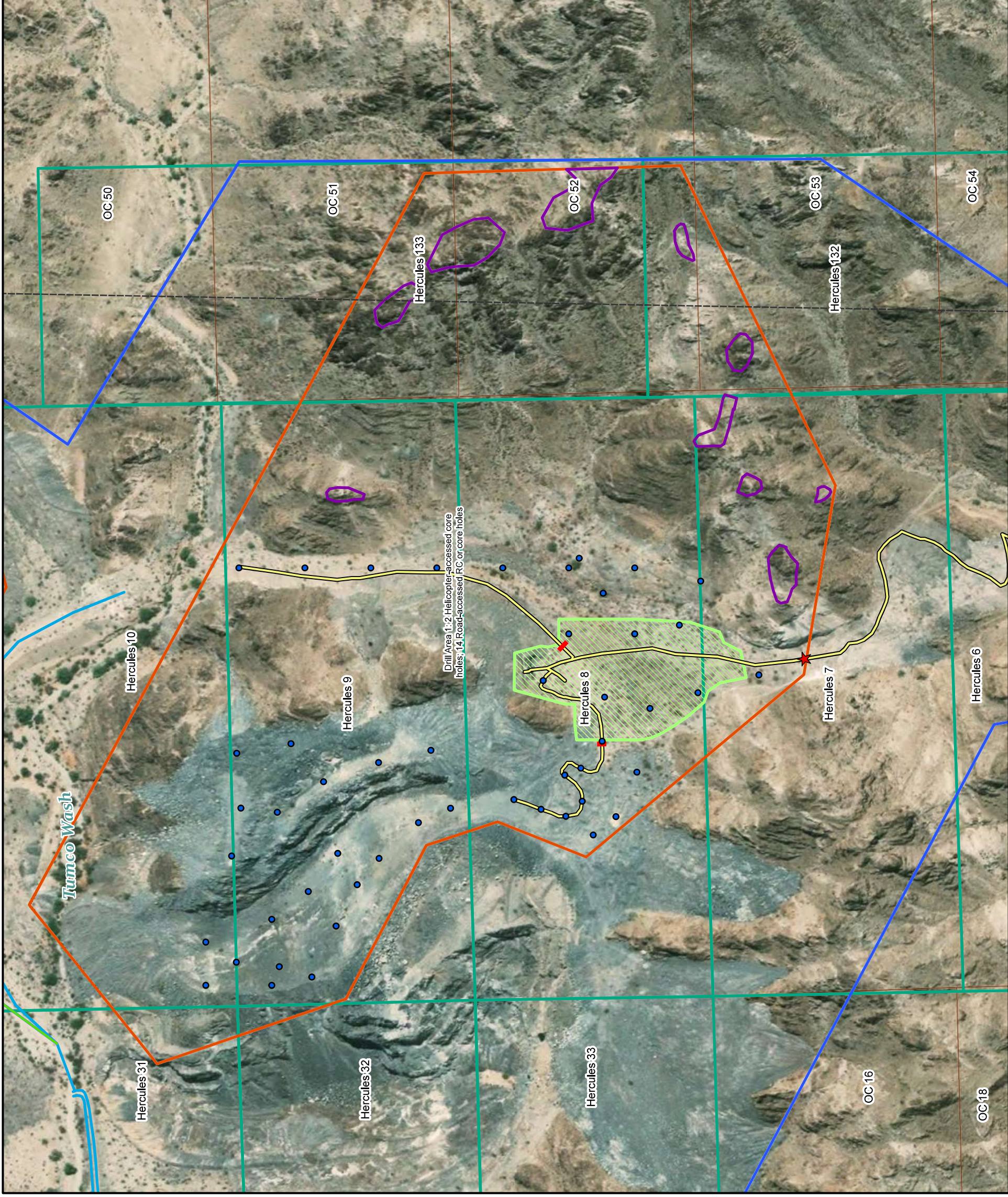
**Legend**

- ★ Locked Gate
- Truck Upload Point
- Potential Road-Accessed RC or Core Drill Hole
- BLM Approved Access Road
- Existing Access (Improvement Required)
- Existing Access (No Improvement Required)
- New Access Road
- ▭ Potential Area of Helicopter Accessed Drill Holes
- ▭ Hercules Lode Claim
- ▭ New Claim
- ▭ OC 1-131 Lode Claim
- ▭ Oro Cruz Claim Boundary
- ▭ Drill Area
- ▭ Oro Cruz Exploration Plan of Operations Area
- ▭ Oro Cruz Portal Staging Area

T15S, R20E, Portions of Sections 1, 2, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**SMP GOLD CORP.**  
**Oro Cruz Exploration Plan of Operations**  
 BLM CLAIMS BOUNDARY  
 Figure 3a



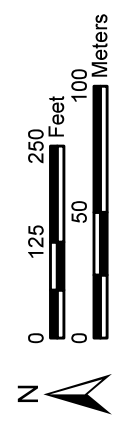


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 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**Legend**

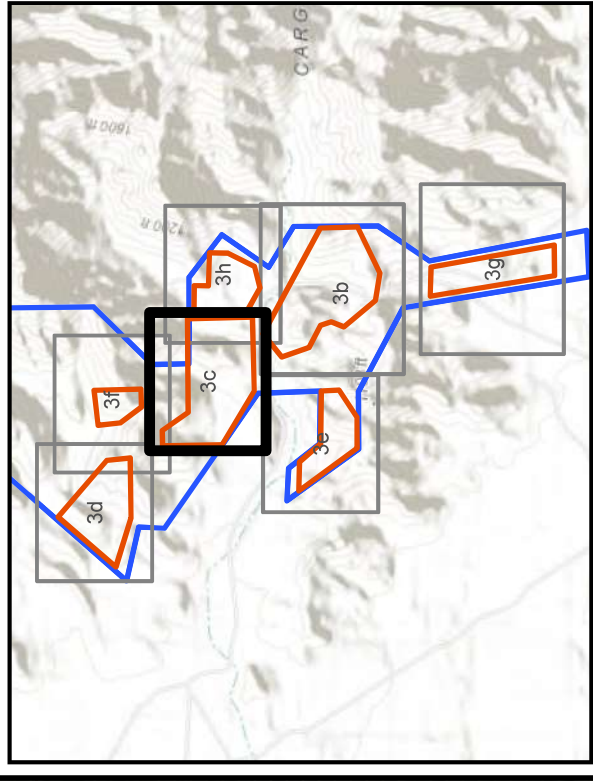
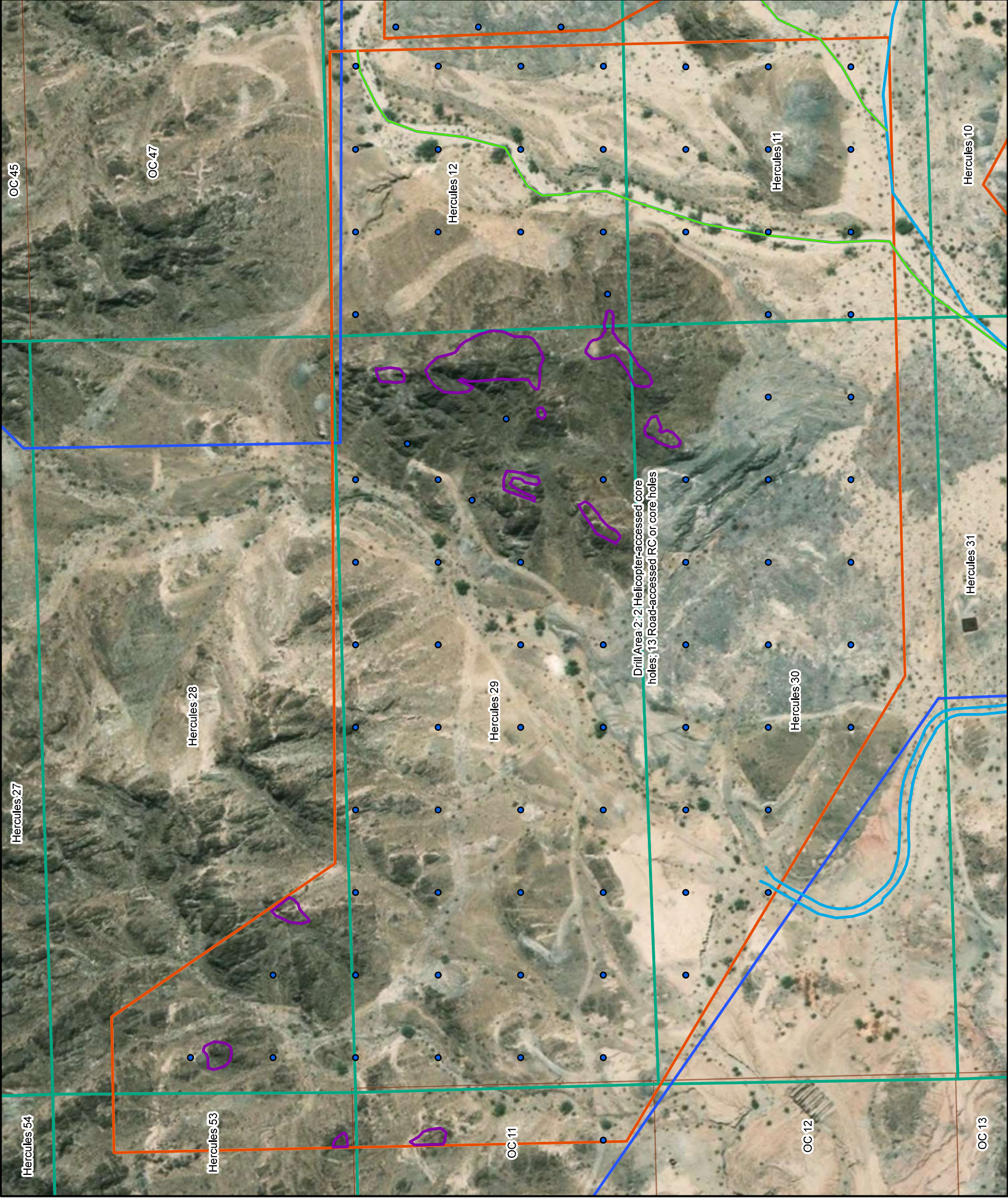
- ★ Gate
- Potential Road-Accessed RC or Core Drill Hole
- Existing Access (Improvement Required)
- Existing Access (No Improvement Required)
- New Access Road
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- Drill Area
- Potential Area of Helicopter-Accessed Drill Holes
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- OC 1-131 Lode Claim
- Oro Cruz Claim Boundary
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- Oro Cruz Portal Staging Area

**NOTE: Drill Area 1: 2 Helicopter-accessed core holes;  
 14 Road-accessed RC or core holes**



**SMP GOLD CORP.**  
 Oro Cruz Exploration Plan of Operations  
 BLM CLAIMS BOUNDARY  
 Figure 3b



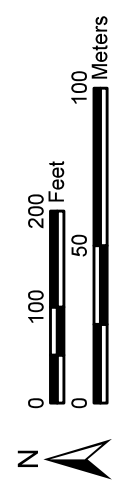


T15S, R20E, Portions of Sections 1, 2, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**Legend**

- Potential Road-Accessed RC or Core Drill Hole
- Existing Access (Improvement Required)
- Existing Access (No Improvement Required)
- Drill Area
- Potential Area of Helicopter-Accessed Drill Holes
- Hercules Lode Claim
- OC 1-131 Lode Claim
- Oro Cruz Claim Boundary
- Oro Cruz Exploration Plan of Operations Area

**NOTE: Drill Area 2: 2 Helicopter-accessed core holes;  
 13 Road-accessed RC or core holes**



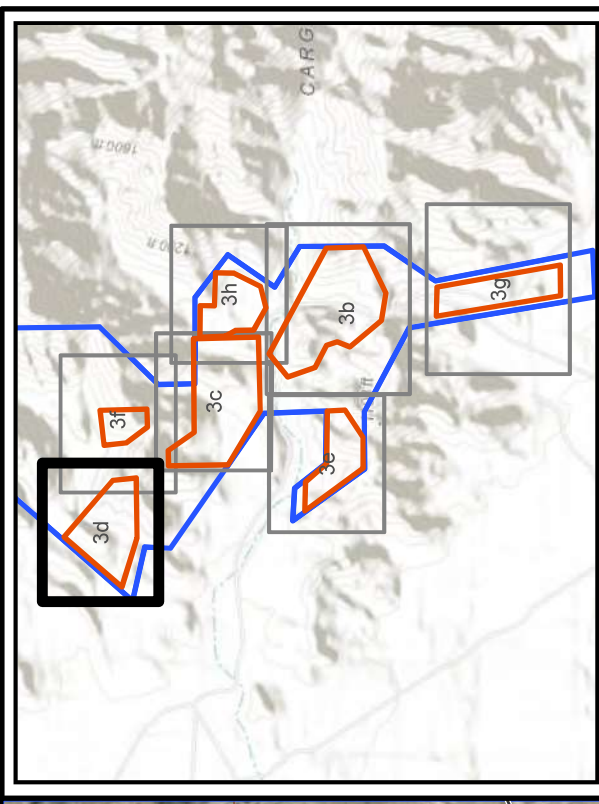
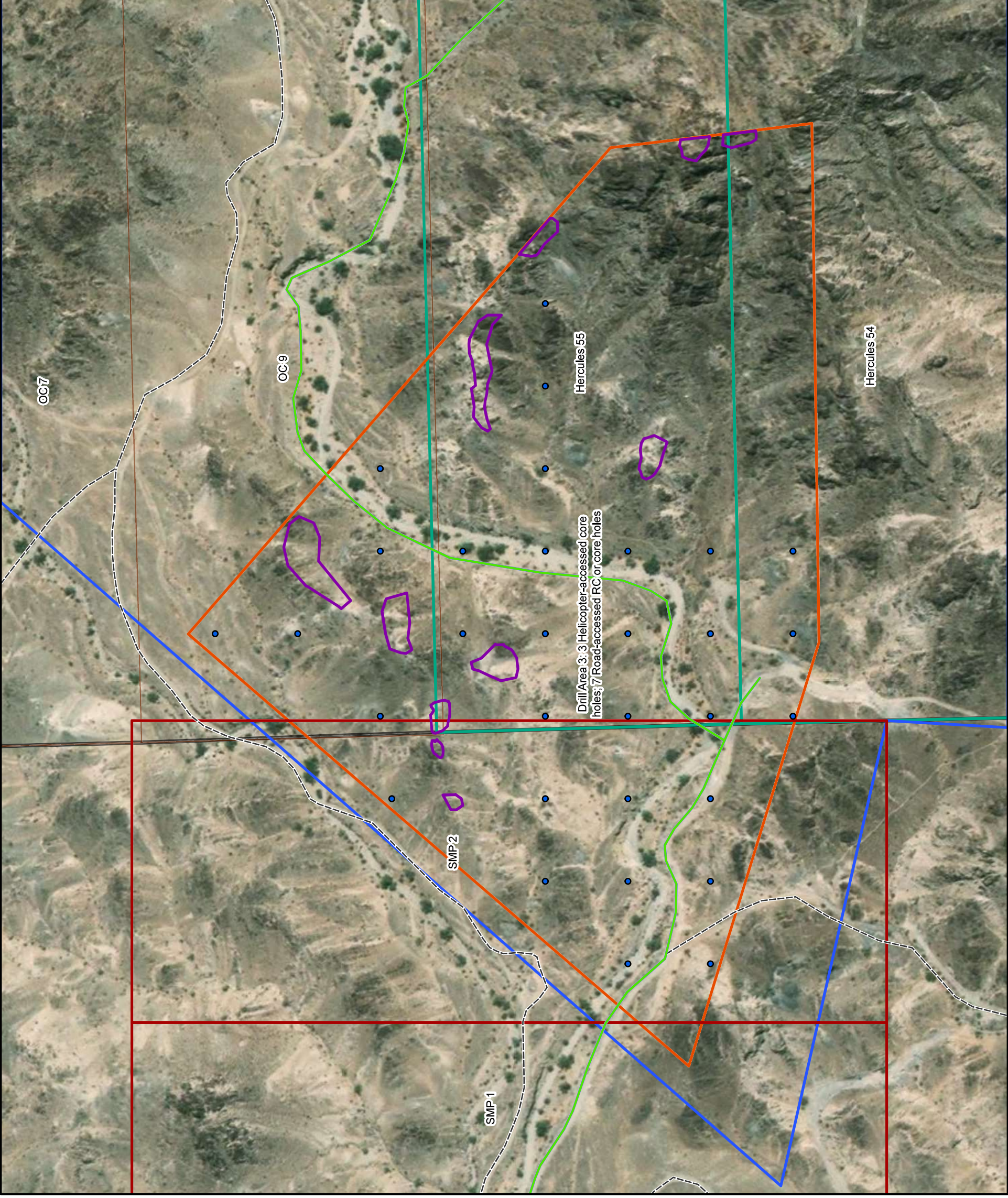
WestLand Resources

SMP GOLD CORP.

Oro Cruz Exploration Plan of Operations

BLM CLAIMS BOUNDARY

Figure 3c

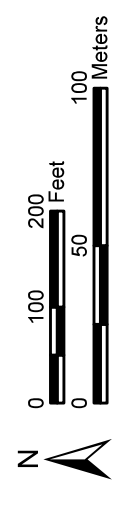


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 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**Legend**

- Potential Road-Accessed RC or Core Drill Hole
- BLM Approved Access Road
- Existing Access (Improvement Required)
- Drill Area
- Potential Area of Helicopter-Accessed Drill Holes
- Hercules Lode Claim
- New Claim
- OC 1-131 Lode Claim
- Oro Cruz Claim Boundary
- Oro Cruz Exploration Plan of Operations Area

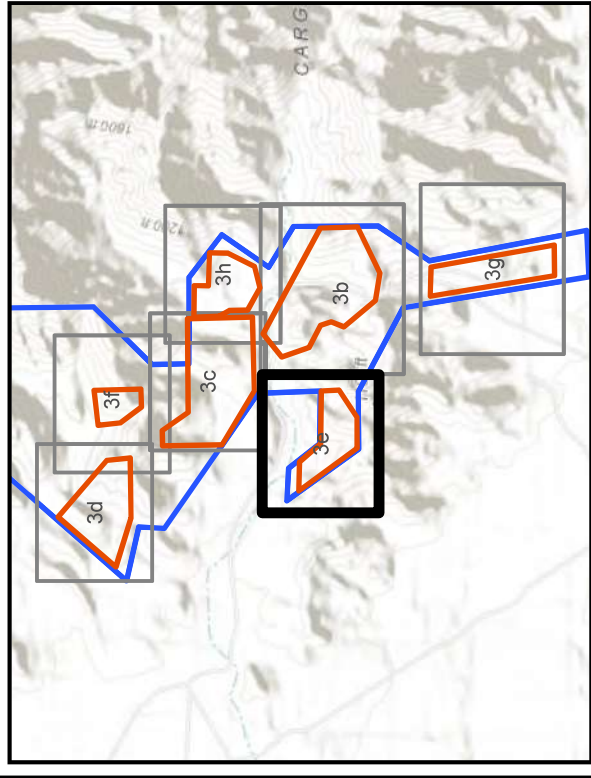
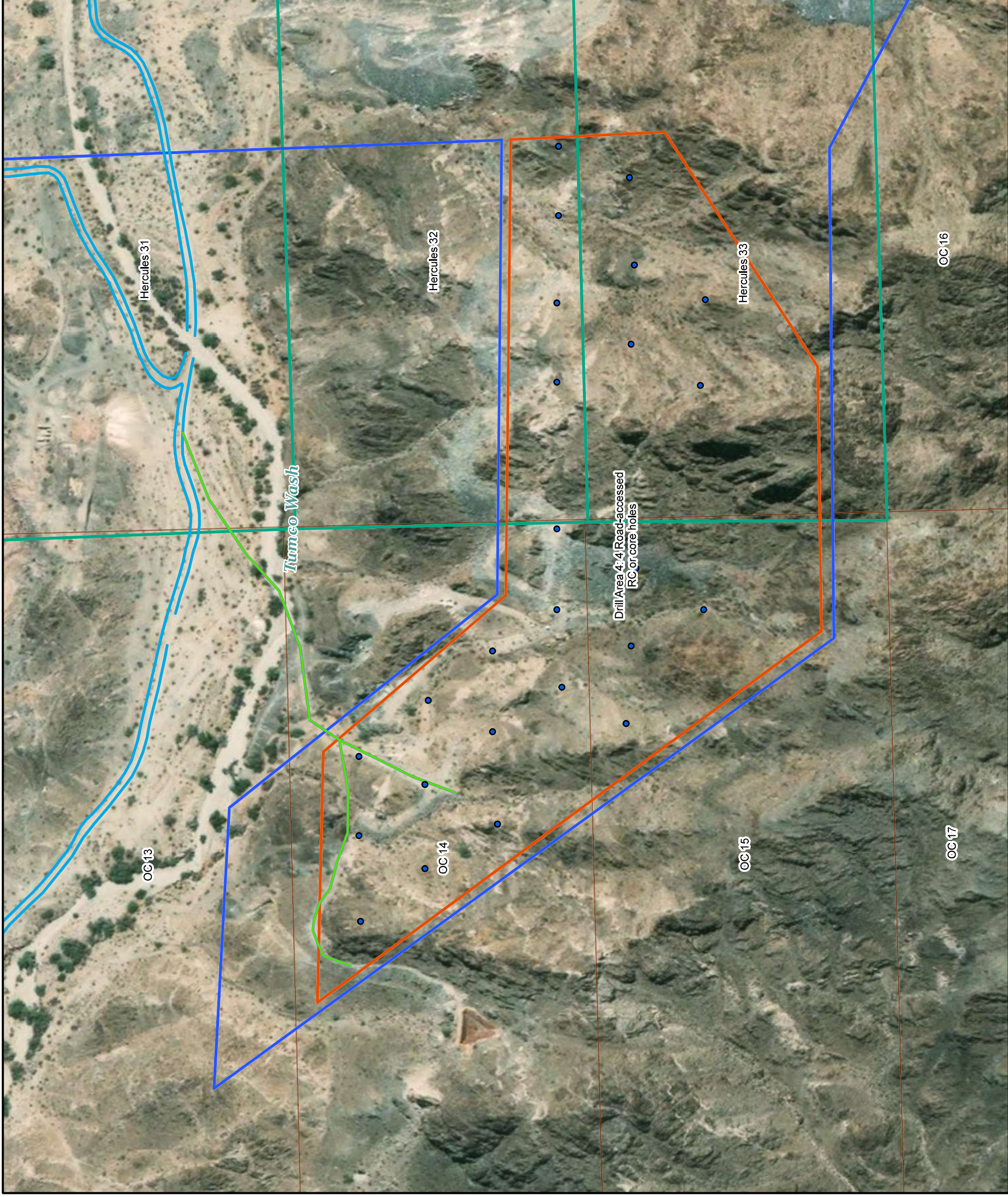
**NOTE: Drill Area 3: 3 Helicopter-accessed core holes;  
 7 Road-accessed RC or core holes**



WestLand Resources

**SMP GOLD CORP.**  
 Oro Cruz Exploration Plan of Operations  
 BLM CLAIMS BOUNDARY

Figure 3d

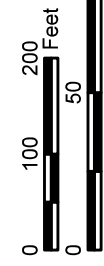


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 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**Legend**

- Potential Road-Accessed RC or Core Drill Hole
- Existing Access (Improvement Required)
- Existing Access (No Improvement Required)
- Drill Area
- Hercules Lode Claim
- OC 1-131 Lode Claim
- Oro Cruz Claim Boundary
- Oro Cruz Exploration Plan of Operations Area

**NOTE: Drill Area 4: 4 Road-accessed RC or core holes**



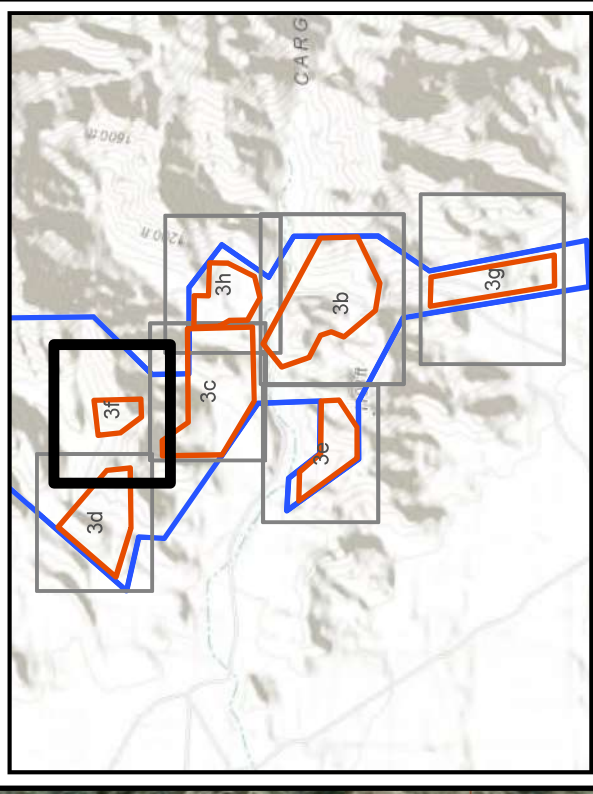
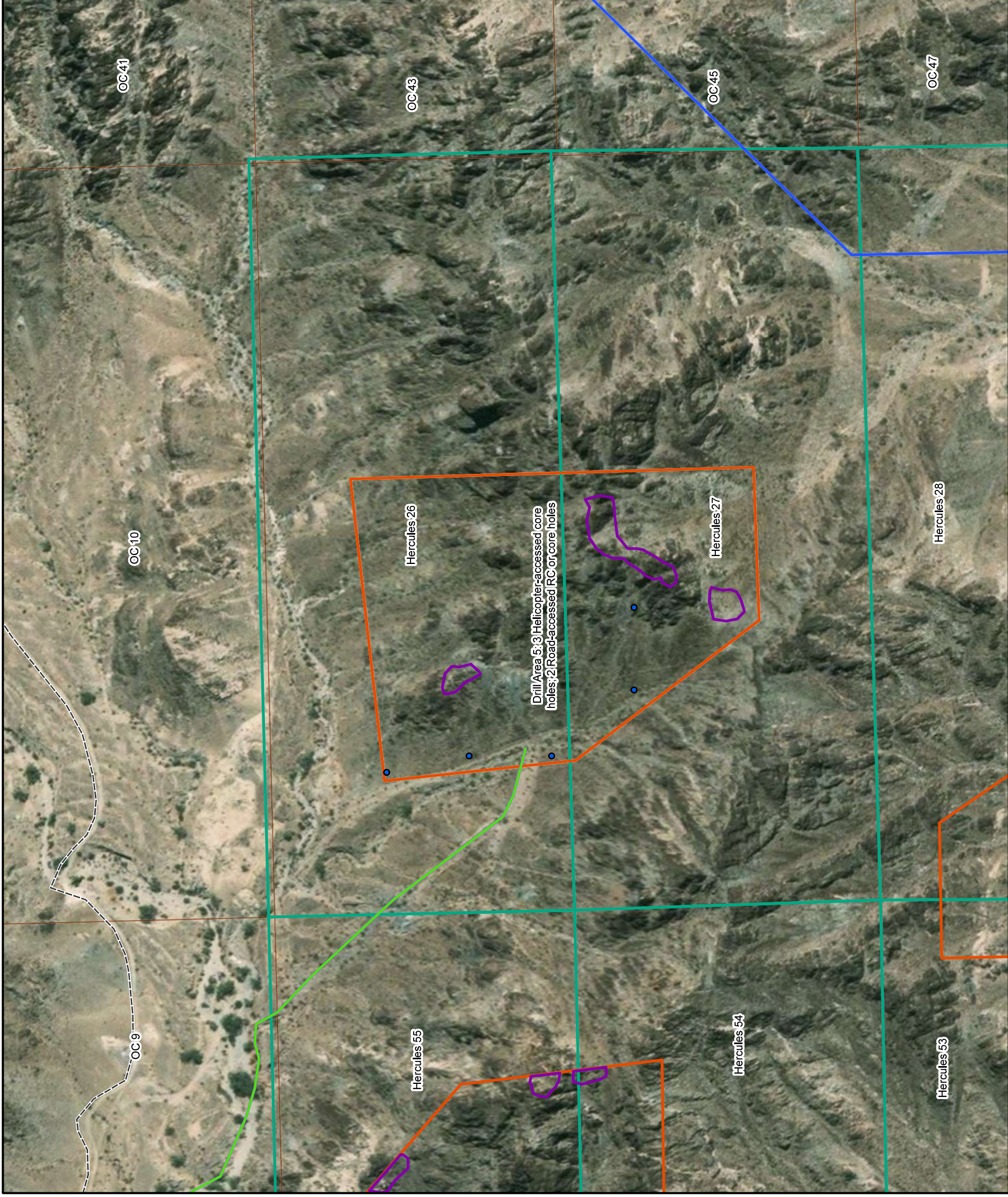
WestLand Resources

**SMP GOLD CORP.**

Oro Cruz Exploration Plan of Operations

BLM CLAIMS BOUNDARY

Figure 3e

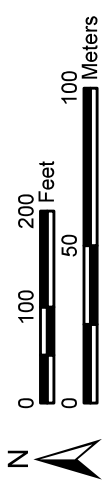


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 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**Legend**

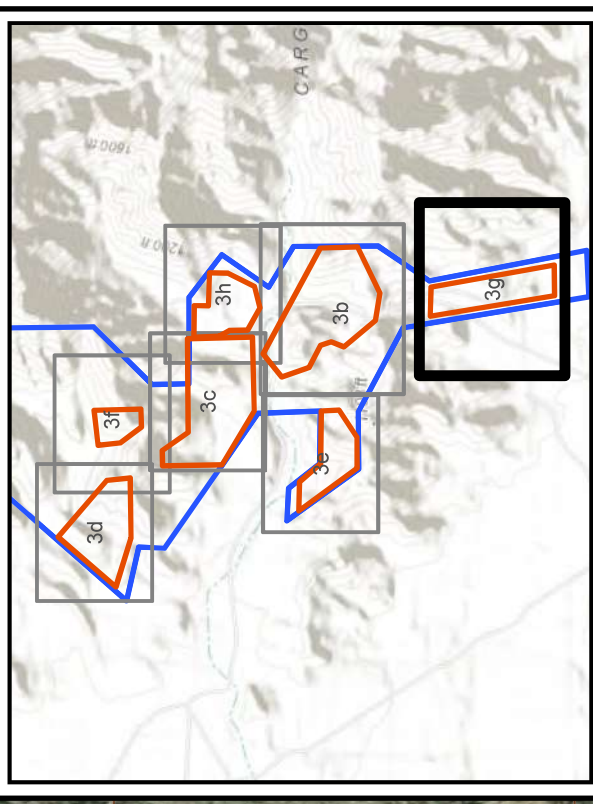
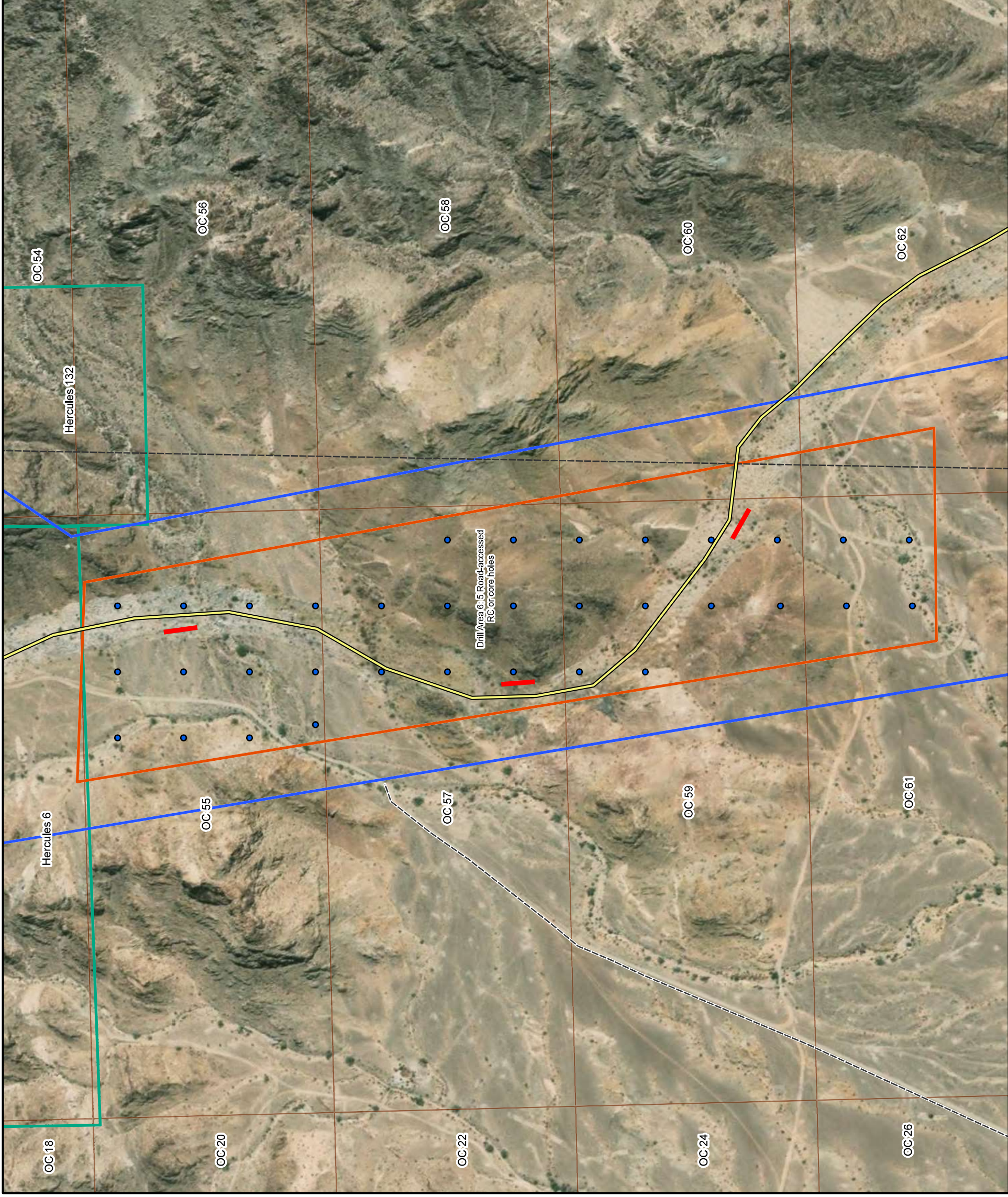
- Potential Road-Accessed RC or Core Drill Hole
- BLM Approved Access Road
- Existing Access (Improvement Required)
- Drill Area
- Potential Area of Helicopter-Accessed Drill Holes
- Hercules Lode Claim
- OC 1-131 Lode Claim
- Oro Cruz Claim Boundary
- Oro Cruz Exploration Plan of Operations Area

**NOTE: Drill Area 5: 3 Helicopter-accessed core holes;  
 2 Road-accessed RC or core holes**



WestLand Resources

**SMP GOLD CORP.**  
 Oro Cruz Exploration Plan of Operations  
 BLM CLAIMS BOUNDARY  
 Figure 3f

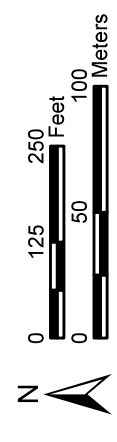


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 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**Legend**

- Potential Road-Accessed RC or Core Drill Hole
- BLM Approved Access Road
- New Access Road
- Safety Berm
- Drill Area
- Hercules Lode Claim
- OC 1-131 Lode Claim
- Oro Cruz Claim Boundary
- Oro Cruz Exploration Plan of Operations Area

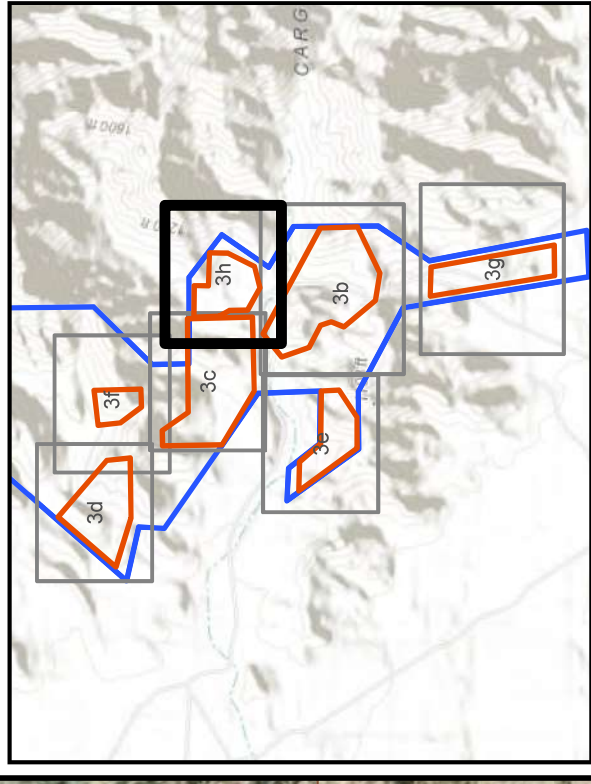
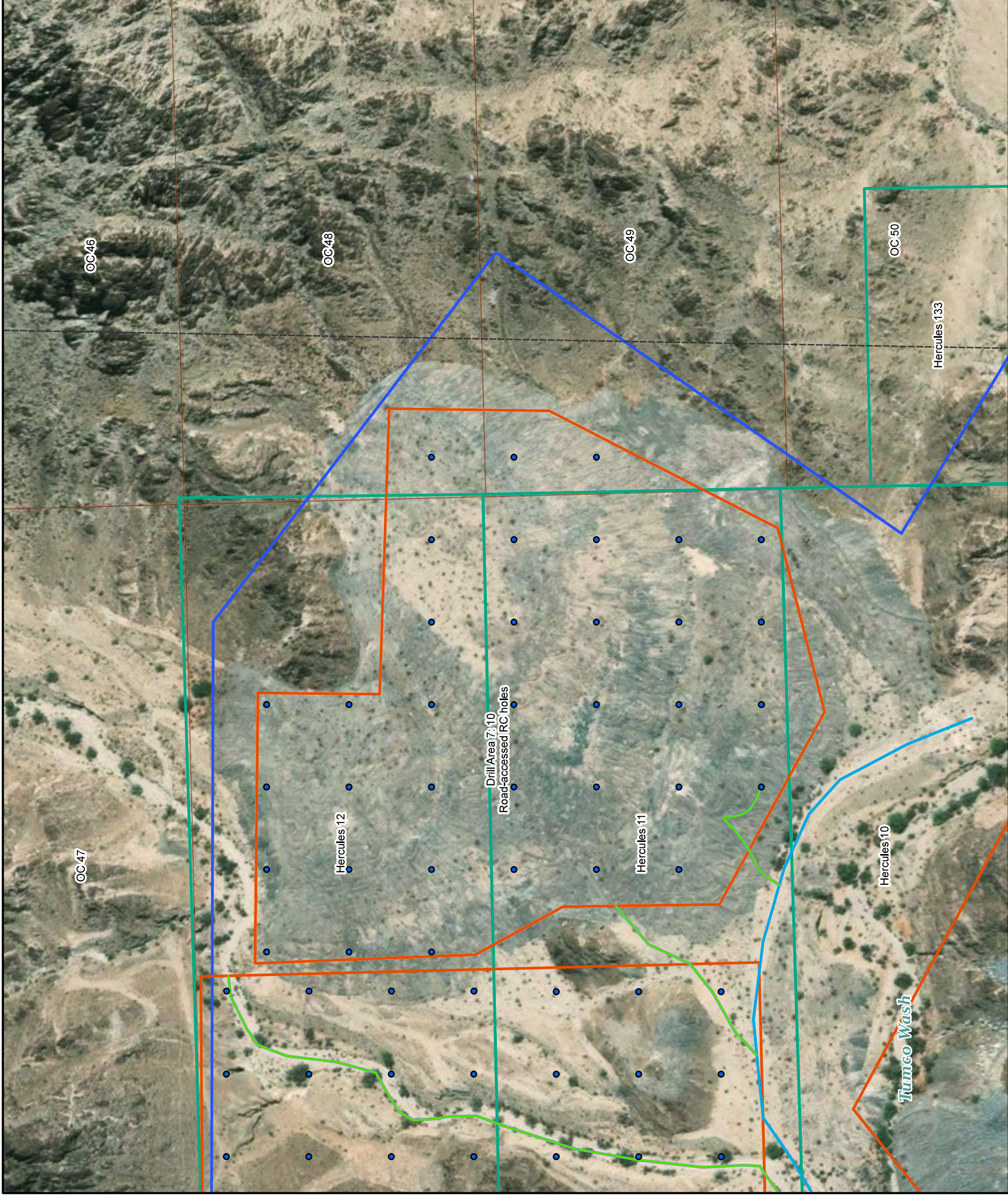
**NOTE: Drill Area 6: 5 Road-accessed RC or core holes**



WestLand Resources

**SMP GOLD CORP.**  
 Oro Cruz Exploration Plan of Operations  
 BLM CLAIMS BOUNDARY

Figure 3g

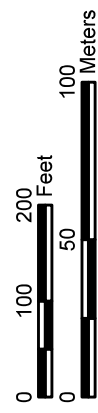


T15S, R20E, Portions of Sections 1, 2, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California, Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018

**Legend**

- Potential Road-Accessed RC or Core Drill Hole
- Existing Access (Improvement Required)
- Existing Access (No Improvement Required)
- Drill Area
- Hercules Lode Claim
- OC 1-131 Lode Claim
- Oro Cruz Claim Boundary
- Oro Cruz Exploration Plan of Operations Area

**NOTE: Drill Area 7: 10 Road-accessed RC holes**



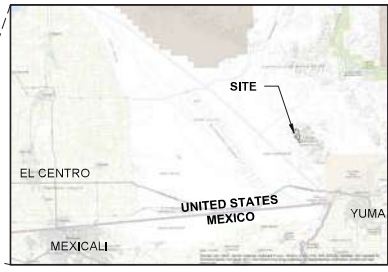
WestLand Resources

**SMP GOLD CORP.**

Oro Cruz Exploration Plan of Operations

BLM CLAIMS BOUNDARY

Figure 3h



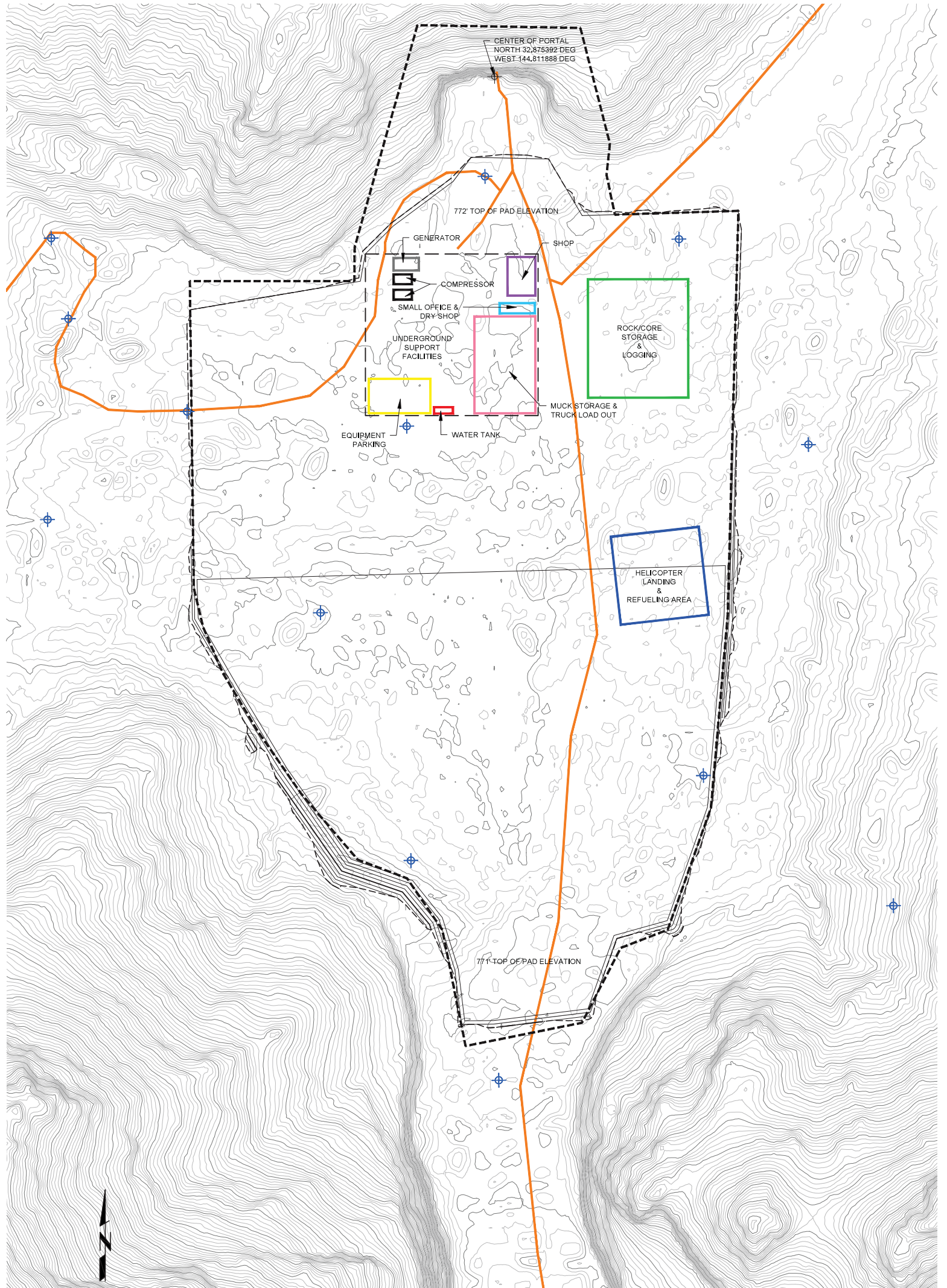
**INDEX MAP**

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- FIGURE 2: PROJECT LOCATION APNs
- FIGURE 3A: BLM CLAIM BOUNDARIES
- FIGURE 3B: DRILL AREA 1
- FIGURE 3C: DRILL AREA 2
- FIGURE 3D: DRILL AREA 3
- FIGURE 3E: DRILL AREA 4
- FIGURE 3F: DRILL AREA 5
- FIGURE 3G: DRILL AREA 6
- FIGURE 3H: DRILL AREA 7
- FIGURE 4: EXPLORATION PLAN
- FIGURE 5A: PORTAL STAGING AREA GRADING
- FIGURE 5B: CONCEPTUAL DRILL SITE LAYOUT
- FIGURE 6: RECLAMATION PLAN

**LEGEND**

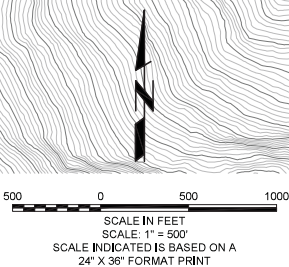
- EXISTING CONTOURS
- PAD CONTOURS
- NEW ACCESS ROAD
- POTENTIAL LOCATION OF ROAD-ACCESS RC OR CORE DRILL HOLE



THIS DRAWING HAS BEEN PREPARED IN ACCORDANCE WITH A STANDARD OF CARE ORDINARY AND CUSTOMARY WITHIN THE PRACTICE OF ENGINEERING. THE SCOPE OF RESPONSIBILITY OF THE UNDERSIGNED IS LIMITED SPECIFICALLY TO THE AREA OF PRACTICE OF CIVIL ENGINEERING DEFINED IN THE CALIFORNIA PROFESSIONAL ENGINEERS ACT.



A. PEARCE SWERDFEGER R.C.E. 87466 EXP. 09-30-2021



**SOURCE DATA:**

BOUNDARIES:  
 ORO CRUZ CLAIM BOUNDARY: WESTLAND RESOURCES  
 ORO CRUZ EXPLORATION: WESTLAND RESOURCES  
 TOPOGRAPHY:  
 LIDAR: EAGLE MAPPING LTD., FLIGHT DATE 01/15/2021  
 GROUND CONTROL: DESERT SURVEYING & ENGINEERING,  
 GORDON O. OLSON, PE, PLS (CA PLS NO. 7107)  
 CONTOUR INTERVAL: 10 FEET  
 DATUM: HORZ= NAD83, CALIFORNIA ZONE 5, US FOOT  
 VERT= NAVD88

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 374 Pol Street, Suite 200 • Ventura, CA 93001  
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REVISIONS			
MARK	DATE	DESCRIPTION	BY
	05/16/21	INITIAL DRAFT	GJC

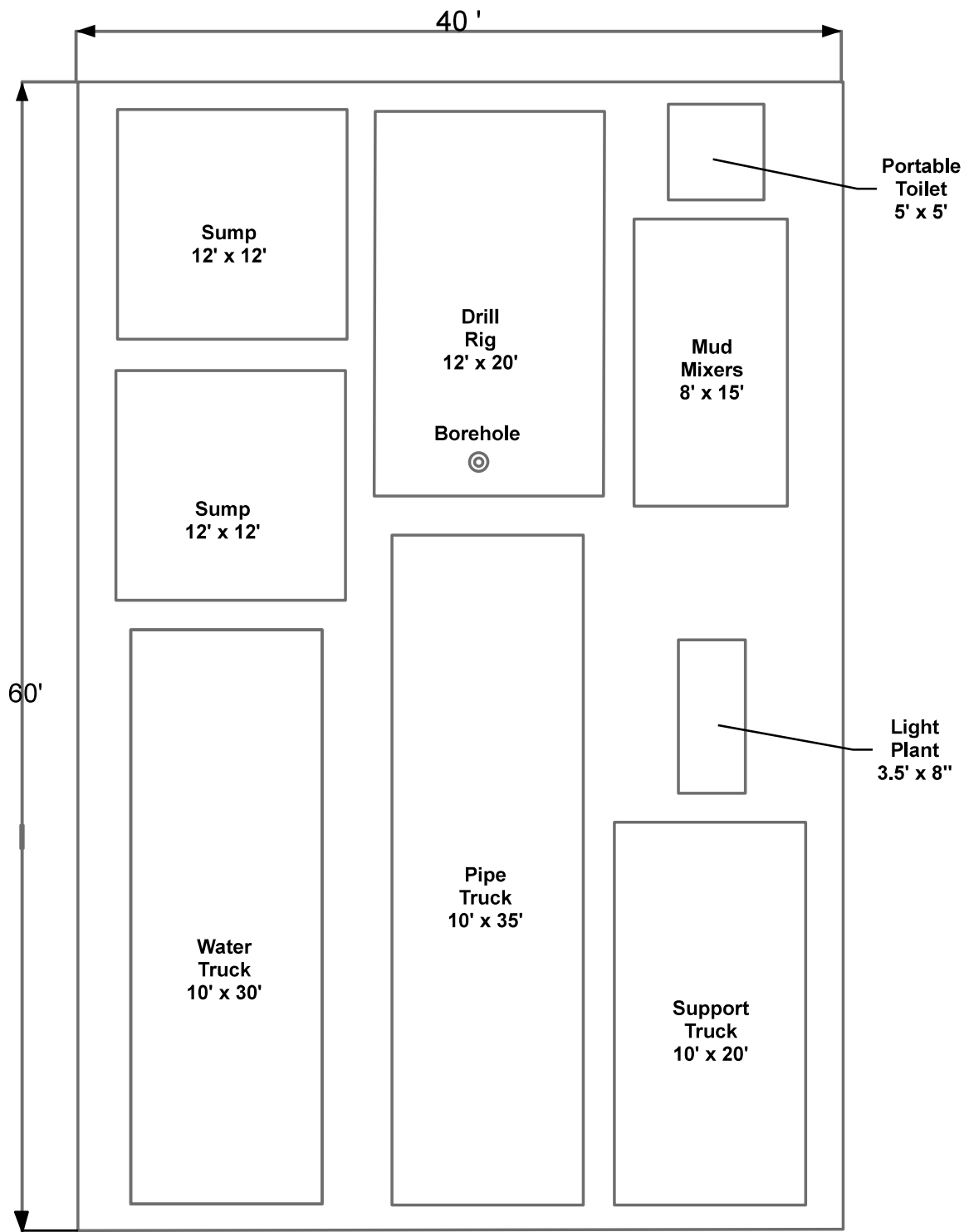
**SMP GOLD CORP.**  
**ORO CRUZ EXPLORATION PROJECT**

PORTAL STAGING AREA GRADING

SCALE: HORZ: AS SHOWN  
 VERT: AS SHOWN

DRAWN BY: G.CAMUS  
 CHECKED BY: APS

**FIGURE 4**

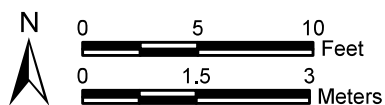


Note: Layout will vary depending on site conditions

**SMP GOLD CORP.**  
Oro Cruz Exploration  
Plan of Operations

TYPICAL ROAD-ACCESSED DRILL SITE LAYOUT

Figure 5





## **Appendix B: Conservation Management Actions**

LUPA Wide						
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments	
Biological Resources	LUPA-BIO-1	<p>Conduct a habitat assessment (see Glossary of Terms) of Focus and BLM Special Status Species' suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms) for Focus and BLM Special Status Species. If required by the relevant species specific CMAs, conduct any subsequent protocol or adequate presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat.</p> <ul style="list-style-type: none"> <li>• BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season.</li> </ul> <p>Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.</p>	Yes		A habitat assessment was conducted during the 2021 biological survey and the resulting report was approved by the BLM. The Biological Resources Assessment is included within Appendix E of the EA and is on file with the BLM El Centro Field Office. Further mitigation would not be necessary in addition to the PDFs and an additional habitat assessment would not be required as it was already conducted; therefore this CMA would not be required to be implemented.	
	LUPA-BIO-2	<p>Designated biologist(s) (see Glossary of Terms), will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.</p>	Yes		Required pre-clearance surveys and continued monitoring would take place during all phases of the Proposed Action by a BLM-approved biologist per the PDFs in Appendix F of the EA. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented.	
Resource Setback Standards	LUPA-BIO-3	<p>Resource setbacks (see Glossary of Terms) have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions (see Glossary of Terms), as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:</p> <ul style="list-style-type: none"> <li>• The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1).</li> <li>• The edge of the mapped riparian vegetation or the Federal Emergency Management Agency (FEMA) 100-year floodplain, whichever is greater, for the Mojave River.</li> <li>• The edge of the vegetation extent for specified Focus and BLM sensitive plant species.</li> <li>• The edge of suitable habitat or active nest substrates for the appropriate Focus and BLM Special Status Species.</li> </ul>	Yes		Avoidance buffers to protect special status species such as desert tortoise, migratory birds including raptors, and bats would be implemented per the PDFs within Appendix F of the EA. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented.	
Seasonal Restrictions	LUPA-BIO-4	<p>For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities. Species-specific seasonal restriction dates are described in the applicable CMAs. Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.</p>	Yes		Seasonal surface occupancy restrictions would be put in place for desert tortoise, migratory birds, and bats as defined in Appendix F of the EA. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented.	
Worker Education	LUPA-BIO-5	<p>All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:</p> <ul style="list-style-type: none"> <li>• Site-specific biological and nonbiological resources.</li> <li>• Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.</li> <li>• The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.</li> <li>• Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.</li> <li>• Measures that personnel can take to promote the conservation of biological and nonbiological resources.</li> </ul>	Yes		A worker education program would be implemented as associated with desert tortoise protection, raven control, and speed limits per Section 5.6 of the Plan of Operations and included as a PDF within Appendix F of the EA. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented.	
Subsidized Predators Standards	LUPA-BIO-6	<p>Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:</p> <ul style="list-style-type: none"> <li>• Common Raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens.</li> <li>• The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.</li> <li>• Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species.</li> </ul> <p>All activity work areas will be kept free of trash and debris. Particular attention will be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.</p> <ul style="list-style-type: none"> <li>• In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.</li> </ul>	Yes		Proposed desert tortoise protective measures, measures to prevent perching and nesting, water usage guidelines, and measures to control debris and trash would all be implemented per the PDFs in Appendix F of the EA. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented.	

LUPA Wide					
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
Restoration of Areas Disturbed by Construction Activities But Not Converted by Long-Term Disturbance	LUPA-BIO-7	<p>Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below:</p> <ul style="list-style-type: none"> <li>• Implement site-specific habitat restoration actions for the areas affected including specifying and using: <ul style="list-style-type: none"> <li>○ The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed)</li> <li>○ Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities)</li> <li>○ Equipment</li> <li>○ Timing (e.g., appropriate season, sufficient rainfall)</li> <li>○ Location</li> <li>○ Success criteria</li> <li>○ Monitoring measures</li> <li>○ Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands.</li> </ul> </li> <li>• Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site.</li> <li>• Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.</li> </ul>	Yes		The Project would reclaim disturbed areas, except for the proposed permanent access road for access to Drill Area 1 using site-appropriate, BLM-approved native seed mixtures that are weed-free and compatible with landscape conditions. The Reclamation Plan is included within Appendix E of the EA, and Appendix F further describes PDFs that would be implemented for revegetation. Further mitigation would not be necessary in addition to the PDFs; however, should additional revegetation measures be deemed necessary in combination with those outlined in the Reclamation Plan, this CMA would be implemented.
General Closure and Decommissioning Standards	LUPA-BIO-8	<p>All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM, and that at a minimum address the following:</p> <ul style="list-style-type: none"> <li>• Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), and criteria for success (including quantifiable and measurable criteria).</li> <li>• Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists.</li> <li>• Restoring vegetation as well as soil profiles and functions that will support and maintain native plant communities, associated carbon sequestration and nutrient cycling processes, and native wildlife species.</li> <li>• Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting and climate projections.</li> </ul>	No	Land use does not occur on project site.	The Project proposes short-term exploration activities and would not entail renewable energy activities, thus no closure and decommissioning processes would be required.
Water and Wetland Dependent Species Resources	LUPA-BIO-9	<p>Implement the following general LUPA CMA for water and wetland dependent resources</p> <ul style="list-style-type: none"> <li>• Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following: <ul style="list-style-type: none"> <li>○ On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.</li> <li>○ Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.</li> <li>○ Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.</li> </ul> </li> <li>• Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following: <ul style="list-style-type: none"> <li>○ Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.</li> <li>○ Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.</li> <li>○ Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.</li> <li>○ Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized.</li> <li>○ Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins.</li> <li>○ Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.</li> <li>○ Project applicants for sites that may affect intermittent and perennial streams, springs, swales, ephemeral washes, wetland vegetation, other DRECP water land covers, or sites occupied by aquatic or riparian Focus and BLM Special Status Species due to groundwater or surface water extraction will conduct hydrologic studies during project planning to determine the potential effect of groundwater and surface water extraction on the hydrologic unit. These studies will include both watershed effects as well as effects on perched, alluvial, and regional aquifers. Projects that are likely to affect ground-water resources in a manner that would result in substantial loss of riparian or wetland communities or habitat for riparian or aquatic Focus and BLM Special Status Species are prohibited.</li> <li>○ The use of evaporation ponds for water management will be avoided when the water could harm birds or other terrestrial wildlife due to constituents of concern present in the wastewater (e.g., selenium, hypersalinity, etc.). Evaporation ponds will be configured to minimize attractiveness to shorebirds (e.g., maintain water depths over two feet; maintain steep slopes along edge; enclose evaporation ponds in long-term structures; or obscure evaporation ponds from view using materials that blend in with the natural surroundings).</li> </ul> </li> <li>• Ramps that allow the egress of wildlife from ponds or other water management infrastructure will be installed.</li> </ul>	Yes		The Project does not trigger any waste discharge requirements under Title 27, CCR, Section 20005 et seq. Construction Stormwater General Permits are required pursuant to CGP Regulation (NPDES No. CAS000002; SWRCB Order No. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ). A Stormwater Pollution Prevention Plan (SWPPP) would be developed and implemented to control sedimentation from disturbance. Best Management Practices (BMPs) would be installed to manage disturbed surfaces. A detailed Spill Containment Plan is identified to prevent the spread of any accidental leakage in storage, fuel and lubricants per the PDFs in Appendix F. Only minor servicing of mobile equipment (greasing and periodic fueling) would be conducted on BLM lands, limiting the potential for diesel fuel spills. Spill response kits would be maintained, pollutants generated would be properly disposed of in accordance with applicable regulations. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented.

LUPA Wide					
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
Standard Practices for Weed Management	LUPA-BIO-10	<p>Consistent with BLM state and national policies and guidance, integrated weed management actions, will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:</p> <ul style="list-style-type: none"> <li>• Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.</li> <li>• Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.</li> <li>• Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds.</li> <li>• Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.</li> <li>• Reestablish native vegetation quickly on disturbed sites.</li> <li>• Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas.</li> <li>• Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.</li> </ul>	Yes		This CMA would be implemented under the Project. SMP would be required to thoroughly clean the tires and undercarriage of vehicles entering or reentering the Project site to remove potential weeds, maintain vehicle wash and inspection stations, and closely monitor materials brought to site, in addition to the PDFs included in Appendix F for revegetation materials and invasive and non-native species management.
Nuisance Animals and Invasive Species	LUPA-BIO-11	<p>Implement the following CMAs for controlling nuisance animals and invasive species:</p> <ul style="list-style-type: none"> <li>• No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur.</li> <li>• Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and Arundo donax (giant reed). Manage herbicides consistent with the most current national and California BLM policies.</li> <li>• Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.</li> <li>• Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.</li> <li>• When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.</li> </ul>	No		The Project does not propose use of herbicide, pesticides, rodenticides, or insecticides.
Noise	LUPA-BIO-12	<p>For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise:</p> <ul style="list-style-type: none"> <li>• To the extent feasible, and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of BLM sensitive wildlife species and their suitable habitat.</li> <li>• Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.</li> <li>• Use noise controls on standard construction equipment including mufflers to reduce noise</li> </ul>	Yes		This CMA would be required for implementation. The Project would be required to implement noise controls to the extent feasible given the potential presence of desert tortoise and BLM Sensitive bat species.
General Siting and Design	LUPA-BIO-13	<p>Implement the following CMA for project siting and design</p> <ul style="list-style-type: none"> <li>• To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species (see "avoid to the maximum extent practicable" in Glossary of Terms).</li> <li>• The siting of projects along the edges (i.e. general linkage border) of the biological linkages identified in Appendix D (Figures D-1 and D-2) will be configured (1) to maximize the retention of microphyll woodlands and their constituent vegetation type and inclusion of other physical and biological features conducive to Focus and BLM Special Status Species' dispersal, and (2) informed by existing available information on modeled focus and BLM Special Status Species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, projects will be sited and designed to maintain the function of F Special Status Species connectivity and their associated habitats in the following linkage and connectivity areas: <ul style="list-style-type: none"> <li>○ Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains (the majority of this linkage is within the Chuckwalla ACEC and Mule-McCoy Linkage ACEC) .</li> <li>○ Within a 3-mile-wide linkage across Interstate 10 to connect the Chuckwalla and Palen mountains.</li> <li>○ Within a 1.5-mile-wide linkage across Interstate 10 to connect the Chuckwalla Mountains to the Chuckwalla Valley east of Desert Center.</li> <li>○ The confluence of Milpitas Wash and Colorado River floodplain within 2 miles of California State Route 78 (this linkage is entirely within the Chuckwalla ACEC) .</li> </ul> </li> <li>• Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species.</li> <li>• Long-term nighttime lighting on project features will be limited to the minimum necessary for project security, safety, and compliance with Federal Aviation Administration requirements and will avoid the use of constant-burn lighting.</li> <li>• All long-term nighttime lighting will be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for Focus and BLM Special Status Species. Long-term nighttime lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure.</li> <li>• To the maximum extent practicable (see Glossary of Terms), restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.</li> <li>• To the maximum extent practicable (see Glossary of Terms), confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross-country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.</li> </ul>	Yes		The Project would implement measures to minimize surface disturbance and vegetation disturbance would be avoided to the maximum extent possible per the Plan of Operations (SMP 2021) and the PDFs included in Appendix F. Special status plant and wildlife species are analyzed within the EA. Additional measures under this CMA, as applicable and determined by the BLM, would be implemented.

LUPA Wide					
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
		<ul style="list-style-type: none"> <li>To the maximum extent practicable(see Glossary of Terms) , construction of new roads and/or routes will be avoided within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of “no net gain” of project roads and/or routes</li> <li>To the maximum extent practicable (see Glossary of Terms), any new road and/or route considered within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species will not be paved so as not to negatively affect the function of identified linkages.</li> <li>Use nontoxic road sealants and soil stabilizing agents.</li> </ul>			
Biology: General Standard Practices	LUPA-BIO-14	<p>Implement the following general standard practices to protect Focus and BLM Special Status Species:</p> <ul style="list-style-type: none"> <li>Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited.</li> <li>Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed.</li> <li>Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act.</li> <li>All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed.</li> <li>All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.</li> <li>Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.</li> </ul>	Yes		A worker education program, food/trash abatement measures, domestic pet prohibition, wildlife entrapment protective measures, and minimizing vegetative disturbance would be implemented per the PDFs in Appendix F; therefore, this CMA would not be required in addition to the proposed PDFs.
	LUPA-BIO-15	Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.	Yes		The Project is designed to minimize impacts, and additional measures would be implemented as appropriate as determined by the BLM; therefore, this CMA is a duplication of the PDFs already included within Appendix F and therefore would not be required for implementation.
Activity-Specific Bird and Bat CMAs	LUPA-BIO-16	<p>For activities that may impact Focus and BLM sensitive birds, protected by the ESA and/or Migratory Bird Treaty Act of 1918, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity -specific bird and bat actions is to avoid and minimize direct mortality of birds and bats from the construction, operation, maintenance, and decommissioning of the specific activities.</p> <p>Activity-specific measures to avoid and minimize impacts may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>Siting and designing activities will avoid high bird and bat movement areas that separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers.</li> <li>For activities that impact bird and bat Focus and BLM Special Status Species, during project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the project site using the most current survey methods and best procedures available at the time.</li> <li>Reusing or co-locating new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks.</li> <li>Reducing bird and bat collision hazards by utilizing techniques such as unguyed monopole towers or tubular towers. Where the use of guywires is unavoidable, demarcate guywires using the best available methods to minimize avian species strikes.</li> <li>When fencing is necessary, use bird and bat compatible design standards.</li> <li>Using lighting that does not attract birds and bats or their prey to project sites including using non-steady burning lights (red, dual red and white strobe, strobe- like flashing lights) to meet Federal Aviation Administration requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen).</li> <li>Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses.</li> <li>Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring</li> </ul>	Yes		SMP has committed to implement species-specific avoidance buffers around raptor and migratory bird nests as well as bat maternity roosts as described within Chapter 3 of the EA and within the PDFs in Appendix F. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented in addition to the proposed PDFs in Appendix F.
Activity-Specific Bird and Bat CMAs	LUPA-BIO-17	<p>For activities that may result in mortality to Focus and BLM Special-Status bird and bat species, a Bird and Bat Conservation Strategy (BBCS) will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The BBCS actions for impacts to birds and bats during these activities will be determined by the activity-specific bird and bat operational actions. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate, and may include, but is not limited to:</p> <ul style="list-style-type: none"> <li>Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring.</li> <li>Activity-specific operational avoidance and minimization actions that reduce the level of mortality on the populations of bird and bat species, such as: <ul style="list-style-type: none"> <li>Use techniques that minimize attraction of birds to hazardous situations that are mistaken to be or simulate natural habitats (e.g., bodies of water).</li> <li>Implement operational management techniques that minimize impacts to migratory birds during diurnal and seasonal cycles (e.g., positioning of heliostats to decrease surface area exposed to avian species).</li> <li>Evaluation and installation of the best available bird and bat detection and deterrent technologies available at the time of construction.</li> </ul> </li> </ul> <p>Known important Focus and BLM Special Status bird areas are:</p> <ul style="list-style-type: none"> <li>Dry lakes and playas of the north Mojave region, which include China Lake, Koehn Lake, Harper Lake, and Searles Lake (as shown in the Audubon Important Bird Areas in Appendix D)</li> <li>Antelope Valley (as shown in the Audubon Important Bird Areas in Appendix D)</li> <li>Lower Colorado River Valley (as shown in the Audubon Important Bird Areas in Appendix D)</li> </ul>	Yes		SMP has committed to implement species-specific avoidance buffers around raptor and migratory bird nests as well as bat maternity roosts, and measures to minimize wildlife mortalities, as described within Chapter 3 of the EA and within the PDFs in Appendix F. Further mitigation would not be necessary in addition to the PDFs; therefore, this CMA would not be required to be implemented in addition to the proposed PDFs in Appendix F.

LUPA Wide					
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
		<ul style="list-style-type: none"> <li>The Salton Sea and bordering areas including agricultural land of the Imperial Valley (as shown in the Audubon Important Bird Areas in Appendix D)</li> <li>Documented avian movement corridors along the north slope of the San Gabriel and San Bernardino mountain ranges</li> <li>Other regionally important seasonal use areas and migratory corridors identified in future studies or otherwise documented in the scientific literature over the term of the LUPA</li> </ul> <p>The following provides the DRECP vegetation type, and Focus and BLM Special Status Species biological CMAs to be implemented throughout the LUPA Decision Area.</p> <p><b>Riparian and Wetland Vegetation Types and Associated Species (RIPWET)</b></p> <p><u>Riparian Vegetation Types</u></p> <ul style="list-style-type: none"> <li>Madrean Warm Semi-Desert Wash Woodland/Scrub</li> <li>Mojavean Semi-Desert Wash Scrub</li> <li>Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub</li> <li>Southwestern North American Riparian Evergreen and Deciduous Woodland</li> <li>Southwestern North American Riparian/Wash Scrub</li> </ul> <p><u>Wetland Vegetation Types</u></p> <ul style="list-style-type: none"> <li>Arid west freshwater emergent marsh</li> <li>Californian Warm Temperate Marsh/Seep</li> <li>North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat</li> <li>Southwestern North American Salt Basin and High Marsh</li> </ul> <p><u>Riparian and Wetland Bird Focus Species</u></p> <ul style="list-style-type: none"> <li>Willow Flycatcher</li> <li>Southwestern Willow Flycatcher</li> <li>Least Bell's Vireo</li> <li>Western Yellow-billed Cuckoo</li> <li>Yuma Clapper Rail</li> <li>California Black Rail</li> <li>Tricolored Blackbird</li> </ul> <p><u>Fish Focus Species</u></p> <ul style="list-style-type: none"> <li>Desert pupfish</li> <li>Mohave Tui Chub</li> <li>Owens Tui Chub</li> <li>Owens Pupfish</li> </ul>			
Other Riparian & Wetland Focus Species: Tehachapi Slender Salamander	LUPA-BIO-RIPWET-1	<p>The riparian and wetland DRECP vegetation types and other features listed in <b>Table 17</b> will be avoided to the maximum extent practicable, except for allowable minor incursions (see Glossary of Terms for "avoidance to the maximum extent practicable" and "minor incursion") with the specified setbacks.</p> <p>For minor incursion (see "minor incursion" in the Glossary of Terms) to the DRECP riparian vegetation types, wetland vegetation types, or encroachments on the setbacks listed in <b>Table 17</b>, the hydrologic function of the avoided riparian or wetland communities will be maintained.</p> <ul style="list-style-type: none"> <li>Minor incursions in the riparian and wetland vegetation types or other features including the setbacks listed in <b>Table 17</b> will occur outside of the avian nesting season, February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW if the minor incursion(s) is likely to result in impacts to nesting birds.</li> </ul>	No	Resource not found on the project site	There is no riparian or wetland vegetation present within the Project Area.
	LUPA-BIO-RIPWET-2	Hydrologic function of the following DRECP vegetation types will be maintained: North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat, Southwestern North American Salt Basin and High Marsh, and other undifferentiated wetland-related land covers (i.e., "Playa," "Wetland," and "Open Water").	No	Resource not found on the project site	There is no riparian or wetland vegetation present within the Project Area.
BLM Special Status Riparian Bird Species	LUPA-BIO-RIPWET-3	<p>For activities that occur within 0.25 mile of a riparian or wetland DRECP vegetation type and may impact BLM Special Status riparian and wetland birds species, conduct a pre-construction/activity nesting bird survey for BLM Special Status riparian and wetland birds according to agency-approved protocols.</p> <ul style="list-style-type: none"> <li>Based on the results of the nesting bird survey above, setback activities that are likely to impact BLM Special Status riparian and wetland bird species, including but not limited to pre-construction, construction and decommissioning, 0.25 mile from active nests Special Status during the breeding season (February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW). For activities in areas covered by this provision that occur during the breeding season and that last longer than one week, nesting bird surveys may need to be repeated, as determined by BLM, in coordination with USFWS and CDFW, as appropriate. No pre-activity nesting bird surveys are necessary for activities occurring outside of the breeding season.</li> </ul>	No	Project is not located in or near the area specified in the CMA.	There is no riparian or wetland vegetation present within the Project Area.
Federally Listed Fish Species	LUPA-BIO-RIPWET-4	<p>Setback pre-construction, construction, and decommissioning activities and other activities that may impact federally listed fish species, 0.25 mile from the edge of existing or newly discovered occurrences of federally listed fish species, except for minor incursions (see Glossary of Terms).</p> <ul style="list-style-type: none"> <li>Demonstrate neutral or beneficial long-term hydrologic effects on federally listed fish species and the adjoining riparian and wetland habitat prior to seeking authorization for and commencing a minor incursion.</li> </ul>	No	Resource not found on the project site	There are no fish species present within the Project Area.
	LUPA-BIO-RIPWET-5	Site and design activities to fully avoid operational impacts to existing and newly discovered occurrences of federally listed fish species.	No	Resource not found on the project site	There are no fish species present within the Project Area.
Tehachapi Slender Salamander	LUPA-BIO-RIPWET-6	Avoid pre-construction, construction, and decommissioning activities or other activities that may impact the Tehachapi slender salamander within 0.25 mile of existing or newly discovered occurrences of or suitable habitat for Tehachapi slender salamander, except for minor incursions (see Glossary of Terms).	No	Project not within the range or habitat of this species.	The Tehachapi Slender Salamander does not occur within BLM El Centro Field Office-administered lands.
	LUPA-BIO-RIPWET-7	<p>Construct culverts or other suitable below-grade crossings for new or improved roadways that bisect suitable habitat for the Tehachapi Slender Salamander.</p> <ul style="list-style-type: none"> <li>Construct barriers to reduce at-grade crossings along new or improved roadways that bisect suitable habitat.</li> </ul>	No	Project not within the range or habitat of this species.	The Tehachapi Slender Salamander does not occur within BLM El Centro Field Office-administered lands.
Dune DRECP Vegetation Types, Aeolian Processes and Associated Species (DUNE): Aeolian Processes	LUPA-BIO-DUNE-1	Because DRECP sand dune vegetation types and Aeolian sand transport corridors are, by definition, shifting resources, activities that potentially occur within or bordering the sand dune DRECP vegetation types and/or Aeolian sand transport corridors must conduct studies to verify the location [refer to Appendix D, Figure D-7] and extent of the sand resource(s) for the activity-specific environmental analysis to determine:	No	Project is not located in or near the area specified in the CMA.	There are no Aeolian sand transport corridors within or in the vicinity of the Project Area.

LUPA Wide						
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments	
		<ul style="list-style-type: none"> <li>Whether the proposed activity(s) occur within a sand dune or an Aeolian sand transport corridor</li> <li>If the activity(s) is subject to dune/Aeolian sand transport corridor CMAs</li> <li>If the activity(s) needs to be reconfigured to satisfy applicable avoidance requirements</li> </ul>				
	LUPA-BIO-DUNE-2	Activities that potentially affect the amount of sand entering or transported within Aeolian sand transport corridors will be designed and operated to: <ul style="list-style-type: none"> <li>Maintain the quality and function of Aeolian transport corridors and sand deposition zones, unless related to maintenance of existing [at the time of the DRECP LUPA ROD] facilities/operations/activities</li> <li>Avoid a reduction in sand-bearing sediments within the Aeolian system</li> <li>Minimize mortality to DUNE associated Focus and BLM Special Status Species</li> </ul>	No	Project is not located in or near the area specified in the CMA.	There are no Aeolian sand transport corridors within or in the vicinity of the Project Area.	
	LUPA-BIO-DUNE-3	Any facilities or activities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the Aeolian corridor in a way that maintains the Aeolian sorting and transport to downwind deposition zones. Site designs for maintaining this transport function must be approved by BLM in coordination with USFWS and CDFW as appropriate.	No	Project is not located in or near the area specified in the CMA.	There are no Aeolian sand transport corridors within or in the vicinity of the Project Area.	
Mohave Fringe-Toed Lizard	LUPA-BIO-DUNE-4	Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center.  For minor incursions (see "minor incursion" in the Glossary of Terms) into sand dunes and sand transport areas the activity will be sited in the mapped zone with the least impacts to sand dunes and sand transport and Mojave fringe-toed lizards.	No	Project not within the range or habitat of this species.	The Mohave Fringe-Toed Lizard does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-DUNE-5	If suitable habitat characteristics are identified during the habitat assessment, clearance surveys (see Glossary of Terms) for Mojave fringe-toed lizard will be performed in suitable habitat areas.  The following CMAs will be implemented for bat Focus and BLM Special Status Species, including but not limited to those listed below: <ul style="list-style-type: none"> <li>California Leaf-nosed Bat</li> <li>Pallid Bat</li> <li>Townsend's Big-eared Bat</li> </ul>	No	Project not within the range or habitat of this species.	The Mohave Fringe-Toed Lizard does not occur within BLM El Centro Field Office-administered lands.	
Bat Species (BAT)	LUPA-BIO-BAT-1	Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below. Refer to CMA <b>DFA-VPL-BIO-BAT-1</b> for distances within DFAs and VPLs.	Yes		The Project would include a PDF to implement a 500-foot avoidance buffer of bat maternity roosts during the bat maternity season, as specified in the PDFs in Appendix F. This CMA would not be required to be implemented as it is a duplicate of the already proposed PDFs.	
	LUPA-BIO-BAT-2	Mines will be assumed to be occupied bat roosts, unless appropriate surveys for bat use have been conducted during all seasons (including maternity, lekking or swarming, and winter use). Mines not considered potential bat roosts are only those that have no structure/workings (adits or shafts or crevices out of view).  The following CMAs will be implemented for all plant Focus and BLM Special Status Species, including but not limited to those listed below: <ul style="list-style-type: none"> <li>Alkali mariposa-lily</li> <li>Bakersfield cactus</li> <li>Barstow woolly sunflower</li> <li>Desert cymopterus</li> <li>Little San Bernardino Mountains linanthus</li> <li>Mojave monkeyflower</li> <li>Mojave tarplant</li> <li>Owens Valley checkerbloom</li> <li>Parish's daisy</li> <li>Triple-ribbed milk-vetch</li> </ul>	Yes		The Project would include a PDF to implement a 500-foot avoidance buffer of bat maternity roosts during the bat maternity season, as specified in the PDFs in Appendix F. This CMA would not be required to be implemented as it is a duplicate of the already proposed PDFs.	
Plant Species (PLANT): Plant Focus and BLM Special Status Species CMAs	LUPA-BIO-PLANT-1	Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant Focus and BLM Special Status Species.	Yes		A habitat assessment was conducted during the 2021 biological survey and the resulting report was approved by the BLM. The Biological Resources Assessment is included within Appendix E of the EA and is on file with the BLM El Centro Field Office. Further mitigation would not be necessary in addition to the PDFs and an additional habitat assessment would not be required; therefore, this CMA would not be required for implementation.	
	LUPA-BIO-PLANT-2	Implement an avoidance setback of 0.25 mile for all Focus and BLM Special Status Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species (see Appendix Q, Baseline Biology Report, in the Proposed LUPA and Final EIS [2015], or the most recent data and modeling).	Yes		No avoidance buffers for special status plants have been identified. Should special status plants be identified upon Project surface occupancy, this CMA would be implemented in addition to the PDFs and mitigation measures in Appendix F.	
	LUPA-BIO-PLANT-3	Impacts to suitable habitat for Focus and BLM Special Status plant species should be avoided to the extent feasible, and are limited [capped] to a maximum of 1% of their suitable habitat throughout the entire LUPA Decision Area. The baseline condition for measuring suitable habitat is the DRECP modeled suitable habitat for these species utilized in the EIS analysis (2014 and 2015), or the most recent suitable habitat modeling.  For those plants with Species Specific DFA Suitable Habitat Impact Caps listed in <b>Table 23</b> , those caps apply in the DFAs only. Refer to CMA DFA-PLANT-1.	No	Project is not located in or near the area specified in the CMA.	Ground disturbance caps do not apply to mining and mineral exploration projects.	
Special Vegetation Features (SVF)	LUPA-BIO-SVF-1	For activity-specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: Yucca clones, creosote rings, Saguaro cactus, Joshua tree woodland, microphyll woodland, Crucifixion thorn stands. BLM guidelines for mapping/surveying cactus, yuccas, and succulents shall be followed.	Yes	Resource not found on the project site	Special status vegetation species specified have not been identified within the Project Area; however a habitat assessment identified some limited areas of microphyll woodland, however, direct impacts from project disturbance to this habitat is not anticipated. Pre-construction surveys would occur prior to any surface disturbing activities as outlined in the measures in Appendix F of the EA/MND, and this CMA would be implemented as necessary in coordination with the BLM.	
	LUPA-BIO-SVF-2	Yucca clones larger than 3 meters in diameter (longest diameter if the clone forms an ellipse rather than a circular ring) shall be avoided.	No	Resource not found on the project site	This species is not present within the Project Area.	
	LUPA-BIO-SVF-3	Creosote bush rings (see Glossary of Terms) larger than 5 meters in diameter (longest diameter if the "ring" forms an ellipse rather than a circle) shall be avoided.	No	Resource not found on the project site	This species is not present within the Project Area.	
	LUPA-BIO-SVF-4	Saguaro cactus should be managed in such a way as to provide long-term habitat for the California populations not just individual plants, except in DFAs.	No	Resource not found on the project site	This species is not present within the Project Area.	
	LUPA-BIO-SVF-5	Joshua tree woodland ( <i>Yucca brevifolia</i> Woodland Alliance): impacts to Joshua tree woodlands (see Glossary of Terms) will be avoided to the maximum extent practicable (see Glossary of Terms), except for minor incursions (see Glossary of Terms).	No	Project not within the range or habitat of this species.	Joshua trees do not occur within BLM El Centro Field Office-administered lands.	

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Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
	LUPA-BIO-SVF-6	Microphyll woodland: impacts to microphyll woodland (see Glossary of Terms) will be avoided, except for minor incursions (see Glossary of Terms).	Yes		There are very limited microphyll woodland occurrences within the Project Area; however, if identified upon Project surface occupancy, this CMA would be implemented.
	LUPA-BIO-SVF-7	Crucifixion thorn stands: ( <i>Castela emoryi</i> Shrubland Special Stands) Crucifixion thorn stands with greater than 100 individuals will be avoided.	No	Resource not found on the project site	This species is not present within the Project Area.
General Vegetation Management (VEG)	LUPA-BIO-VEG-1	Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.	Yes		Any potential disturbance would be minimized per the measures in the Reclamation Plan. This CMA would be implemented should additional measures be determined necessary by the BLM for impact minimization to these species.
	LUPA-BIO-VEG-2	Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.	Yes		The detailed Reclamation Plan has been submitted to the Imperial County Planning Department and is under review with the California Division of Mining and Reclamation, which identifies appropriate measures using existing dead/downed wood; however, this CMA would be required to be implemented for appropriate monitoring.
	LUPA-BIO-VEG-3	Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.	No	Land use does not occur on project site.	The Project would not involve collection of plant material.
	LUPA-BIO-VEG-4	Within the Bishop Field Office area, provide yearlong protection of endangered, threatened, candidate, and sensitive plant and animal habitats. Yearlong protection means that no discretionary actions which would adversely affect target resources will be allowed.	No	Project is not located in or near the area specified in the CMA.	This CMA is specific to the Bishop Field Office.
	LUPA-BIO-VEG-5	All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.	No	Land use does not occur on project site.	No salvage or transplant of cactus, yucca, other succulents, or BLM Sensitive Species would occur under the Project.
	LUPA-BIO-VEG-6	BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.	No	Land use does not occur on project site.	The Project would not involve disposal of succulents through public sale.
Individual Focus Species (IFS): Desert Tortoise	LUPA-BIO-IFS-1	Activities within desert tortoise linkages, identified in Appendix D, that may have a negative impact on the linkage will require an evaluation, in the environmental document(s), of the effects on the maintenance of long-term viable desert tortoise populations within the affected linkage. The analysis will consider the amount of suitable habitat, including climate refugia, required to ensure long-term viability within each linkage given the linkage's population density, long-term demographic and genetic needs, degree of existing habitat disturbance/impacts, mortality sources, and most up-to-date population viability modeling. Activities that would compromise the long-term viability of a linkage population or the function of the linkage, as determined by the BLM in coordination with USFWS and CDFW, are prohibited and will require reconfiguration or re-siting.	No	Project is not located in or near the area specified in the CMA.	The Project would not occur within desert tortoise linkages.
	LUPA-BIO-IFS-2	Construction of new roads and/or routes will be avoided to the maximum extent practicable (see Glossary of Terms) within desert tortoise habitat in tortoise conservation areas (TCAs) or tortoise linkages identified in Appendix D, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern for desert tortoise. TCAs and identified linkages should have the goal of "no net gain" of road density.  Any new road considered within a TCA or identified linkage will not be paved and will be designed and sited to minimize the effect to the function of identified linkages or local desert tortoise populations and shall have a maximum speed limit of 25 miles per hour.  Roads requiring the installation of long-term desert tortoise exclusion fencing for construction or operation will incorporate wildlife underpasses (e.g., culverts) to reduce population fragmentation.	No	Project is not located in or near the area specified in the CMA.	The Project would not occur within a Tortoise Conservation Area.
	LUPA-BIO-IFS-3	All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.	No	Land use does not occur on project site.	No culverts would be constructed under the Project. Barriers would be installed to prevent unauthorized vehicular traffic from interfering with the reclamation of access roads. Conceptual locations of the planned safety barriers (or berms) are depicted in Figures 3b and 3g of the Plan of Operations and would be approximately 6 feet in height. Barriers would be temporary and would not have the length to restrict access by desert tortoises.
	LUPA-BIO-IFS-4	In areas where protocol and clearance surveys are required (see Appendix D), prior to construction or commencement of any long-term activity that is likely to adversely affect desert tortoises, desert tortoise exclusion fencing shall be installed around the perimeter of the activity footprint (see Glossary of Terms) in accordance with the Desert Tortoise Field Manual (USFWS 2009) or most up-to-date USFWS protocol. Additionally, short-term desert tortoise exclusion fencing will be installed around short-term construction and/or activity areas (e.g., staging areas, storage yards, excavations, and linear facilities), as appropriate, per the Desert Tortoise Field Manual (USFWS 2009) or most up-to-date USFWS protocol.  • Exemption from desert tortoise protocol survey requirements can be obtained from BLM, in coordination with USFWS, and CDFW as applicable, on a case-by-case basis if a designated biologist determines the activity site does not contain the elements of desert tortoise habitat, is unviable for occupancy, or if baseline studies inferred absence during the current or previous active season.  • Construction of desert tortoise exclusion fences will occur during the time of year when tortoise are less active in order to minimize impacts and to accommodate subsequent desert tortoise surveys. Any exemption or modification of desert tortoise exclusion fencing requirements will be based on the specifics of the activity and the site-specific population and habitat parameters. Sites with low population density and disturbed, fragmented, or poor habitat are likely to be candidates for fencing requirement exemptions or modifications. Substitute measures, such as on-site biological monitors in the place of the fencing requirement, may be required, as appropriate.  • After an area is fenced, and until desert tortoises are removed, the designated biologist is responsible for ensuring that desert tortoises are not being exposed to extreme temperatures or predators as a result of their pacing the fence. Remedies may include the use of shelter sites placed along the fence, immediate translocation, removal to a secure holding area, or other means determined by the BLM, USFWS, and CDFW, as applicable. • Modification or elimination of the above requirement may also be approved if the activity design will allow retention of desert tortoise habitat within the footprint. If such a modification is approved, modified protective measures may be required to minimize impacts to desert tortoises that may reside within the activity area. • Immediately prior to desert tortoise exclusion fence construction, a designated biologist (see Glossary of Terms) will conduct a clearance survey of the fence alignment to clear desert tortoises from the proposed fence line's path. • All desert tortoise exclusion fencing will incorporate desert tortoise proof gates or other approved barriers to prevent access of desert tortoises to work sites through access road entry points. • Following installation, long-term desert tortoise exclusion fencing will be inspected for damage quarterly and within 48 hours of a surface flow of water due to a rain event that may damage the fencing. • All damage to long-term or short-term desert tortoise exclusion fencing will be immediately blocked to prevent desert tortoise access and repaired within 72 hours.	Yes		A BLM-qualified biologist and/or field contact representative would be present (March 15 - November 1) to oversee compliance with protective measures per the PDFs in Appendix F. Exclusionary fencing would be required to prevent desert tortoise crossings and collisions per the mitigation measures in Appendix F. This CMA would not be required to be implemented as it would duplicate the existing PDFs and BLM-required mitigation.



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Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments	
	LUPA-BIO-IFS-5	Following the clearance surveys (see Glossary of Terms) within sites that are fenced with long-term desert tortoise exclusion fencing a designated biologist (see Glossary of Terms) will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from harm's way. A designated biologist will inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys will not require inspection.	Yes		A BLM-qualified biologist and/or field contact representative would be present (March 15 - November 1) to oversee compliance with protective measures per the PDFs in Appendix F. Exclusionary fencing would be required to prevent desert tortoise crossings and collisions per the mitigation measures in Appendix F. This CMA would not be required to be implemented as it would duplicate the existing PDFs and BLM-required mitigation.	
	LUPA-BIO-IFS-6	When working in areas where protocol or clearance surveys are required (see Appendix D), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.	No	Land use does not occur on project site.	Geotechnical testing would not be utilized under the Project within the Project Area.	
	LUPA-BIO-IFS-7	A designated biologist (see Glossary of Terms) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.	No	Land use does not occur on project site.	Geotechnical boring would not occur under the Project within the Project Area.	
	LUPA-BIO-IFS-8	Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.	Yes		Specific protective measures for tortoises under vehicles are included in the PDFs in Appendix F. If desert tortoise are encountered during construction activities, work would be halted until a BLM-approved Qualified Biologist arrives to relocate the animal. No further mitigation would be required; therefore, this CMA would not be required to be implemented as it would duplicate the existing PDFs.	
	LUPA-BIO-IFS-9	Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.	Yes		The PDFs included in Appendix F state that vehicles would not exceed 20 miles per hour within the Project Area; therefore, this CMA would be implemented for areas that have not been cleared by pre-clearance surveys where desert tortoise may be impacted.	
Flat-Tailed Horned Lizard	LUPA-BIO-IFS-10	Comply with the conservation goals and objectives, criteria, and management planning actions identified in the most recent revision of the Flat-tailed Horned Lizard Rangeland Management Strategy (RMS). Activities will include appropriate design features using the most current information from the RMS and RMS Interagency Coordinating Committee to minimize adverse impacts during siting, design, pre-construction, construction, operation, and decommissioning; ensure that current or potential linkages and habitat quality are maintained; reduce mortality; minimize other adverse impacts during operation; and ensure that activities have a neutral or positive effect on the species.	No	Resource not found on the project site	Habitat is not included in the DRECP FTHL species distribution model or identified occurrences and this species has not been documented within the Project Area.	
Bendire's Thrasher	LUPA-BIO-IFS-11	If Bendire's thrasher is present, conduct appropriate activity-specific biological monitoring (see Glossary of Terms) to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).	No	Resource not found on the project site	Habitat is not included in the DRECP FTHL species distribution model or identified occurrences and this species has not been documented within the Project Area.	
Burrowing Owl	LUPA-BIO-IFS-12	If burrowing owls are present, a designated biologist (see Glossary of Terms) will conduct appropriate activity-specific biological monitoring (see Glossary of Terms) to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.	Yes		There is a low potential for occurrence within the Project Area; however, should burrowing owls be identified during pre-clearance surveys, this CMA would be implemented in addition the PDFs and mitigation measures in Appendix F.	
	LUPA-BIO-IFS-13	If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist (see Glossary of Terms) through the use of one-way doors will occur according to the specifications in Appendix D or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.	Yes		There is a low potential for occurrence within the Project Area; however, should burrowing owls be identified during pre-clearance surveys, this CMA would be implemented in addition the PDFs and mitigation measures in Appendix F.	
	LUPA-BIO-IFS-14	Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.	Yes		There is a low potential for occurrence within the Project Area; however, should burrowing owls be identified during pre-clearance surveys, this CMA would be implemented in addition the PDFs and mitigation measures in Appendix F.	
California Condor	LUPA-BIO-IFS-15	All activities will be designed and sited in a manner to avoid or minimize the likelihood of contact, injury, and mortality of California condors. If a condor is identified at a site, the BLM biological staff and USFWS will be immediately notified for guidance.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-16	Flight activity (e.g., surveys, construction, as well as operation and maintenance activities) related to any activities will not be allowed in the airspace extending to 3,000 feet above condor nest sites.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-17	In the range of the California condor, structures supported by guy wires will be marked with recommended bird deterrent devices at the appropriate spacing intervals.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-18	In the range of the California condor, all equipment and work-related materials that are potentially hazardous to condors, including but not limited to items that can be ingested, picked up, or carried away (e.g., loose-wires, open containers with fluids, some construction materials, etc.) will be kept in closed containers either in the work area or placed inside vehicles when they are not being used and at the end of every work day.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-19	In the range of the California condor, when feasible, ethylene glycol-based anti-freeze or other ethylene glycol-based liquid substances will be avoided, and propylene glycol-based antifreeze will be used. Vehicles and equipment using ethylene glycol based substances will be inspected before and after field use as well as during storage on sites for leaks and puddles. Standing fluid will be remediated without unnecessary delay.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-20	Activities that are determined to have a potential risk of taking condors will implement the best detect, deter, and curtailment strategy available at the time of the activity to minimize adverse effects, and avoid or minimize the likelihood of condor injury and mortality. (An example of a 2015 curtailment strategy is shutting down wind generation operations when condor(s) are present, or wind generation facilities switching to night operations only). The strategy must be approved by the BLM and USFWS, in coordination with CDFW as appropriate.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-21	If condors begin to regularly visit a site, BLM may require, in coordination with USFWS, and CDFW as appropriate, the implementation of additional measures to minimize potential impacts to condors. These measures will be based on best available data, activity and areas specifics, and may include, but are not limited to: • Barriers, including welded wire fabric or hardware cloth, will be installed to prevent access around any facility element that poses a danger to condors. • Stainless steel lines, rather than poly chemical lines will be used to preclude condors from obtaining and ingesting pieces of poly chemical lines. • Landing deterrents attached to the walking perching substrates, such as porcupine wire or Daddi Long Legs®.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	

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	LUPA-BIO-IFS-22	Operations and/or activities that reach an activity-specified trigger for condor injury and/or mortality as determined by BLM and USFWS, and CDFW as appropriate, will curtail operations and/or activities using best available techniques, as determined by BLM and USFWS, and CDFW as appropriate. (An example of a 2015 curtailment strategy is shutting down wind generation operations when condor(s) are present, or wind generation facilities switching to night operations only.) If curtailment techniques are not viable or available, then operations and/or activities will be suspended until the injury and/or condor mortality issue is resolved to the satisfaction of BLM and USFWS, and CDFW, as appropriate.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-23	In the range of the California condor, if an activity may have an impact on California condors, a Condor Operations Strategy (COS) will be developed and implemented on an activity-specific basis in order to avoid and/or reduce the likelihood of injury and mortality from activities. The COS shall be approved by BLM in coordination with USFWS, and CDFW as appropriate for third party activities, and may include, but is not limited, to detailing specifics on: the activity-specific detect, deter and curtailment strategy; monitoring approach to detect condor use of the site; adaptive management approach if condors are found to visit the site; and, activity-specific measures that assist in the recovery of condor.	No	Project not within the range or habitat of this species.	The California Condor does not occur within BLM El Centro Field Office-administered lands.	
Golden Eagle	LUPA-BIO-IFS-24	Provide protection from loss and harassment of active golden eagle nests through the following actions:  <ul style="list-style-type: none"> <li>Activities that may impact nesting golden eagles, will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.</li> </ul>	Yes		Pre-clearance migratory bird surveys would be conducted per the PDFs described in Appendix F; if activity of migratory bird nests, specifically golden eagle nests, are identified, species-specific avoidance buffers would be implemented and nest information would be submitted to the BLM. SMP would coordinate with USFWS as necessary and this CMA would be implemented should it be determined that golden eagle are present and may be impacted.	
	LUPA-BIO-IFS-25	Cumulative loss of golden eagle foraging habitat within a 1 to 4 mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20%. See <b>CONS-BIO-IFS-5</b> for the requirement in Conservation Lands.	No		Loss of golden eagle foraging habitat is not anticipated to exceed 20 percent. Pre-clearance migratory bird surveys would be conducted per the PDFs described in Appendix F; if activity of migratory bird nests are identified, species-specific avoidance buffers would be implemented. Should golden eagles be identified as present during the pre-clearance surveys, SMP would consult with the USFWS and this CMA would be implemented.	
	LUPA-BIO-IFS-26	For activities that impact golden eagles, applicants will conduct a risk assessment per the applicable USFWS guidance (e.g. the Eagle Conservation Plan Guidance) using best available information as well as the data collected in the pre-project golden eagle surveys.	No		Pre-clearance migratory bird surveys would be conducted per the PDFs described in Appendix F; if activity of migratory bird nests are identified, species-specific avoidance buffers would be implemented. Should golden eagles be identified as present during the pre-clearance surveys, SMP would consult with the USFWS and this CMA would be implemented.	
	LUPA-BIO-IFS-27	If a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit.	No		Pre-clearance migratory bird and raptor surveys would be conducted per the PDFs described in Appendix F; if activity of migratory bird and raptor nests is identified, species-specific avoidance buffers would be implemented. Coordination with USFWS for an eagle take permit is not anticipated based on results of the Biological Resources Assessment; however, should golden eagles be identified as present during the pre-clearance surveys, SMP would consult with the USFWS and this CMA would be implemented.	
	LUPA-BIO-IFS-28	In order to evaluate the potential risk to golden eagles, the following activities are required to conduct 2 years of pre-project golden eagle surveys in accordance with USFWS Eagle Conservation Plan Guidance as follows:  <ul style="list-style-type: none"> <li>Wind projects and solar projects involving a power tower</li> <li>Other activities for which the BLM, in coordination with USFWS, and CDFW as appropriate, determines take of golden eagle is reasonably foreseeable or there is a potential for take of golden eagle</li> </ul>	No	Project is not located in or near the area specified in the CMA.	No golden eagles or nests have been identified within the Project Area, therefore golden eagle take would not occur under the Project and is not being requested.	
	LUPA-BIO-IFS-29	For active nests with recreational conflicts that risk the occurrence of take, provide public notification (e.g., signs) of the sensitive area and implement seasonal closures as appropriate.	No	Project is not located in or near the area specified in the CMA.	No golden eagles or nests have been identified within the Project Area, therefore golden eagle take would not occur under the Project and is not being requested.	
	LUPA-BIO-IFS-30	For activities where ongoing take of golden eagles is anticipated, develop advanced conservation practices per USFWS Eagle Conservation Plan Guidance.	No	Land use does not occur on project site.	No golden eagles or nests have been identified within the Project Area, therefore golden eagle take would not occur under the Project and is not being requested.	
	LUPA-BIO-IFS-31	As determined necessary by BLM in coordination with USFWS, and CDFW as appropriate, for activities/projects that are likely to impact golden eagles implement site-specific golden eagle mortality monitoring in support of the pre-construction, pre-activity risk assessment surveys.	No	Land use does not occur on project site.	No golden eagles or nests have been identified within the Project Area, therefore golden eagle take would not occur under the Project and is not being requested.	
Swainson's Hawk	LUPA-BIO-IFS-32	Avoid use of rodenticides and insecticides within five miles of active Swainson's hawk nest.	No	Land use does not occur on project site.	Rodenticides or insecticides are not proposed for use under the Project.	
Desert Bighorn Sheep	LUPA-BIO-IFS-33	Access to, and use of, designated water sources for desert bighorn sheep will not be impeded by activities in designated and new utility corridors.	No	Resource not found on the project site	Desert bighorn sheep have not been identified within the Project Area or vicinity, and the Project would not restrict access to water sources.	
	LUPA-BIO-IFS-34	Transmission projects and new utility corridors will minimize effects on access to, and use of, designated water sources for desert bighorn sheep.	No	Project is not located in or near the area specified in the CMA.	The Project is not a transmission project and does not propose a new utility corridor.	
Mohave Ground Squirrel	LUPA-BIO-IFS-35	Protocol surveys (see Glossary of Terms) are required for activities in Mohave ground squirrel key population centers and linkages as indicated in Appendix D. Results of protocol surveys will be provided to BLM and CDFW to consult on, as appropriate, for third party activities.	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-36	Activities in Mohave ground squirrel key population centers, as identified in Appendix D, requiring an Environmental Impact Statement are required to assess the effect of the activity on the long term function of the affected key population center.  <ul style="list-style-type: none"> <li>Activities within a key population center, as identified in Appendix D, must be designed to avoid adversely impacting the long-term function of the affected key population center.</li> </ul>	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-37	Activities in key population centers will be sited in previously disturbed areas, areas of low habitat quality and in areas with low habitat intactness, to the maximum extent practicable (see Glossary of Terms).	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-38	Disturbance of suitable habitat from activities, requiring an EA or EIS, within the Mohave ground squirrel key population centers and linkages (as identified in Appendix D) will not occur during the typical dormant season (August 1 through February 28) unless absence is inferred and supported by protocol surveys or other available data during the previous active season.	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-39	During the typical active Mohave ground squirrel season (February 1 through August 31), conduct clearance surveys throughout the site, immediately prior to initial ground disturbance in the areas depicted in Appendix D. In the cleared areas, perform monitoring to determine if squirrels have entered cleared areas. Contain ground disturbance to within areas cleared of squirrels.  <ul style="list-style-type: none"> <li>Detected occurrences of Mohave ground squirrel will be flagged and avoided, with a minimum avoidance area of 50 feet, until the squirrels have moved out of harm's way. A designated biologist (see Glossary of Terms) may also actively move squirrels out of harm's way.</li> </ul>	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	

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Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments	
	LUPA-BIO-IFS-40	Activities sited in a Mohave ground squirrel linkage (see Appendix D) that may impact the linkage are required to analyze the potential effects on connectivity through the linkage. The activity must be designed to maintain the function of the linkage after construction/implementation and during project/activity operations. Linkage function will be assessed by considering pre- and post-activity ability of the area to support resident Mohave ground squirrels and provide for dispersal of their offspring to key population centers outside the linkage, and dispersal through the linkage between key population centers. Activities that occur in Mohave ground squirrel linkages shown in Appendix D must be configured and located in a manner that does not diminish Mohave ground squirrel populations in the linkage.	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-41	For any ground-disturbing (e.g., vegetation removal, earthwork, trenching) activities, occurrences of Mohave ground squirrel will be flagged and avoided, with a minimum avoidance area of 50 feet, until the squirrels have moved out of harm's way. A designated biologist (see Glossary of Terms) may also actively move squirrels out of harm's way.	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	
	LUPA-BIO-IFS-42	Rodenticides will not be used to manage rodents on activity within the range of the Mohave ground squirrel. Use of rodenticide inside of buildings is allowed.	No	Project not within the range or habitat of this species.	The Mohave ground squirrel does not occur within BLM El Centro Field Office-administered lands.	
Compensation	LUPA-BIO-COMP-1	Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA Decision Area will be compensated using the standard biological resources compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs LUPA-BIO-COMP-2 through -4, and previously listed CMAs. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization.  Compensation for the impacts to designated desert tortoise critical habitat will be in the same critical habitat unit as the impact (see Table 18). Compensation for impacts to desert tortoise will be in the same recovery unit as the impact.  Refer to CMA LUPA-COMP-1 and 2 for the timing requirements for initiation or completion of compensation.	No	Resource not found on the project site	Biological resources compensation would not be required under the Project.	
	LUPA-BIO-COMP-2	Birds and Bats – The compensation for the mortality impacts to bird and bat Focus and BLM Special Status Species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource, a Resource Equivalency Analysis. This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D) is used to estimate the necessary compensation fee.  Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required to offset the effects of the activity, as described above and in detail in Appendix D. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the activity. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation will be consistent with the most up to date DOI mitigation policy.	No	Resource not found on the project site	Potential for bird and bat mortality is expected to be very low. Pre-clearance surveys for migratory birds and raptors would be conducted and species-specific avoidance buffers would be implemented should activity be identified, and a 500-foot avoidance buffers around known features with evidence of bat presence would be implemented during the bat maternity season, as described in the PDFs in Appendix F. Biological resources compensation would not be required under the Project.	
	LUPA-BIO-COMP-3	Golden eagle – BLM and third-party initiated activities, will provide specific golden eagle compensation in accordance with the most up to date BLM or USFWS policies, including applicable USFWS Eagle Conservation Plan Guidance.	No	Resource not found on the project site	No golden eagles or nests have been identified within the Project Area and golden eagle compensation would not be required under the Project	
	LUPA-BIO-COMP-4	Golden eagle – Third-party applicant/activity proponents are required to contribute to a DRECP-wide golden eagle monitoring program, if the activity/project(s) has been determined, through the environmental analysis, to likely impact golden eagles.	No	Resource not found on the project site	No golden eagles or nests have been identified within the Project Area and golden eagle compensation would not be required under the Project	
Air Resources	LUPA-AIR-1	All activities must meet the following requirements: <ul style="list-style-type: none"> <li>• Applicable National Ambient Air Quality Standards (Section 109)</li> <li>• State Implementation Plans (Section 110)</li> <li>• Control of Pollution from Federal Facilities (Section 118) including non-point source</li> <li>• Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.)</li> <li>• Conformity Analyses and Determinations (Section 176(c))</li> <li>• Apply best management practices on a case by case basis</li> <li>• Applicable local Air Quality Management Jurisdictions (e.g., 403 SCAQMD)</li> </ul>	Yes		The Project would comply with applicable State of California and Imperial County Air District rules for fugitive dust emissions and greenhouse gas emissions and significance thresholds would not be exceeded. No further mitigation would be necessary; this CMA would not be required for implementation in addition to the PDFs already proposed within Appendix F.	
	LUPA-AIR-2	Because project authorizations are a federal undertaking, air quality standards for fugitive dust may not exceed local standards and requirements.	Yes		The Project would comply with applicable State of California and Imperial County Air District rules for fugitive dust emissions and greenhouse gas emissions and significance thresholds would not be exceeded. No further mitigation would be necessary; this CMA would not be required for implementation in addition to the PDFs already proposed within Appendix F.	
	LUPA-AIR-3	Where impacts to air quality may be significant under NEPA, requiring analysis through an Environmental Impact Statement, require documentation for activities to include a detailed discussion and analysis of Ambient Air Quality conditions (baseline or existing), National Ambient Air Quality Standards, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed project (including cumulative and indirect impacts and greenhouse gas emissions). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities, and proposed mitigation measures to minimize net PM <sub>10</sub> and PM <sub>2.5</sub> emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. A Construction Emissions Mitigation Plan will be developed.	No	Land use does not occur on project site.	Impacts to air quality would be negligible, per the analysis within Chapter 3 of the EA.	
	LUPA-AIR-4	Because fugitive dust is the number one source of PM <sub>10</sub> and PM <sub>2.5</sub> emissions in the Mojave and Sonoran Deserts, fugitive dust impacts to air quality must be analyzed for all activities/projects requiring an Environmental Impact Statement and Environmental Assessment.  <ul style="list-style-type: none"> <li>• The NEPA air quality analysis may include modelling of the sources of PM<sub>10</sub> and PM<sub>2.5</sub> that occur prior to construction and/or ground disturbance from the activity/project, and show the timing, duration and transport of emissions off site. When utilized, the modeling will also identify how the generation and movement of PM<sub>10</sub> and PM<sub>2.5</sub> will change during and after construction and/or ground disturbance of the activity/project under all activity/project specific NEPA alternatives. The BLM air resource specialist and Authorizing Officer will determine if modelling is required as part of the NEPA analysis based on estimated types and amounts of emissions.</li> </ul>	Yes		The Project would comply with applicable State of California and Imperial County Air District rules for fugitive dust emissions and greenhouse gas emissions. An air emissions inventory was analyzed in Chapter 3 of the EA and because significance thresholds would not be exceeded and the Project would comply with the aforementioned rules, air quality modeling is not determined necessary. No further mitigation would be necessary; this CMA would not be required for implementation in addition to the PDFs already proposed within Appendix F.	

LUPA Wide					
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
	LUPA-AIR-5	<p>A fugitive Dust Control Plan will be developed for all projects where the NEPA analysis shows an impact on air quality from fugitive dust.</p> <p><b>II.4.2.1.3 Comprehensive Trails and Travel Management</b>  <b>Components of a Designated Travel Network</b>            In 2006, the BLM issued Instruction Memorandum No. 2006-173, which established policy for the use of terms and definitions associated with the management of transportation-related linear features. It also set a data standard and a method for storing electronic transportation asset data. According to the memorandum, all transportation assets are defined as follows:</p> <ul style="list-style-type: none"> <li>• Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use. These may include ROW roads granted by the BLM to other entities.</li> <li>• Primitive Road: A linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards.</li> <li>• Trail: A linear route managed for human-powered, stock, or OHV forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.</li> </ul> <p>Designated Roads, Primitive Roads, and Trails are categorized as follows:</p> <ul style="list-style-type: none"> <li>• Tier 1: Roads and Primitive Roads with high values for commercial, recreational, casual uses, and/or to provide access to other recreation activities.</li> <li>• Tier 2: Roads and Primitive Roads with high values for recreation and other motorized access (i.e., important through routes).</li> <li>• Tier 3: Primitive Roads and Trails with high value for motorized and non-motorized recreational pursuits (i.e., spur routes).</li> </ul> <p><b>Off Highway Vehicle Management</b>            OHVs are synonymous with off-road vehicles. As defined in 43 CFR 8340.0-5 (a): Off-road vehicle means any motorized/battery-powered vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain.</p> <p>In accordance with 43 CFR 8342.1, the BLM's regulations for OHV management, "the authorized officer shall designate all public lands as open, limited, or closed to [OHVs]." As such, all public lands within the Planning Area have been designated in one of three OHV designation categories, as follows:</p> <ul style="list-style-type: none"> <li>• Open Area Designations are used for intensive OHV or other transportation use areas where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.</li> <li>• Limited Area Designations are used where travel must be restricted to meet specific resource/resource use objectives. For areas classified as limited, the BLM must consider a range of possibilities, including travel that will be limited to the following:               <ul style="list-style-type: none"> <li>○ Types or modes of travel, such as foot, equestrian, bicycle, and motorized</li> <li>○ Existing roads and trails</li> <li>○ Time or season of use; limited to certain types of vehicles (OHVs, motorcycles, all-terrain vehicles, high clearance, etc.); limited to licensed or permitted vehicles or use</li> <li>○ BLM administrative use only</li> <li>○ Other types of limitations</li> </ul> </li> <li>• Closed Area Designations prohibit vehicular travel, both motorized and mechanized, transportation cross-country and on routes, except for where valid rights continue to allow access, such as within a designated Wilderness Area. Areas are designated closed if closure to all vehicular use is necessary to protect resources, promote visitor safety, or reduce use conflicts.</li> </ul> <p><b>Back Country Byways Program</b>            The BLM developed the Back Country Byway Program to complement the National Scenic Byway Program established by the U.S. Secretary of Transportation. Back County Byways highlight the spectacular nature of the western landscapes. These routes vary from narrow graded roads that are passable only during a few months of the year to two-lane paved highways with year-round access.</p> <p>BLM will comply with the policy and guidelines of the BLM Back Country Byway Program and intent to showcase routes with high scenic and outstanding natural, cultural, historic or other values consistent with the designation. Where appropriate and feasible, BLM will highlight the spectacular nature of the western landscapes through education and interpretation along linear travel routes which provide recreational driving opportunities that allow for the experiences of solitude and isolation by:</p> <ul style="list-style-type: none"> <li>• Maintaining or improving access to BLM recreational destinations and activities</li> <li>• Helping meet the increasing demand for pleasure driving in back country environments.</li> <li>• Facilitating effective partnerships at the local, state, and national levels</li> <li>• Contributing to local and regional economies through increased tourism</li> <li>• Increasing public awareness of the availability of outstanding recreation attractions on public lands</li> <li>• Enhancing the visitors' recreation experience and communicate the multiple-use management message through an effective wayside interpretive program</li> <li>• Increasing the visibility of BLM as a major supplier of outdoor recreation opportunities</li> <li>• Managing the increased use created through the program to minimize impacts to the environment</li> <li>• Contributing to the National Scenic Byways Program in a way that is uniquely suited to national public lands managed by BLM</li> </ul> <p>Back country byways are designated by the type of road and the vehicle needed to safely travel the byway. Some back country byways vary from a single track bike trail to a low speed paved road that traverses back country areas. Segments of Back Country Byways are subdivided into four types based on the characteristic of the road.</p> <p>Due to their remoteness, byway travelers should always inquire locally as to byway access and road conditions.</p> <ul style="list-style-type: none"> <li>• Type I – Roads are paved or have an all-weather surface and have grades that are negotiable by 2-wheel drive vehicles and passenger cars. Most of these roads are narrow, slow speed, secondary routes though public lands.</li> <li>• Type II – Roads that require high-clearance type vehicles such as trucks or 4-wheel drive vehicles. These roads are usually not paved, but may have some type of surfacing. Grades, curves, and road surface are such that they can be negotiated with a 2-wheel drive high clearance vehicle without undue difficulty.</li> </ul>	No		The Project would have a negligible impact on air quality from fugitive dust as analyzed in Chapter 3 of the EA. The Project would comply with applicable State of California and Imperial County Air District rules for fugitive dust emissions.

LUPA Wide						
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments	
		<ul style="list-style-type: none"> <li>• Type III – Roads require 4-wheel drive vehicles or other specialized vehicles such as dirt bikes, all-terrain vehicles (ATVs), etc. These roads are usually not surfaced, but are managed to provide for safety and resource protection needs. These roads can often have steep grades, uneven tread surfaces, and other characteristics that will require specialized vehicles to negotiate usually at slow speeds.</li> <li>• Type IV – Trails are managed specifically to accommodate dirt bike, mountain bike, snowmobile or all-terrain vehicle use. Most of these routes are single track trails.</li> </ul>				
LUPA-Wide Conservation and Management Actions for Comprehensive Trails and Travel Management	LUPA-CTTM-1	Maintain and manage adequate Road, Primitive Road, and Trail Access to and within SRMAs, ERMAs, OHV Open Areas, and Level 1, 2, and 3 Recreation Facilities.	Yes	Project is not located in or near the area specified in the CMA.	The Project is not located within an SRMA, ERMA, Level 1-3 Recreation Facilities. Open OHV roads occurs within the Project Area and the Project would restrict public access on some existing access roads and the temporary access roads that would be constructed for drill site access. Access road restrictions would be temporary. PDFs and additional mitigation measures for access restriction safety and restriction notifications to the public who may recreate within the area are included in Appendix F. No further mitigation would be required.	
	LUPA-CTTM-2	Avoid activities that would have a significant adverse impact on use and enjoyment within 0.5 mile from centerline of tier 2 Roads/Primitive Roads, and 300 feet from centerline of tier 3 primitive roads/trails. If avoidance of Tier 2 and 3 roads, primitive roads and trails is not practicable, relocate access to the same or higher standard and maintain the setting characteristics and access to recreation activities, facilities, and destinations.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within the distances specified from Tier 2 and 3 roads and trails.	
	LUPA-CTTM-3	Manage other significant linear features such as Mojave Road, Bradshaw Trail, or other recognized linear features to protect their important recreation activities, experiences and benefits. Prohibit activities that have a significant adverse impact on use and enjoyment within 0.5 mile (from centerline) of such linear features.	No	Project is not located in or near the area specified in the CMA.	The significant linear features specified do not occur within the Project Area or vicinity.	
	LUPA-CTTM-4	If residual impacts to Tier 1 and Tier 2 roads/primitive roads, Back Country Byways, or significant linear features occur from adjacent DFAs or other activities, commensurate compensation in the form of enhanced recreation operations, access, recreation facilities or opportunities will be required.	No	Project is not located in or near the area specified in the CMA.	Residual impacts to the resources specified would not occur under the Project as such resources/areas are not present.	
	LUPA-CTTM-5	Manage OHV use per the appropriate Transportation and Travel Management Plan/RMP and/or the SRMA Objectives as outlined in Appendix C as Open, Limited or Closed.	No	Land use does not occur on project site.	No OHV use is proposed under the Project.	
	LUPA-CTTM-6	Manage Back Country Byways as a component of BLM Recreation and Travel and Transportation Management program.	No	Project is not located in or near the area specified in the CMA.	There are no Back Country Byways present within the Project Area.	
	LUPA-CTTM-7	Manage Recreation Facilities consistent with the objectives for the recreation management areas and facilities (see also Section II.4.2.1.10).	Yes		The Tumco Historic Townsite is present within and adjacent to the Project Area. This CMA would be required for Project implementation as determined appropriate by the BLM to be consistent with recreation management objectives.	
Cultural Resources and Tribal Interests	LUPA-CUL-1	Continue working with the California Office of Historic Preservation (OHP) to develop and implement a program for record keeping and tracking agency actions that meets the needs of BLM and OHP organizations pursuant to existing State and National agreements and regulation (BLM State Protocol Agreement; BLM National Programmatic Agreement).	No		This is a BLM action, not relevant to a proposed project.	
	LUPA-CUL-2	Using relevant archaeological and environmental data, identify priority geographic areas for new field inventory, based upon a probability for unrecorded significant resources and other considerations.	No		This is a BLM action, not relevant to a proposed project.	
	LUPA-CUL-3	Identify places of traditional cultural and religious importance to federally recognized Tribes and maintain access to these locations for traditional use.	No		This is a BLM action, not relevant to a proposed project.	
	LUPA-CUL-4	Design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Tribes.	Yes		A BLM-approved Cultural Resources Inventory Report has been completed. The Project would be in compliance with Section 106 of the NHPA and other applicable requirements; Native American Tribal government-to-government consultation is ongoing and would occur throughout the life of the Project. All documented cultural resource sites would be avoided throughout the life of the Project, including reclamation. Additional mitigation measures for cultural resources have been identified as included in Appendix F. This CMA would not be required to be implemented separately in addition to the PDFs and mitigation measures in Appendix F.	
	LUPA-CUL-5	Develop interpretive material to correspond with recreational uses to educate the public about protecting cultural resources and avoiding disturbance of archaeological sites.	No	Land use does not occur on project site.	This is a BLM action, not relevant to a proposed project.	
	LUPA-CUL-6	Develop partnerships to assist in the training of groups and individuals to participate in site stewardship programs.	No	Land use does not occur on project site.	This is a BLM action, not relevant to a proposed project.	
	LUPA-CUL-7	Coordinate with visual resources staff to ensure VRM Classes consider cultural resources and tribal consultation to include landmarks of cultural significance to Native Americans (TCPs, trails, etc.).	No		This is a BLM action, not relevant to a proposed project.	
	LUPA-CUL-8	Conduct regular contact and consultation with federally recognized Tribes and individuals, consistent with statute, regulation and policy.	Yes		Section 106 of the NHPA consultation will be ongoing throughout the life of the Project and additional mitigation measures required by the BLM have been included in Appendix F. Impacts to cultural resources would be negligible. No further mitigation measures in addition to the PDFs and mitigation in Appendix F would be required; therefore, this CMA would not need to be implemented separately.	

LUPA Wide					
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
	LUPA-CUL-9	Promote DRECP desert vegetation types/communities by avoiding them where possible, then use required compensatory mitigation, off-site mitigation, and other means to ensure Native American vegetation collection areas and practices are maintained.	Yes		Impacts to DRECP desert vegetation types/communities important to Native American vegetation collection and practices are not anticipated; however, if presence of such communities are identified upon surface occupancy of the Project and throughout Section 106 of the NHPA consultation over the life of the Project, this CMA would be required for implementation in addition to the PDFs and mitigation measures for cultural resources identified in Appendix F.
	LUPA-CUL-10	Promote and protect desert fan palm oasis vegetation type/communities by avoiding where possible, then use required compensatory mitigation, off-site mitigation, and other means to ensure Native American cultural values are maintained.	No	Project not within the range or habitat of this species.	Desert fan palm oasis vegetation type and/or communities are not present within the Project Area or vicinity.
	LUPA-CUL-11	Promote and protect desert microphyll woodland vegetation type/communities to ensure Native American cultural values are maintained.	Yes		Occurrence is very limited within the Project Area and impacts are not anticipated; however, if presence is identified upon surface occupancy of the Project, this CMA would be required for implementation in addition to the PDFs and mitigation measures for cultural resources identified in Appendix F.
Lands and Realty	LUPA-LANDS-1	Identify acquired lands as right-of-way exclusion areas when development is incompatible with the purpose of the acquisition.	No	Project is not located in or near the area specified in the CMA.	The Project would not require land acquisition or Right-of-Way exclusions.
	LUPA-LANDS-2	Prioritize acquisition of land within and adjacent to conservation designation allocations. Acquired land in any land use allocation in this Plan will be managed according to the applicable allocation requirements and/or for the purposes of the acquisition. Management boundaries for the allocation may be adjusted to include the acquired land if the acquisition lies outside the allocation area through a future land use plan amendment process.	No	Project is not located in or near the area specified in the CMA.	The Project would not require land acquisition.
	LUPA-LANDS-3	Within land use allocations where renewable energy and ancillary facilities are not allowed, an exception exists for geothermal development. Geothermal development will be an allowable use if a geothermal-only DFA overlays the allocation and the lease includes a no surface occupancy stipulation with exception of three specific parcels in the Ocotillo Wells SRMA (refer to the Ocotillo Wells SRMA Special Unit Management Plan in Appendix C).	No	Land use does not occur on project site.	The Project does not involve geothermal development.
	LUPA-LANDS-4	Nonfederal lands within the boundaries of BLM LUPA land use allocations are not affected by the LUPA.	No	Project is not located in or near the area specified in the CMA.	The Project is located entirely on lands managed by the BLM.
	LUPA-LANDS-5	The MUCs used to determine land tenure in the CDCA Plan will be replaced by areas listed in the CMAs below.	No	Project is not located in or near the area specified in the CMA.	The land tenure would not be replaced by the below areas under the Project.
	LUPA-LANDS-6	Any activities on Catellus Agreement lands will be consistent with deed restrictions	No	Project is not located in or near the area specified in the CMA.	The Project does not occur on Catellus Agreement lands.
	LUPA-LANDS-7	Any activities on Catellus Agreement lands will be subject to the approval of the California State Director.	No	Project is not located in or near the area specified in the CMA.	The Project does not occur on Catellus Agreement lands.
	LUPA-LANDS-8	The CDCA Plan requirement that new transmission lines of 161kV or above, pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for interbasin transfers of water will be located in designated utility corridors, or considered through the plan amendment process outside of designated utility corridors, remains unchanged. The only exception is that transmission facilities may be located outside of designated corridors within DFAs without a plan amendment. This CMA does not apply the Bishop and Bakersfield RMPs.	No	Project is not located in or near the area specified in the CMA.	The Project does not propose transmission lines or pipelines, or major aqueducts and/or canals, or transmission facilities.
Exchanges with the State of California	LUPA-LANDS-8	Continue land exchanges with the State of California, as per the LUPA goals and objectives in Section II.4.1.4. Refer to Appendix F.	No	Project is not located in or near the area specified in the CMA.	No land exchanges would occur under the Project.
	LUPA-LANDS-9	Enter into land exchanges with the California State Lands Commission (CSLC) which convey BLM lands suitable for, or developed as, large-scale renewable energy related projects in exchange for CSLC school lands located in and adjacent to designated conservation areas. These exchanges will follow the procedures outlined in Memorandum of Agreement Relating to Land Exchanges to Consolidate Land Parcels signed by the BLM and CSLC on May 21, 2012.	No	Project is not located in or near the area specified in the CMA.	No land exchanges would occur under the Project.
	LUPA-LANDS-10	Prioritize land exchange proposals from the CSLC on available lands if there are competing land tenure proposals (e.g., land sale or exchange), CSLC proposals that enhance revenues for schools will generally be given priority.	No	Project is not located in or near the area specified in the CMA.	No land exchanges would occur under the Project.
Livestock Grazing	LUPA-LIVE-1	Adopt the Standards of Rangeland Health and Guidelines for Grazing Management, as detailed below, for the CDCA. This CMA does not apply in the Bishop and Bakersfield RMPs. <b>Standards of Rangeland Health and Guidelines for Grazing Management</b> Regional Public Land Health Standards and Guidelines are required for all BLM administered lands in accordance with Part 43 of the CFR subsection 4180. These regulations require that State Directors, in consultation with Resource Advisory Councils, develop Standards for Rangeland Health and Guidelines for grazing management. The BLM in coordination and consultation with the California Desert District Advisory Committee (see Section 601 of the FLPMA as amended) developed standards and guidelines for the CDCA and used the following land use plan amendments to analyze the specific standard and guideline and to provide the public and opportunity to comment. • Northern and Eastern Colorado Desert Management Plan—NECO—ROD signed Dec. 2002 (BLM 2002a) • Northern and Eastern Mojave Desert Management Plan—NEMO—ROD signed Dec. 2002 (BLM 2002b) • West Mojave Plan—WEMO—ROD signed March 2006 (BLM 2006) The regulations require approval by the Secretary of the Interior prior to full implementation of standards and guidelines. Until approval is received, the fallback standards and guidelines will be used. The regulations require approval by the Secretary of the Interior prior to full implementation of the California Desert District standards and guidelines. Until approval is received, the fallback standards and guidelines will be used in the 5 Desert District Offices.  Bakersfield and Bishop Field Offices are covered under the Central California Standards and Guidelines and require no additional approval to continue to use that document. <b>Standards and Guidelines for the CDCA</b> <b>Standards</b> of land health are expressions of levels of physical and biological condition or degree of function required for healthy lands and sustainable uses, and define minimum resource conditions that must be achieved and sustained (BLM 2001).  <b>Guideline.</b> A practice, method or technique determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees achieve standards. Guidelines may be adapted or modified when monitoring or other information indicates the guideline is not effective, or a better means of achieving the applicable standard becomes appropriate (H-4180-1 Rangeland Health Standards).  The following <b>Standards</b> for the CDCA are from the NECO, NEMO, WEMO, and Palm Springs South Coast Resource Management Plan (PSSCRMP) land use plan amendments. <b>Soils</b>	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.

LUPA Wide					
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		<p>Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, land form, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed, as indicated by:</p> <ul style="list-style-type: none"> <li>• Canopy and ground cover are appropriate for the site.</li> <li>• There is a diversity of plant species with a variety of root depths.</li> <li>• Litter and soil organic matter are present at suitable sites.</li> <li>• Microbiotic soil crusts are maintained and in place at appropriate locations.</li> <li>• Evidence of wind or water erosion does not exceed natural rates for the site.</li> <li>• Soil permeability, nutrient cycling, and water infiltration are appropriate for the soil type.</li> </ul> <p><b>Native Species</b></p> <p>Healthy, productive, and diverse habitats for native species, including Special Status Species (federal threatened and endangered, federally proposed, federal candidates, BLM sensitive, or California State threatened and endangered, and Unique Plant Assemblages), are maintained in places of natural occurrence, as indicated by:</p> <ul style="list-style-type: none"> <li>• Photosynthetic and ecological processes are continuing at levels suitable for the site, season, and precipitation regimes.</li> <li>• Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment.</li> <li>• Plant communities are producing litter within acceptable limits.</li> <li>• Age class distribution of plants and animals are sufficient to overcome mortality fluctuations.</li> <li>• Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.</li> </ul> <ul style="list-style-type: none"> <li>• Alien and noxious plants and wildlife do not dominate a site or do not require action to prevent the spread and introduction of noxious/invasive weeds.</li> <li>• Appropriate natural disturbances are evident.</li> <li>• Populations and their habitats are sufficiently distributed and healthy to prevent the need for new listing as Special Status Species.</li> </ul> <p><b>Riparian/Wetland and Stream Function</b></p> <p>Wetland systems associated with subsurface, running, and standing water function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained, as indicated by:</p> <ul style="list-style-type: none"> <li>• Vegetative cover adequately protects banks and dissipates energy during peak water flows.</li> <li>• Dominant vegetation is an appropriate mixture of vigorous riparian species.</li> <li>• Recruitment of preferred species is adequate to sustain the plant community.</li> <li>• Stable soils store and release water slowly.</li> <li>• Plant species present indicate soil moisture characteristics are being maintained.</li> <li>• There is minimal cover of shallow-rooted invader species, and they are not displacing deep-rooted native species.</li> <li>• Shading of stream courses and water courses is sufficient to support riparian vertebrates and invertebrates.</li> <li>• Stream is in balance with water and sediment being supplied by the watershed.</li> <li>• Stream channel size (depth and width) and meander is appropriate for soils, geology, and landscape.</li> <li>• Adequate organic matter (litter and standing dead plant material) is present to protect the site from excessive erosion and to replenish soil nutrients through decomposition.</li> </ul> <p><b>Water Quality</b></p> <p>Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State standards, as indicated by:</p> <ul style="list-style-type: none"> <li>• The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.</li> <li>• Standards are achieved for riparian, wetlands, and water bodies.</li> <li>• Aquatic organisms and plants (e.g., macro-invertebrates, fish, algae, and plants) indicate support for beneficial uses.</li> <li>• Monitoring results or other data show water quality is meeting the Standard.</li> </ul> <p>The following <b>Guidelines</b> for grazing in the CDCA are from the NECO, NEMO, WEMO, and PSSCRMP land use plan amendments.</p> <ul style="list-style-type: none"> <li>• Facilities will be located away from riparian-wetland areas whenever they conflict with achieving or maintaining riparian-wetland functions.</li> <li>• The development of springs and seeps or other projects affecting water and associated resources will be designed to protect the ecological functions and processes of those sites.</li> <li>• Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, adits, and seeps) would be modified so PFC and resource objectives can be met, and incompatible projects would be modified to bring them into compliance. The BLM would consult, cooperate, and coordinate with affected interests and livestock producers prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities would be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.</li> <li>• Supplements (e.g., salt licks) will be located one-quarter mile or more away from wetland systems so they do not conflict with maintaining riparian-wetland functions.</li> <li>• Management practices will maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and landform.</li> <li>• Grazing management practices will meet state and federal water quality Standards. Impoundments (stock ponds) having a sustained discharge yield of less than 200 gallons per day to surface or groundwater, are excepted from meeting state drinking water standards per California State Water Resources Control Board Resolution Number 88-63.</li> <li>• Refer to the most-up-to-date BLM Fire Policy for information related to suppression and use of wildland fire within the planning area.</li> <li>• In years when weather results in extraordinary conditions, seed germination, seedling establishment, and native plant species growth should be allowed by modifying grazing use.</li> <li>• Grazing on designated ephemeral rangeland could be allowed only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.</li> </ul>			

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		<ul style="list-style-type: none"> <li>During prolonged drought, range stocking will be reduced to achieve resource objectives and/or prescribed perennial forage utilization. Livestock utilization of key perennial species on year-long allotments should be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.</li> <li>Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals should be recorded and evaluated for future control measures. Methods and prescriptions should be implemented, and an evaluation would be completed to ascertain future control measures for undesirable species.</li> <li>Restore, maintain or enhance habitats to assist in the recovery of federally listed threatened and endangered species. Restore, maintain or enhance habitats of Special Status Species including federally proposed, federal candidates, BLM sensitive, or California State threatened and endangered to promote their conservation.</li> <li>Grazing activities should support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.</li> </ul> <ul style="list-style-type: none"> <li>Experimental research efforts should be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.</li> <li>Livestock utilization limits of key perennial species will be as shown in (see <b>Table 19</b>) for the various range types.</li> </ul> <p><b>Monitoring</b> Monitoring of grazing allotment resource conditions would be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting one or more Standards, monitoring processes would be established where none exist to monitor indicators of health until the Standard or resource objective has been attained. Livestock trail networks, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and these ongoing impacts would be considered during analysis of the assessment and monitoring process. Activity plans for other uses or resources that overlap an allotment could have prescribed resource objectives that may further constrain grazing activities (e.g., ACEC). In an area where a Standard has not been met, the results from monitoring changes to grazing management required to meet Standards would be reviewed annually. During the final phase of the assessment process, the Range Determination includes the schedule for the next assessment of resource conditions. To attain Standards and resource objectives, the best science would be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups would be sought to collect prescribed monitoring data for indicators of each Standard.</p>			
LUPA Wide Conservation and Management Actions for Livestock Grazing	LUPA-LIVE-2	In the CDCA only, accept grazing permit/lease donations in accordance with legislation in the Fiscal Year 2012 Appropriations Act (Public Law 112-74).	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
	LUPA-LIVE-3	In the Bishop and Bakersfield RMPs, determine whether continued livestock grazing would be compatible with achieving land use plan management goals and objectives in the event that the permit/lease is relinquished.	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
	LUPA-LIVE-4	If the BLM determines that the grazing allotment is to be put to a different public purpose than grazing, follow the notification requirements outline in the Grazing Regulations at 43 CFR 4110.4-2(b) and BLM Instruction Memorandum (IM) 2011-181 (BLM 2011), or future policy replacing IM 2011-181.	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
	LUPA-LIVE-5	For grazing allotments within the CDCA that BLM has received a voluntary request for relinquishment prior to fiscal year 2012, continue the planning process for making these allotments unavailable for grazing.	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
	LUPA-LIVE-6	Complete the process for approving rangeland health standards and guidelines for the CDCA Plan (NEMO, WEMO, NECO and PSSCRMP).	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
	LUPA-LIVE-7	Make Pilot Knob, Valley View, Cady Mountain, Cronese Lake, and Harper Lake allotments, allocations unavailable for livestock grazing and change to management for wildlife conservation and ecosystem function. Reallocate the forage previously allocated to grazing use in these allotments to wildlife and ecosystem functions. Pilot Knob was closed in the WEMO plan amendment. The Cronese Lake, Harper Lake, and Cady Mountain allotments were closed as mitigation for the impacts to the Agassiz's desert tortoise resulting from the Fort Irwin expansion. All forage allocated to livestock grazing in these allotments will be reallocated to wildlife use and ecosystem function.	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
	LUPA-LIVE-8	The following vacant grazing allotments within the CDCA will have all vegetation previously allocated to grazing use reallocated to wildlife use and ecosystem functions and will be closed and unavailable to future livestock grazing: Buckhorn Canyon, Crescent Peak, Double Mountain, Jean Lake, Johnson Valley, Kessler Springs, Oak Creek, Chemehuevi Valley, and Piute Valley.	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
	LUPA-LIVE-9	Allocate the forage that was allocated to livestock use in the Lava Mountain and Walker Pass Desert allotments (which have already been relinquished under the 2012 Appropriations Act) to wildlife use and ecosystem function and permanently eliminate livestock grazing on the allotments.	No	Land use does not occur on project site.	The El Centro Field Office does not have any active livestock grazing leases.
Minerals	LUPA-MIN-1	High Potential Mineral Areas (identified in CA GEM data) <ul style="list-style-type: none"> <li>These areas have been identified as mineral lands having existing and/or historic mining activity and a reasonable probability of future mineral resource development. These identified areas will be designated as mineral land polygons on DRECP maps, recognized as probable future development areas for planning purposes and allowable use areas.</li> <li>If an activity is proposed in a High Potential Mineral Area, analyze and consider the mineral resource value in the NEPA analysis.</li> </ul>	No	Project not located on federal lands with this designation.	The Project is not located within a High Potential Mineral Area.
	LUPA-MIN-2	Existing Mineral/Energy Operations <p>Existing authorized mineral/energy operations, including existing authorizations, modifications, extensions and amendments and their required terms and conditions, are designated as an allowable use within all BLM lands in the LUPA Decision Area, and unpatented mining claims subject to valid existing rights. Amendments and expansions authorized after the signing of the DRECP LUPA ROD are subject to applicable CMAs, including ground disturbance caps within Ecological and Cultural Conservation Areas, subject to valid existing rights, subject to governing laws and regulations.</p>	Yes		This CMA would be required for implementation.
	LUPA-MIN-3	Existing High Priority Mineral/Energy Operations Exclusion Areas <ul style="list-style-type: none"> <li>Existing high-priority operation footprints and their identified expansion areas are excluded from DFA and conservation CMAs, but must comply with LUPA-wide CMAs subject to the governing laws and regulations.</li> <li>High priority operation exclusions are referenced by name with their respective footprint (acreage) below. <ul style="list-style-type: none"> <li>MolyCorp REE (General Legal Description: 35° 26'N; 115° 29'W)—10,490.9 surface acres</li> <li>Briggs Au, Etna (General Legal Description: 35° 56'N; 117° 11'W)—3,216.9 surface acres</li> </ul> </li> </ul>	No	Project is not located in or near the area specified in the CMA.	The Project is not located within existing High Priority Mineral/Energy Operations Exclusion Areas and therefore would not impact such areas.



LUPA Wide						
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		<ul style="list-style-type: none"> <li>o Cadiz Evaporites (General Legal Description: 34° 17'N; 115° 23'W)—2,591.5 surface acres</li> <li>o Searles Dry Lake (Evaporate) Operation (General Legal Description: 35° 43'N; 117° 19'W)—72,000 surface acres</li> <li>o Bristol Dry Lake (Evaporate) Operation (General Legal Description: 34° 29'N; 115° 43'W)—3,500 surface acres</li> <li>o Mesquite Gold Mine (General Legal Description: 33° 04'N; 114° 59'W)—4,500 surface acres</li> <li>o Hector Mine (Hectorite Clay) (General Legal Description: 34° 45'N; 116° 25'W)—1,500 surface acres</li> <li>o Castle Mountain/Viceroy Mine (Gold) (General Legal Description: 35° 17'N; 115° 3'W)—5,000 surface acres</li> </ul>				
	LUPA-MIN-4	<p>Access to Existing Operations</p> <ul style="list-style-type: none"> <li>• Established designated, approved, or authorized access routes to the aforementioned existing authorized operations and areas will be designated as allowable uses.</li> <li>• Access routes to Plans of Operations and Notices approved under 43 CFR 3809 will be granted subject to valid existing rights listed in 43 CFR 3809.100.</li> </ul>	No	Project is not located in or near the area specified in the CMA.	The Project is not located within existing High Priority Mineral/Energy Operations Exclusion Areas and therefore would not impact access to such areas.	
	LUPA-MIN-5	<p>Areas Located Outside Identified Mineral Areas</p> <ul style="list-style-type: none"> <li>• Areas which could not be characterized due to insufficient data and mineral potential may fluctuate dependent on market economy, extraction technology, and other geologic information- requiring periodic updating. Authorizations are subject to the governing laws and regulations and LUPA requirements.</li> </ul>	No	Project not located on federal lands with this designation.	The Project is located within a historic mining district and a previously disturbed area from past-mining.	
	LUPA-MIN-6	New or expanded mineral operations will be evaluated on a case-by-case basis, and authorizations are subject to LUPA requirements, and the governing laws and regulations.	Yes		All applicable CMAs will be implemented under the Project that are not duplications of the already developed PDFs and the BLM-required additional mitigation measures within Appendix F.	
National Recreation Trails	LUPA-NRT-1	The Nadeau Road NRT was designated by the Secretary of the Interior in June 2013. The California Desert District nominates the Sperry Wash Road, El Mirage Interpretive Trail East, and El Mirage Interpretive Trail West for NRT designation.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within the vicinity of the nominated trails.	
	LUPA-NRT-2	The Nadeau NRT Management Corridor will be protected and activities impacting use and enjoyment of the trail will be avoided within 0.5 mile from centerline of the route.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within the Nadeau National Recreation Trail Corridor.	
Paleontology	LUPA-PALEO-1	If not previously available, prepare paleontological sensitivity maps consistent with the Potential Fossil Yield Classification for activities prior to NEPA analysis.	Yes		The Project Area has very low potential for preservation of significant fossils (i.e., paleontological resources) in the metamorphic Tumco Formation and in the igneous rocks, and low potential for preservation in the young colluvial and alluvial sediments deposited from high energy events. The project is unlikely to negatively impact fossil resources per Stantec 2022c referenced in the EA. This CMA would not be required for implementation as paleontological resources were determined present not affected.	
	LUPA-PALEO-2	Incorporate all guidance provided by the Paleontological Resources Protection Act.				
	LUPA-PALEO-3	Ensure proper data recovery of significant paleontological resources where adverse impacts cannot be avoided or otherwise mitigated.				
	LUPA-PALEO-4	Paleontological surveys and construction monitors are required for ground disturbing activities that require an EIS.	No	Project is not located in or near the area specified in the CMA.	The BLM has determined that the level of NEPA analysis required for the Project as proposed in the Plan of Operations is an EA; therefore, EIS-level analysis associated with this CMA is not relevant.	
Recreation and Visitor Services	LUPA-REC-1	Maintain, and where possible enhance, the recreation setting characteristics – physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls.	Yes		The physical landscape would be reclaimed to near pre-disturbance conditions which would maintain a similar recreational setting within the Project Area as currently existing, per the Reclamation Plan included as Appendix E. No further mitigation would be required in addition to the reclamation measures proposed and the PDFs and mitigation measures included in Appendix F; therefore, this CMA would not be required for implementation.	
	LUPA-REC-2	Cooperate with the network of communities and recreation service providers active within the planning area to protect the principal recreation activities and opportunities, and the associated conditions for quality recreation, by enhancing appropriate visitor services, and by identifying and mitigating impacts from development, inconsistent land uses and unsustainable recreation practices such as minimizing impacts to known rockhounding gathering areas.	Yes	Land use does not occur on project site.	The BLM would require the Project to post signage in designated recreational areas known within the vicinity of the Project Area to notify the public of dates and times that drilling would occur, per the mitigation measures identified in Appendix F. No further mitigation would be required.	
	LUPA-REC-3	Manage lands not designated as SRMAs or ERMAs to meet recreation and visitor services and resource stewardship needs as described in Resource Management Plans (RMPs).				
	LUPA-REC-4	Prohibit activities that have a significant adverse impact and that do not enhance conservation or recreation values within one mile of Level 1 and Level 2 Recreation facility footprint.				
	LUPA-REC-5	Avoid activities that have a significant adverse impact and that do not enhance conservation or recreation values within one-half mile of Level 3 Recreation facility footprint including route access and staging areas. If avoidance is not practicable, the facility must be relocated to the same or higher recreation standard and maintain recreation objectives and setting characteristics.				
	LUPA-REC-6	Limit signage to that necessary for recreation facility/area identification, interpretation, education and safety/regulatory enforcement.				
	LUPA-REC-7	Refer to local RMPs, RMP amendments, and activity level planning for specially designated areas for Vehicular Stopping, Parking, and Camping limitations.				
	LUPA-REC-8	Provide on-going maintenance of recreation and conservation facilities, interpretive and regulatory signs, roads, and trails.				
Soil and Water General	LUPA-SW-1	Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity-specific NEPA analysis.	Yes		The Project would be required to obtain a California General Permit for protection of stormwater runoff within natural ephemeral drainages and impacts from construction activities. A Stormwater Pollution Prevention Plan would be developed and implemented to control sedimentation. No further mitigation would be required in addition to the PDFs included in Appendix F; therefore, this CMA would not be required for implementation.	
	LUPA-SW-2	Buffer zones, setbacks, and activity limitations specifically for soil and water (ground and surface) resources will be determined on an activity/site-specific basis through the environmental review process, and will be consistent with the soil and water resource goals and objectives to protect these resources. Specific requirements, such as buffer zones and setbacks, may be based, in part, on the results of the Water Supply Assessment defined below. In general, placement of long-term facilities within buffers or protected zones for soil and water resources is discouraged, but may be permitted if soil and water resource management objectives can be maintained.	No	Project is not located in or near the area specified in the CMA.	Buffers would not be required under the Project for soils or water resources.	
	LUPA-SW-3	Where a seeming conflict between CMAs within or between resources arises, the CMA(s) resulting in the most resource protection apply.	Yes		This CMA would be implemented should the proposed PDFs within Appendix F not be sufficient for protection and/or impact minimization of a specific resource.	
	LUPA-SW-4	Nothing in the "Exceptions" below applies to or takes precedence over any of the CMAs for biological resources.	No	Land use does not occur on project site.	The exceptions for groundwater resources below do not apply to the Project.	
Groundwater Resources	LUPA-SW-5	Exceptions to any of the specific soil and water stipulations contained in this section, as well as those listed below under the subheadings "Soil Resources," "Surface Water," and "Groundwater Resources," may be granted by the authorized officer if the applicant submits a plan, or, for BLM-initiated actions, the BLM provides documentation, that demonstrates:	Yes		The estimated amount of water needed for the life of the Project is about 0.736 acre-feet or 0.000098 percent of the total current level of Lake Mead. The natural groundwater recharge of the Ogilby Valley Groundwater Basin is 250 acre-feet per year (California's Groundwater Bulletin 118) and the Project estimated water amount is 0.30 percent of the natural recharge rate. The project does not	

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		<ul style="list-style-type: none"> <li>The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.</li> </ul>			propose groundwater pumping for Project activities. Procurement of water for Project activities from local vendors may be sourced from groundwater or from the Colorado River	
Soil Resources	LUPA-SW-6	In addition to the applicable required governmental safeguards, third party activities will implement up-to-date standard industry construction practices to prevent toxic substances from leaching into the soil.	Yes		A Spill Contingency Plan would be developed and implemented per the PDF in Appendix F. No further mitigation would be required; therefore, this CMA would not be required for implementation.	
	LUPA-SW-7	Prepare an emergency response plan, approved by the BLM contaminant remediation specialist, that ensures rapid response in the event of spills of toxic substances over soils.	Yes		A Spill Contingency Plan would be developed and implemented per the PDF in Appendix F. No further mitigation would be required; therefore, this CMA would not be required for implementation.	
	LUPA-SW-8	As determined necessary on an activity specific basis, prepare a site plan specific to major soil types present (≥5% of footprint or laydown surfaces) in Wind Erodibility Groups 1 and 2 and in Hydrology Soil Class D as defined by the USDA Natural Resource Conservation Service to minimize water and air erosion from disturbed soils on activity sites.	No	Project is not located in or near the area specified in the CMA.	Soils within the Project Area are not classified as within Wind Erodibility Groups 1 and 2 or in Hydrology Soil Class D.	
	LUPA-SW-9	The extent of desert pavement within the proposed boundary of an activity shall be mapped if it is anticipated that the activity may create erosional or ecologic impacts. Mapping will use the best available data and standards, as determined by BLM. Disturbance of desert pavement within the boundary of an activity shall be limited to the extent possible. If disturbance from an activity is likely to exceed 10% of the desert pavement mapped within the activity boundary, the BLM will determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.	No	Project is not located in or near the area specified in the CMA.	Surface disturbing exploration activities are expected to be conducted within previously disturbed areas and outside of potential desert pavement areas.	
	LUPA-SW-10	The extent of additional sensitive soil areas (cryptobiotic soil crusts, hydric soils, highly corrosive soils, expansive soils, and soils at severe risk of erosion) shall be mapped if it is anticipated that an activity will impact these resources. To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within an area with sensitive soils.	
	LUPA-SW-11	Where possible, side casting shall be avoided where road construction requires cut- and-fill procedures.	Yes		All access areas, except for the proposed permanent access road for access to Drill Area 1, would be reclaimed; therefore this CMA would be implemented.	
Surface Water	LUPA-SW-12	Except in DFAs, exclude long-term structures in, playas (dry lake beds), and Wild and Scenic River corridors, except as allowed with minor incursions (see definition in the Glossary of Terms).	No	Land use does not occur on project site.	The Project would not construct long-term structures.	
	LUPA-SW-13	BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition.	No	Project is not located in or near the area specified in the CMA.	There are no riparian areas within the Project Area and vicinity.	
	LUPA-SW-14	All relevant requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) will be complied with.	Yes		All applicable requirements would be complied with. A jurisdictional determination is currently under review with the US Army Corps of Engineers detailed that no jurisdictional waters or wetlands are present within the Project Area and vicinity. No further mitigation measures would be required; therefore, this CMA would not be required for implementation.	
	LUPA-SW-15	Surface water diversion for beneficial use will not occur absent a state water right.	No	Land use does not occur on project site.	The Project would not divert surface water.	
	LUPA-SW-16	The 100-year floodplain boundaries for any surface water feature in the vicinity of the project will be identified. If maps are not available from the Federal Emergency Management Agency (FEMA), these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within, or alteration of, 100-year floodplains will be avoided where possible, and permitted only when all required permits from other agencies are obtained.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within a 100-year floodplain.	
Groundwater	LUPA-SW-17	An activity's groundwater extraction shall not contribute to exceeding the estimated perennial yield for the basin in which the extraction is taking place. Perennial yield is that quantity of groundwater that can be withdrawn from the groundwater basin without exceeding the long-term recharge of the basin or unreasonably affecting the basin's physical, chemical, or biological integrity. It is further clarified arithmetically below.	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	
	LUPA-SW-18	Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the project or its associated mitigation and remediation measures, as specified in approved plans and permits.				
	LUPA-SW-19	Water flow meters shall be installed on all extraction wells permitted by BLM.				
	LUPA-SW-20	After application of applicable avoidance and minimization measures, all remaining unavoidable residual impacts to surface waters from the proposed activity shall be mitigated to ensure no net loss of function and value, as determined by the BLM.	No	Land use does not occur on project site.	No unavoidable residual impacts to surface waters are anticipated. A Stormwater Pollution Prevention Plan (SWPPP) would be developed and implemented and impacts to surface hydrology would be minimized and reclaimed as described in Appendix F of the EA.	
	LUPA-SW-21	Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.	No	Land use does not occur on project site.	No obstructions to surface water flow are anticipated with the short-term, temporary nature of exploration activities. A SWPPP would be developed and implemented and impacts to surface hydrology would be minimized and reclaimed as detailed in Appendix F of the EA.	
	LUPA-SW-22	All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the project area, or specific mitigation measures shall be implemented that will minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS, CDFW, and other agencies, as appropriate. These beneficial uses may include municipal, domestic, or agricultural water supply; groundwater recharge; surface water replenishment; recreation; water quality enhancement; flood peak attenuation or flood water storage; and wildlife habitat.	No	Land use does not occur on project site.	Water required for project activities would be purchased commercially and transported to the project site.	
	LUPA-SW-23	<p>A Water (Groundwater) Supply Assessment shall be prepared in conjunction with the activity's NEPA analysis and prior to an approval or authorization. This assessment must be approved by the BLM in coordination with USFWS, CDFW, and other agencies, as appropriate, prior to the development, extraction, injection, or consumptive use of any water resource. The purpose of the Water Supply Assessment is to determine whether over-use or over-draft conditions exist within the project basin(s), and whether the project creates or exacerbates these conditions. The Assessment shall include an evaluation of existing extractions, water rights, and management plans for the water supply in the basin(s) (i.e., cumulative impacts), and whether these cumulative impacts (including the proposed project) can maintain existing land uses as well as existing aquatic, riparian, and other water-dependent resources within the basin(s). This assessment shall identify:</p> <ul style="list-style-type: none"> <li>All relevant groundwater basins or sub-basins and their relationships.</li> <li>All known aquifers in the basin(s), including their dimensions, whether confined or unconfined, estimated hydraulic conductivity and transmissivity, groundwater surface elevations, and direction and movement of groundwater.</li> <li>All surface water basin(s) related to water runoff, delivery, and supply, if different from the groundwater basin(s).</li> <li>All sites of surface outflow (springs or seeps) contained within the basin(s), including historic sites.</li> <li>All other surface water bodies in the basins(s), including rivers, streams, ephemeral washes/drainages, lakes, wetlands, playas, and floodplains.</li> <li>The water requirements of the proposed project and the source(s) of that water.</li> <li>An analysis demonstrating that water of sufficient quantity and quality is available from identified source(s) for the life of the project.</li> </ul>	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	

LUPA Wide						
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments	
		<ul style="list-style-type: none"> <li>An analysis of potential project-related impacts on water quality and quantity needed for beneficial uses, reserved water rights, existing groundwater users, or habitat management within or down gradient of the groundwater basin within which the project would be constructed.</li> <li>The above analyses shall be in the form of a numerical groundwater model. The model extent shall encompass the groundwater basin within which the project would be constructed, and any groundwater-dependent resources within or down gradient of that basin.</li> </ul> <p>The primary product of the Water Supply Assessment shall be a baseline water budget, which shall be established based on the best-available data and hydrologic methods for the identified basin(s). This water budget shall classify and describe all water inflow and outflow to the identified basin(s) or system using best-available science and the following basic hydrologic formula or a derivation: <math>P - R - E - T - G = \Delta S</math></p> <p>where P is precipitation and all other water inflow or return flow, R is surface runoff or outflow, E is evaporation, T is transpiration, G is groundwater outflow (including consumptive component of existing pumping), and <math>\Delta S</math> is the change in storage. The volumes in this calculation shall be in units of either acre-feet per year or gallons per year. The water budget shall quantify the existing perennial yield of the basin(s). Perennial yield is defined arithmetically as that amount such that <math>P - R - E - T - G</math> is greater than or equal to 0</p> <p>Water use by groundwater-dependent resources is implicitly included in the definition of perennial yield. For example, in many basins the transpiration component (T) includes water use by groundwater-dependent vegetation. Similarly, groundwater outflow (G) includes discharge to streams, springs, seeps, and wetlands. If one or more budget components is altered, then one or more of the remaining components must change for the hydrologic balance to be maintained. For example, an increase in the consumptive component of groundwater pumping can lower the water table and reduce transpiration by groundwater-dependent vegetation. The groundwater that had been utilized by the groundwater-dependent vegetation would then be considered "captured" by groundwater pumping. Similarly, increased groundwater consumption can capture groundwater that discharges to streams, springs, seeps, wetlands and playas. These changes can occur slowly over time, and may require years or decades before the budget components are fully adjusted. Accordingly, the water/groundwater supply assessment requires that the best-available data and hydrologic methods be employed to quantify these budgets, and that groundwater consumption effects on groundwater-dependent ecosystems be identified and addressed.</p> <p>The Water Supply Assessment shall also address:</p> <ul style="list-style-type: none"> <li>Estimates of the total cone of depression considering cumulative drawdown from all potential pumping in the basin(s), including the project, for the life of the project through the decommissioning phase</li> <li>Potential to cause subsidence and loss of aquifer storage capacity due to groundwater pumping</li> <li>Potential to cause injury to other water rights, water uses, and land owners</li> <li>Changes in water quality and quantity that affect other beneficial uses</li> <li>Effects on groundwater dependent vegetation and groundwater discharge to surface water resources such as streams, springs, seeps, wetlands, and playas that could impact biological resources, habitat, or are culturally important to Native Americans</li> <li>Additional field work that may be required, such as an aquifer test, to evaluate site specific project pumping impacts and if necessary, establish trigger points that can be used for a Groundwater Water Monitoring and Mitigation Plan</li> <li>The mitigation measures required, if there are significant or potentially significant impacts on water resources include but are not limited to, the use of specific technologies, management practices, retirement of active water rights, development of a recycled water supply, or water imports</li> </ul>				
	LUPA-SW-24	A Groundwater Monitoring and Reporting Plan, and Mitigation Action Plan shall be prepared to verify the Water Supply Assessment and adaptively manage water use as part of project operations. This plan shall be approved by BLM, in coordination with USFWS, CDFW, and other agencies as appropriate, prior to the development, extraction, injection, or consumptive use of any water resource. The quality and quantity of all surface water and groundwater used for the project shall be monitored and reported using this plan. Groundwater monitoring includes measuring the effects of a project's groundwater extraction on groundwater surface elevations, groundwater flow paths, changes to groundwater-dependent vegetation, and of aquifer recovery after project decommissioning. Surface water monitoring, if applicable, shall monitor for changes in the flows, water volumes, channel characteristics, and water quality as a result of a project's surface water use. Monitoring frequency and geographic scope and reporting frequency shall be decided on a project and site-specific basis and in coordination with the appropriate agencies that manage the water and land resources of the region. The geographic scope may include at the very least, all basins/sub-basins that potentially receive inflow from the basin where the proposed project may be sited, and all basins/sub-basins that may potentially contribute inflow to the basin where the proposed project is located. The plan shall also detail any mitigation measures that may be required as a result of the project. This plan and all monitoring results shall be made available to BLM. BLM will make the plan and results available to USFWS, CDFW, and other applicable agencies.	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	
	LUPA-SW-25	Where groundwater extraction, in conjunction with other cumulative impacts in the basin, has potential to exceed the basin's perennial yield or to impact water resources, one or more "trigger points," or specified groundwater elevations in specific wells or surface water bodies, shall be established by BLM. If the groundwater elevation at the designated monitoring wells falls below the trigger point(s)(or exceeds the trigger pumping rate), additional mitigation measures, potentially including cessation of pumping, will be imposed.	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	
	LUPA-SW-26	Groundwater pumping mitigation shall be imposed if groundwater monitoring data indicate impacts on water-dependent resources that exceed those anticipated and otherwise mitigated for in the NEPA analysis and ROD, even if the basin's perennial yield is not exceeded. Water-dependent resources include riparian or phreatophytic vegetation, springs, seeps, streams, and other approved domestic or industrial uses of groundwater. Mitigation measures may include changes to pumping rates, volume, or timing of water withdrawals; coordinating and scheduling groundwater pumping activities in conjunction with other users in the basin; acquisition of project water from outside the basin; and/or replenishing the groundwater resource over a reasonably short timeframe. For permitted activities, permittees may also be required to contribute funds to basin-wide groundwater monitoring networks in basins such as those encompassed by the East Riverside DFA or in the Calvada Springs/South Pahrump Valley area, and to cooperate in the compilation and analysis of groundwater data.	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	

LUPA Wide						
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	LUPA-SW-27	Water-conservation measures shall be required in basins where current groundwater demand is high and has the future potential to rise above the estimated perennial yield (e.g., Pahrump Valley). These measures may include the use of specific technology, management practices, or both. A detailed discussion and analysis of the effectiveness of mitigation measures must be included. Application of these measures shall be detailed in the Groundwater Water Monitoring and Mitigation Plan.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within a basin with current high groundwater demands, and there would be no groundwater extraction activities under the Project.	
	LUPA-SW-28	Groundwater extractions from adjudicated basins, such as the Mojave River Basin, may be subject to additional restrictions imposed by the designated authority; examples include the Mojave Water Agency and San Bernardino County (see County Ordinance 3872). Where provisions of the adjudication allow for acquisition of water rights, project developers could be required to retire water rights at least equal in volume to those necessary for project operation or propose an alternative offset based on the conditions unique to the adjudicated basin.	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	
	LUPA-SW-29	Groundwater pumping mitigation may be imposed if monitoring data indicate impacts on groundwater or groundwater-dependent habitats outside the DRECP area, including those across the border in Nevada. See LUPA-SW-26 for potential mitigation measures.	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	
	LUPA-SW-30	Activities shall comply with local requirements for any long term or short term domestic water use and wastewater treatment.	No	Land use does not occur on project site.	The Project would transport water to the Project site using water trucks and no wastewater treatment would occur.	
	LUPA-SW-31	The siting, construction, operation, maintenance, remediation, and abandonment of all wells shall conform to specifications contained in the California Department of Water Resources Bulletins #74-81 and #74-90 and their updates.	No	Land use does not occur on project site.	There would be no new wells constructed under the Project.	
	LUPA-SW-32	Colorado River hydrologic basin - The concepts, principles and general methodology used in the Colorado River Accounting Surface Method, as defined in U.S. Geological Survey Scientific Investigations Report 2008-5113 (USGS 2009), and existing and future updates or a similar methodology, are considered the best available data for assessing activity/project related ground water impacts in the Colorado River hydrologic basin. The best available data and methodology shall be used to determine whether activity/project-related pumping would result in the extracted water being replaced by water drawn from the Colorado River. If activity/project-related groundwater pumping results in the static groundwater level at the well being near (within 1 foot), equal to, or below the Accounting Surface in a basin hydrologically connected to the Colorado River, that consumption shall be considered subject to the Law of the River (Colorado River Compact of 1922 and amendments). In such circumstances, BLM shall require the applicant to offset or otherwise mitigate the volume of water causing drawdown below the Accounting Surface. Details of such mitigation measures and the right to the use of water shall be described in the Groundwater Water Monitoring and Mitigation Plan.	No	Land use does not occur on project site.	There would be no groundwater extraction activities under the Project.	
Soil, Water, and Water-Dependent Resources Restricted to Specific Areas on BLM Lands	LUPA-SW-33	<b>Stipulations for groundwater development in the proximity of Devils Hole:</b> Any development scenario for an activity within 25 miles of Devils Hole shall include a plan to achieve <i>zero-net</i> or <i>net-reduced</i> groundwater pumping to reduce the risk of adversely affecting senior federal reserved water rights, the designated critical habitat of the endangered Devils Hole pupfish, and the free-flowing requirements of the Wild and Scenic Amargosa River. This plan will require operators to acquire one or more minimization water rights (MWRs) in the over-appropriated, over-pumped, and hydraulically connected Amargosa Desert Hydrographic Basin in Nevada. The MWR(s) shall be: (1) an amount equal (at minimum) to that which is needed for construction and operations; (2) historically fully utilized, preferably for agricultural use; and (3) senior and closer to Devils Hole than the proposed point of diversion.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within or in proximity to Devils Hole.	
	LUPA-SW-34	<b>Stipulations for groundwater development in the Calvada Springs/South Pahrump Valley area:</b> Activities in this area shall be required to acquire one or more MWRs in the Pahrump Valley Hydrographic Basin in Nevada. The acquired MWR(s) must: (1) be at least equal to the amount proposed to be required and actually used for project construction and operations; and (2) be fully utilized for at least the prior ten years.	No	Project is not located in or near the area specified in the CMA.	The Project is not located within the Calvada Springs/South Pahrump Valley area.	
	LUPA-SW-35	Stipulations for activities in the vicinity of Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve: The NEPA for activities involving groundwater extraction that are in the vicinity of Death Valley National Park, Joshua Tree National Park, or the Mojave National Preserve shall analyze and address any potential impacts of groundwater extraction on Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve. BLM will consult with the National Park Service on this process. The analysis or analyses shall include: <ul style="list-style-type: none"> <li>• Potential impacts on the water balances of groundwater basins within these parks and preserves</li> <li>• A map identifying all potentially impacted surface water resources in the vicinity of the project, including a narrative discussion of the delineation methods used to discern those surface waters in the field</li> <li>• Any project-related modifications to surface water resources, both temporary and permanent</li> <li>• Analysis of any potential impacts on perennial streams, intermittent streams, and ephemeral drainages that could negatively impact natural riparian buffers</li> <li>• Impacts of any project proposed truncation, realignment, channelization, lining, or filling of surface water resources that could change drainage patterns, reduce available riparian habitat, decrease water storage capacity, or increase water flow velocity or sediment deposition, in particular where stormwater diverted around or through the project site is returned to natural drainage systems downslope of the project</li> <li>• Any potential indirect project-related causes of hydrologic changes that could exacerbate flooding, erosion, scouring, or sedimentation in stream channels</li> <li>• Alternatives and mitigation measures proposed to reduce or eliminate such impacts</li> </ul>	No	Project is not located in or near the area specified in the CMA.	The Project is not located within or in the vicinity of Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve.	
Visual Resources Management	LUPA-VRM-1	Manage Visual Resources in accordance with the VRM classes shown on Figure 9.	Yes		The majority of the Project Area falls within Class III, with some Class IV in the southernmost portion. Impacts to visual resources are analyzed within the EA and visual contrast rating worksheets are provided in Appendix H. The Project would comply with all VRM objectives. Further mitigation would not be required; therefore, this CMA would not be required for implementation in addition to the PDFs in Appendix F and based on the visual resources analysis.	
	LUPA-VRM-2	Ensure that activities within each of the VRM Class polygons meets the VRM objectives described above, as measured through a visual contrast rating process.	Yes		The majority of the Project Area falls within Class III, with some Class IV in the southernmost portion. Impacts to visual resources are analyzed within the EA and visual contrast rating worksheets are provided in Appendix H. The Project would comply with all VRM objectives. Further mitigation would not be required; therefore, this CMA would not be required for implementation in addition to the PDFs in Appendix F and based on the visual resources analysis.	

LUPA Wide					
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	LUPA-VRM-3	Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located. New transmission lines routed through designated corridors where they do not meet VRM Class Objectives will require RMP amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursuing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June 2008, as updated on April 2014, or the most recent version) (vs. galvanized) on towers and support facilities, and employing other BMPs to reduce contrast. Such efforts will be retained even if an RMP amendment is determined to be needed. Visual Resource BMPs that reduce adverse visual contrast will be applied in VRM Class conforming situations. For a reference of BMPs for reducing visual impacts see the "Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands", available at <a href="http://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/energy/renewable_references.Par.1568.File.dat/RenewableEnergyVisualImpacts_BMPs.pdf">http://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/energy/renewable_references.Par.1568.File.dat/RenewableEnergyVisualImpacts_BMPs.pdf</a> , or the most recent version of the document or BMPs for VRM, as determined by BLM.	No	Project is not located in or near the area specified in the CMA.	The Project does not propose transmission facilities.
Wilderness Characteristics	LUPA-WC-1	Complete an inventory of areas for proposed activities that may impact wilderness characteristics if an updated wilderness characteristics inventory is not available.	No	Project is not located in or near the area specified in the CMA.	Lands with Wilderness Characteristics are not present within the Project Area.
	LUPA-WC-2	Employ avoidance measures as described under DFAs and approved transmission corridors.	No	Project is not located in or near the area specified in the CMA.	Lands with Wilderness Characteristics are not present within the Project Area.
	LUPA-WC-3	For inventoried lands found to have wilderness characteristics but not managed for those characteristics compensatory mitigation is required if wilderness characteristics are directly impacted. The compensation will be: <ul style="list-style-type: none"> <li>• 2:1 ratio for impacts from any activities that impact those wilderness characteristics, except in DFAs and transmission corridors</li> <li>• 1:1 ratio for impact from any activities that impact the wilderness characteristics in DFAs and transmission corridors</li> </ul> Wilderness compensatory mitigation may be accomplished through acquisition and donation, by willing landowners, to the federal government of (a) wilderness inholdings, (b) wilderness edge holdings that have inventoried wilderness characteristics, or (c) other areas within the LUPA Decision Area that are managed to protect wilderness characteristics. Restoration of impaired wilderness characteristics in Wilderness, Wilderness Study Area, and lands managed to protect wilderness characteristics could be substituted for acquisition.	No	Project is not located in or near the area specified in the CMA.	Lands with Wilderness Characteristics are not present within the Project Area.
	LUPA-WC-4	For areas identified to be managed to protect wilderness characteristics, identified in Figure 7, the following CMAs are required: <ul style="list-style-type: none"> <li>• Include a no surface occupancy stipulation for any leasable minerals with no exceptions, waivers, or modifications.</li> <li>• Exclude these areas from land use authorizations, including transmission.</li> <li>• Close areas to construction of new roads and routes. Vehicles will continue to be permitted on existing designated routes.</li> <li>• Close areas to mineral material sales.</li> <li>• Prohibit commercial or personal-use permits for extraction of materials (e. g. no wood-cutting permits).</li> <li>• Manage the area as VRM II.</li> <li>• Require that new structures and facilities are related to the protection or enhancement of wilderness characteristics or are necessary for the management of uses allowed under the land use plan.</li> <li>• Make lands unavailable for disposal from federal ownership.</li> </ul>	No	Project is not located in or near the area specified in the CMA.	Lands with Wilderness Characteristics are not present within the Project Area.
	LUPA-WC-5	Manage the following Wilderness Inventory Units to protect wilderness characteristics: <ul style="list-style-type: none"> <li>• 132A-2 / 132A-3 / 132B / 136 / 136-1 / 145-1-1 / 145-2-1 / 145-3-1 / 149-2 / 150-2-2 / 158-1 / 158-2 / 159 / 159-1 / 159A-1 / 160 / 160-1 / 160B-2A / 160B-2B / 160B-2F / 160B-3A / 160B-4A / 160B-3B / 160B-4B / 170-1 / 170-3 / 193-1 / 206-1-1 / 206-1-2 / 206-1-3 / 206-1-4 / 222-2-1 / 251-1 / 251-1-1 / 251-1-2 / 251-2-2 / 251-3 / 251A / 252 / 259-1 / 259-2 / 266-1 / 276-1 / 276-3 / 277 / 277A-1 / 278 / 280 / 294-1 / 294-2 / 295 / 295A / 304-2 / 305-1 / 305-2 / 307-1 / 307-2 / 307-1-1 / 307-1-2 / 307-1-3 / 312-1 / 312-2 / 312-3 / 322-1 / 325-1 / 325-2 / 325-3 / 325-4 / 325-5 / 325-7 / 325-8 / 315-14 / 325-17 / 329 / 352-2 / 352A / 352A-1 / 354 / 355-1 / 355-2 / 355-3</li> </ul>	No	Project is not located in or near the area specified in the CMA.	Lands with Wilderness Characteristics are not present within the Project Area.

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Comprehensive Trails & Travel Management	NLCS-CTTM-1	<b>Comprehensive Trails and Travel Management</b> – Trails and Travel Management in California Desert National Conservation Lands will be in accordance with the applicable Transportation and Travel Management Plan. Future Transportation and Travel Management Plans for National Conservation Lands would be developed in accordance to the appropriate BLM guidance and policy. The California Desert National Conservation Land designation will be addressed in those subsequent plans with an emphasis on routes that provide for the conservation, protection, and restoration, as well as recreational use and enjoyment of the California Desert National Conservation Lands that is compatible with the values for which the areas were designated.	No	Land use does not occur on project site.	The Project does not propose transportation routes for conservation, protection, restoration, or recreational use.
Cultural Resources & Tribal Interests	NLCS-CUL-1	Any adverse effects to historic properties resulting from allowable uses will be addressed through the Section 106 process of the National Historic Preservation Act and the implementing regulations at 36 CFR Part 800. Resolution of adverse effects will in part be addressed via alternative mitigation that includes regional synthesis and interpretation of existing archaeological data in addition to mitigation measures determined through the Section 106 consultation process.	Yes		The Project would avoid all cultural resources. A Class III Cultural Resources Inventory Report is on file with the BLM El Centro Field Office. Additional mitigation measures for protection of cultural resources would be required by the BLM and are included as Appendix F of the EA. Section 106 of the NHPA consultation would continue throughout the life of the Project.
Ground Disturbance Caps	NLCS-DIST-1	<b>Ground Disturbance Caps</b> – Development in California Desert National Conservation Lands are limited by the 1% ground disturbance cap which is the total ground disturbance (existing [past and present] plus future), or to the level allowed by collocated ACEC(s) with its smaller ground disturbance cap units, whichever is more restrictive. Refer to Appendix B for the ACEC Special Unit Management Plans. The ground disturbance caps will be used, managed and implemented following the methodology in the California Desert National Conservation Lands and ACEC land allocation sections, and repeated in, <b>NLCS-DIST-2</b> and <b>ACEC-DIST-2</b> .	No	Land use does not occur on project site.	Ground disturbance caps do not apply to mining or mineral exploration projects.
	NLCS-DIST-2	<b>Ground Disturbance Cap Management and Implementation.</b> Specifically, the ground disturbance caps would be implemented as a limitation and objective using the following process: <ul style="list-style-type: none"> <li>• Limitation: If the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC unit is below the designated ground disturbance cap (see calculation method), the ground disturbance cap is a limitation on ground-disturbing activities within the California Desert National Conservation Lands and/or ACEC, and precludes approval of future discretionary ground disturbing activities (see exceptions below) above the cap.</li> <li>• Objective, triggering disturbance mitigation: If the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is at or above its designated cap, the cap functions as an objective, triggering the specific ground disturbance mitigation requirement. Ground disturbance mitigation is unique to ground disturbance cap implementation and a discrete form of compensatory mitigation, separate from other required mitigation in the DRECP LUPA (see Glossary of Terms). The ground disturbance mitigation requirement remains in effect for all (see exceptions below) activities until which time the California Desert National Conservation Lands and/or ACEC drops below the cap, at which time the cap becomes a limitation and the ground disturbance mitigation is no longer a requirement. If ground disturbance mitigation opportunities do not exist in a unit (see below for “unit” of measurement), ground disturbing activities (see exceptions below) will not be allowed in that unit until which time opportunities for ground disturbance mitigation in the unit become available (see types and forms of ground disturbance mitigation below) or the unit recovers and drops below the cap.</li> <li>• Actions necessary to control the immediate impacts of an emergency that are urgently needed to reduce the risk to life, property, or important natural, cultural, or historic resources, in accordance with 43 Code of Federal Regulations (CFR) 46.150, are an exception to the ground disturbance cap limitation, objective and ground disturbance mitigation requirements. Ground disturbance from emergency actions will count in the ground disturbance calculation for other activities, and also be available for ground disturbance mitigation opportunities and restoration, as appropriate.</li> </ul>	No	Land use does not occur on project site.	Ground disturbance caps do not apply to mining or mineral exploration projects.

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		<p><b>Calculating ground disturbance:</b> Ground disturbance will be calculated on BLM managed land at the time of an individual proposal, by BLM for a BLM initiated action or by a third party for an activity needing BLM approval or authorization, for analysis in the activity-specific National Environmental Policy Act (NEPA) document. Once BLM approves/accepts or conducts a calculation for a ACEC, that calculation is considered the baseline of past and present disturbance and is valid for 12 months, and can be used by other proposed activities in the same unit. Ground disturbances, that meet the criteria below, would be added into the calculation for the 12 month period without having to revisit the entire calculation. After a 12 month period has passed and a proposed action triggers the disturbance calculation, BLM will examine the existing ground disturbance calculation to determine: 1) if the calculation is still reliable, in which case add in any additional disturbance that has occurred since that calculation; or 2) if the disturbance must be recalculated in its entirety. Once completed for a specific activity, the ground disturbance calculation may be used throughout the activity's environmental analysis. However, the BLM may recalculate the affected unit(s) or portions of the unit(s) if it determines such recalculation is necessary for the BLM's environmental analysis.</p> <p><b>Unit of measurement:</b> When calculating the ground disturbance, it is necessary to identify the appropriate unit level at which the disturbance will be calculated. For ground disturbing activities that occur within California Desert National Conservation Lands, the disturbance calculation will be based on the California Desert National Conservation Lands, ACEC unit boundary, or the boundary of the disturbance cap area(s), whichever area is smaller. If there is overlap between California Desert National Conservation Lands and an ACEC, the calculation will take place based on the smallest unit. If an activity/project overlaps two or more smaller units, the cap will be calculated, individually, for all affected units.</p> <p><b>Ground disturbance includes:</b> The calculation shall include existing ground disturbance in addition to the estimated ground disturbance from the proposed activity (future) determined at the time of the individual proposal:</p> <ul style="list-style-type: none"> <li>• Authorized/approved ground disturbing activities – built and not yet built</li> <li>• BLM identified routes – all routes, trails, etc., authorized and unauthorized, identified in the Ground Transportation Linear Feature (GTLF) and/or other BLM route network database (i.e., BLM local databases that contain the best available data on routes and trails, replacement for GTLF, etc.), following applicable BLM standards and policy for identification of routes (authorized and unauthorized)</li> <li>• Assumptions may be used to identify the percentage/degree/area/etc. of ground disturbance for a specific authorized/approved activity or activity-type based on: <ul style="list-style-type: none"> <li>○ Activity-specific environmental analysis, such as NEPA or ESA Section 7 Biological Assessment</li> <li>○ Known and documented patterns of ground disturbance</li> <li>○ Other documented site-specific factors that limit or play a role in ground disturbance, such as topography, geography, hydrology (e.g. desert washes obliterating authorized routes on a regular basis), historical and predicted patterns of use</li> </ul> </li> <li>• Any unauthorized disturbance that can be seen at a 1:10,000 scale using the best available aerial imagery</li> <li>• Ground disturbance from wildfire, animals, or other disturbances that can be seen at a 1:10,000 scale using the best available aerial imagery</li> <li>• Historic Route 66 maintenance - potential ground disturbance estimates: <ul style="list-style-type: none"> <li>– As part of the ground disturbance calculation, the potential disturbance associated with estimated operations related to the maintenance of Historic Route 66 will automatically be included in the ground disturbance calculation as existing ground disturbance for the units specified below, until which time these estimated acres are no longer necessary due to approved operations:</li> </ul> </li> </ul>			

California Desert NCL

Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
		<ul style="list-style-type: none"> <li>▪ South Amboy-Mojave California Desert National Conservation Lands</li> <li>▪ Bristol Mountains ACEC 92 acres</li> <li>▪ Chemehuevi ACEC 43 acres</li> <li>▪ Pisgah ACEC 86 acres</li> </ul> <ul style="list-style-type: none"> <li>○ The estimated ground disturbance acreage includes disturbance associated with potential access to the locations if no current access exists.</li> <li>○ The estimated ground disturbance acres for maintenance of Historic Route 66 in the before mentioned conservation units is not approval of these activities by BLM. Activities associated with the management and maintenance of Historic Route 66 on BLM administered land will follow all applicable laws, regulations and policies.</li> </ul> <p><b>Exceptions to the disturbance calculation:</b></p> <ul style="list-style-type: none"> <li>• Actions necessary to control the immediate impacts of an emergency that are urgently needed to reduce the risk to life, property, or important natural, cultural, or historic resources, in accordance with 43 CFR 46.150, will not be required to conduct a disturbance calculation. If the actions are ground disturbing, that disturbance will count towards the disturbance cap when next calculated for non-emergency activities.</li> <li>• Actions that are authorized under a Department of Interior (DOI) or BLM NEPA Categorical Exclusion will not be required to conduct a disturbance calculation; however, these actions are not exempt from the disturbance mitigation requirement if a unit is at or above its cap. Although the BLM is not required to calculate the disturbance cap before approving an activity under a Categorical Exclusion, if the BLM knows an area is at or exceeding the cap, the disturbance mitigation requirements would apply to that activity.</li> <li>• BLM authorized/approved research or restoration activities that are designed or intended to promote and enhance the nationally significant landscape values for which the California Desert National Conservation Land was designated.</li> <li>• Actions that are entirely within the footprint of an existing authorized/approved site of ground disturbance that is within the calculation above.</li> <li>• Livestock grazing permit renewals (however, water developments or other range improvements requiring an Environmental Assessment or Environmental Impact Statement would be subject to the disturbance calculation and any mitigation requirements).</li> </ul> <p><b>Ground disturbance mitigation:</b> The purpose of ground disturbance mitigation (disturbance mitigation) is to allow actions to occur in California Desert National Conservation Lands and/or ACEC that is at or above its designated disturbance cap(s), while at the same time providing a restoration mechanism that will, over time, improve the condition of the unit(s) and take them below their cap. Disturbance mitigation is compensatory. Disturbance mitigation is unique to ground disturbance cap implementation and a discrete form of compensatory mitigation, separate from other required mitigation in the DRECP (see Glossary of Terms).</p> <p>Disturbance mitigation may only be used for ground disturbance that is otherwise allowed by the LUPA and consistent with the purposes for which the California Desert National Conservation Lands and/or ACEC was designated. Areas used for disturbance mitigation are still considered disturbed until which time they meet the "Ground Disturbance Recovery" criteria in the description below.</p>			



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		<p><b>Unit for implementing disturbance mitigation:</b> The appropriate unit level for implementing disturbance mitigation is the same as that used for calculating ground disturbance. For ground disturbing activities that occur within California Desert National Conservation Lands, the disturbance mitigation will be required within the California Desert National Conservation Lands, ACEC boundary, or the boundary of the disturbance cap area(s), whichever area is smaller. If there is overlap between California Desert National Conservation Lands and an ACEC, the disturbance mitigation will take place in the smallest unit. If an activity/project overlaps two or more smaller units, disturbance mitigation will be required for all units that are at or over their specified disturbance cap.</p> <p><b>No disturbance mitigation required:</b> If the calculated ground disturbance for the unit(s) is under the cap:</p> <ul style="list-style-type: none"> <li>No disturbance mitigation required; use activity design features to minimize new ground disturbance and help stay below cap.</li> </ul> <p><b>Disturbance mitigation required:</b> If the calculated ground disturbance is at or above the unit(s) cap, disturbance mitigation is required:</p> <ul style="list-style-type: none"> <li>Use activity design features to minimize new ground disturbance to the extent practicable.</li> <li>For the portion of the proposed activity that is located on land within an area previously disturbed by an authorized/approved action that has been terminated the required disturbance mitigation ratio is 1.5 (1½):1.</li> <li>For the portion of the proposed activity that is located on undisturbed land or land disturbed by unauthorized activities, the required disturbance mitigation ratio is 3:1.</li> <li>Although the BLM is not required to calculate the ground disturbance cap before approving/authorizing an activity under a Categorical Exclusion, if the BLM knows an area is at or exceeding the cap, the disturbance mitigation requirements would apply to that activity.</li> <li>In the rare circumstance where the BLM authorizes activities on areas restored (e.g., as disturbance or other forms of mitigation), the required disturbance mitigation ratio requirement is doubled, that is, 3:1 or 6:1, respectively.</li> <li>If disturbance mitigation opportunities do not exist in a unit, ground-disturbing activities (see exceptions below) will not be allowed in that unit until which time opportunities for disturbance mitigation in the unit become available (see types and forms of disturbance mitigation below) or the unit recovers and drops below the cap.</li> </ul> <p><b>Exceptions to the disturbance mitigation requirement:</b></p> <ul style="list-style-type: none"> <li>Any portion of the proposed activity that is located on land previously disturbed by an existing, valid authorized/approved action.</li> <li>Livestock grazing permit renewals (however, water developments or other range improvements requiring an Environmental Assessment or Environmental Impact Statement would be subject to the disturbance calculation and any mitigation requirements).</li> <li>Land use authorization assignments and renewals with no change in use.</li> <li>BLM authorized/approved activities that are designed and implemented to reduce existing ground disturbance, such as ecological, cultural, or habitat restoration or enhancement activities.</li> <li>Non-discretionary actions, where BLM has no authority to require compensatory mitigation.</li> </ul> <p><b>Types and forms of disturbance mitigation:</b></p> <ul style="list-style-type: none"> <li>Restoration of previously disturbed BLM lands within the boundary of the specific California Desert National Conservation Lands and/or ACEC unit(s) being impacted.</li> <li>Acquisition of undisturbed lands within the boundary of the specific California Desert National Conservation Lands and/or ACEC unit being impacted.</li> </ul>			

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		<ul style="list-style-type: none"> <li>Ground disturbance mitigation can be “nested” (i.e., combined) with other resource mitigation requirements, when appropriate. For example, a parcel restored for desert tortoise habitat mitigation may also satisfy the disturbance mitigation requirement if the parcel is within the appropriate unit of California Desert National Conservation Lands, ACEC boundary, or smaller disturbance cap unit.</li> </ul> <p><b>Ground Disturbance Recovery</b>                      In general, California Desert National Conservation Lands and/or ACEC ground disturbance recovery would be determined during the decadal ground disturbance threshold ecoregion trend monitoring assessments (see below, and Monitoring and Adaptive Management). California Desert National Conservation Lands and/or ACEC recovery may be assessed at intermediate intervals, in between the decadal assessments, at BLM’s discretion based on adequate funding and staffing. Between the decadal assessments, BLM will assume disturbed areas and units (same as used for calculations and mitigation) are not yet recovered until data is presented and BLM determines the area meets one of the two criteria below:</p> <ul style="list-style-type: none"> <li>Field verification that disturbed area(s) are dominated by the establishment of native shrubs, as appropriate for the site, and demonstrated function of ecological processes (e.g., water flow, soil stability).</li> <li>Ground disturbance can no longer be seen at the 1:10,000 scale using the best available aerial imagery.</li> </ul> <p>Areas within California Desert National Conservation Lands and/or ACEC(s) may be determined recovered by BLM at any time, once one of the two criteria above are met, prior to the entire unit (of calculation and mitigation) being determined recovered. Areas determined recovered by BLM would be removed from the subsequent ground disturbance calculation for that unit.</p>			
Lands & Realty	NLCS-LANDS-1	Renewable energy activities and related ancillary facilities are not allowed. New transmission and interconnect (i.e. generation tie lines) lines are allowed in designated corridors only. California Desert National Conservation Lands are a right-of-way avoidance areas for all other land use authorizations. Right-of-way avoidance areas are defined as areas to be avoided but may be available for location of right-of-ways with special stipulations.	No	Land use does not occur on project site.	The Project does not propose energy activities.
	NLCS-LANDS-2	Avoid use authorizations that negatively affect the values for which the California Desert National Conservation Lands are designated, unless mitigation, including compensatory mitigation, result in a net benefit to the California Desert National Conservation Lands.	No	Land use does not occur on project site.	With the PDFs from the Plan of Operations (SMP 2021) and the implementation of BLM-required mitigation measures, the Project would not negatively affect California Desert NCLs.
	NLCS-LANDS-3	Public access will be designed to facilitate or enhance the use, enjoyment, conservation, protection, and restoration of California Desert National Conservation Land values identified for the ecoregion.	No	Land use does not occur on project site.	The Project would temporarily restrict access to the Project Area for public use; however, the BLM-required mitigation for public notices (Appendix F) to be posted would inform the public of access restrictions, and restrictions would be lifted upon completion of the Project.
	NLCS-LANDS-4	All lands within California Desert National Conservation Lands are identified for retention. If the BLM determines that disposal through exchange would result in a net benefit to the values of the California Desert National Conservation Lands, it may consider that exchange through a land use plan amendment.	No	Land use does not occur on project site.	Disposal through exchange would not occur and a land use plan amendment would not be necessary as a result of the Project.
	NLCS-LANDS-5	Site authorizations that protect or enhance conservation values, such as those granted as compensatory mitigation or for habitat restoration, are allowed. Compensatory mitigation measures sited on California Desert National Conservation Lands are not be limited to mitigation for activities on BLM-managed public land.	No	Project not located on federal lands with this designation.	The Project would not be located at a site that is designated for habitat restoration or compensatory mitigation.
Minerals	NLCS-MIN-1	<p><b>High Potential Mineral Areas</b></p> <ul style="list-style-type: none"> <li>In California Desert National Conservation Lands and ACECs, determine if reasonable alternatives exist outside of the California Desert National Conservation Lands and ACECs prior to proposing mineral resource development within one of these areas.</li> <li>In California Desert National Conservation Lands, subject to valid existing rights, if mineral resource development is proposed on a parcel of public land administered by the BLM for conservation purposes and designated as part of the NLCS within the CDCA, pursuant to Omnibus Public Land Management Act Section 2002(b)(2)(D):</li> </ul>	No	Project not located on federal lands with this designation.	The Project is not located within a High Potential Mineral Area.

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		<ul style="list-style-type: none"> <li>o Identify, analyze, and consider the resources and values for which that parcel of public land is administered for conservation purposes.</li> <li>o Determine whether development of mineral resources is compatible with the BLM's administration of that parcel of public land for conservation purposes. If development is incompatible, the mineral resource would not be developed, subject to valid existing rights.</li> <li>o Approve any operation for which valid existing rights have been determined, subject to the applicable CMAs in the DRECP LUPA, including LUPA-MIN-1 through 6.</li> <li>• In California Desert National Conservation Lands, to protect the values for which a California Desert National Conservation Land unit was designated, and avoid, minimize, and compensate impacts to those values that results in net benefit for California Desert National Conservation Lands values, all Plans of Operation will meet the performance standards found at 43 CFR 3809.420, specifically 43 CFR 3809.420(a)(3)—Land-use plans, and 43 CFR 3809.420(b)(7)—Fisheries, wildlife and plant habitat, and will be subject to the regulations found at 43 CFR 3809.100 and 43 CFR 3809.101, if applicable.</li> </ul>			
	NLCS-MIN-2	For the purposes of locatable minerals, California Desert National Conservation Lands are treated as "controlled" or "limited" use areas in the CDCA, requiring a Plan of Operations for greater than casual use under 43 CFR 3809.11.	Yes		The Project is being considered based on the regulations set forth in 43 CFR 3809.11. A Plan of Operations (SMP 2021) has been submitted to the BLM for mineral exploration.
	NLCS-MIN-3	California Desert National Conservation Lands are available for mineral material sales and solid mineral leases, and would require mitigation, including compensatory mitigation, that results in net benefit for California Desert National Conservation Lands values consistent with applicable statutes and regulations.	No	Land use does not occur on project site.	The Project does not propose mineral material sales or new solid mineral leases.
	NLCS-MIN-4	California Desert National Conservation Lands are available for geothermal leasing only in the specified areas where a DRECP LUPA DFA overlaps with the California Desert National Conservation Lands and the geothermal lease contains a specific no surface occupancy stipulation.	No	Land use does not occur on project site.	The Project does not propose geothermal activities.
	NLCS-MIN-5	Geothermal and other leasing must protect groundwater quality and quantity.	No	Land use does not occur on project site.	The Project does not propose geothermal activities.
National Scenic & Historic Trails	NLCS-NSHT-1	<b>Management of National Scenic and Historic Trails</b> – Manage National Scenic and Historic Trails as units of the BLM's NLCS per PL 111-11, and components of the National Trails System under the National Trails System Act. Where National Scenic and Historic Trails overlap California Desert National Conservation Lands or other NLCS units (e.g., Wilderness Areas), the more protective CMAs or land use allocations apply.	No	Project not located on federal lands with this designation.	No National Scenic or Historic Trails are present within the Project Area or vicinity.
	NLCS-NSHT-2	<b>Management Corridor</b> – The National Trail Management Corridor, on BLM land, has a width generally 1 mile from the centerline of the trail, 2-mile total width. Where the National Trail Management Corridors overlap California Desert National Conservation Lands or other NLCS units, the more protective CMAs or land use allocations will apply.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity.
	NLCS-NSHT-3	<b>Site Authorization</b> – NSHT Management Corridors are right-of-way avoidance areas for land use authorizations. Sites authorizations will require mitigation, including compensatory mitigation resulting in net benefit to the NSHT. Authorizations that interfere with the Nature and Purpose for which the NSHT was established are not be allowed, as required by the National Trail Systems Act.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity.
	NLCS-NSHT-4	<b>Linear Rights-of-Way</b> – Generally, the NSHT Management Corridors are avoidance areas for linear rights-of-way, except in existing designated transmission/utility corridors, which are available for linear rights-of-way. Cultural landscapes, high potential historic sites, and high potential route segments within or along National Historic Trail Management Corridors are excluded from transmission activities, except in existing designated transmission/utility corridors. For all linear rights-of-way adversely impacting NSHT Management Corridors, the BLM will follow the protocol in BLM Manual 6280 to coordinate, as required, and complete an analysis showing that the development does not substantially interfere with the nature and purposes of the NSHT, and that mitigation results in a net benefit to the NSHT.	No	Land use does not occur on project site.	The Project does not propose any Rights-of-Way.

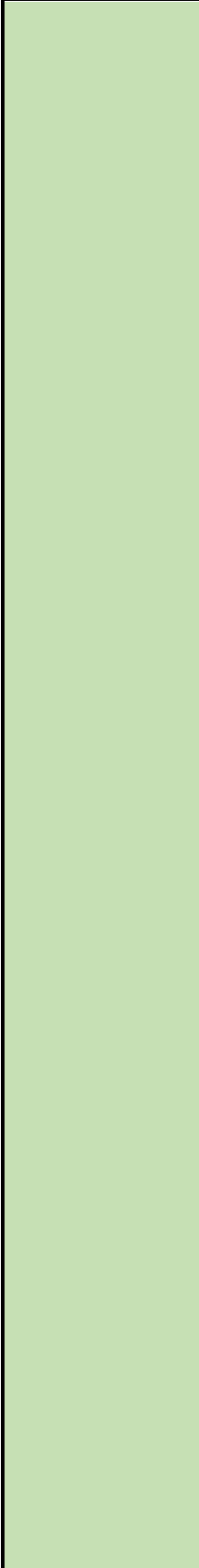
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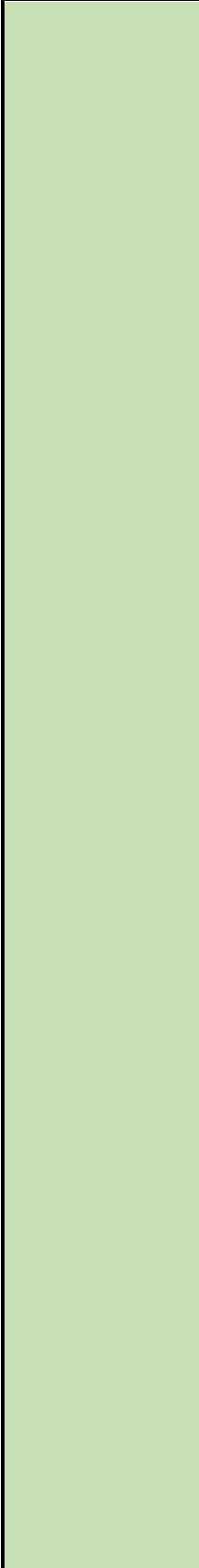
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	NLCS-NSHT-5	<b>Renewable Energy Rights-of-Way</b> – Renewable energy activities are not be allowed within NSHT Management Corridors, except in LUPA approved DFAs. Where development may adversely impact NSHT Management Corridors, the BLM will follow the protocol in BLM Manual 6280 as required and complete an analysis to ensure that it does not substantially interfere with the nature and purposes of the NSHT, avoids activities incompatible with NSHT nature and purposes, and that mitigation, including compensatory mitigation, results in a net benefit to the NSHT.	No	Land use does not occur on project site.	The Project does not entail geothermal activities.
	NLCS-NSHT-6	<b>Land Tenure</b> – All lands within NSHT Management Corridors are identified for retention. If the BLM determines that disposal through exchange would result in a net benefit to the values of the NSHT, it may consider that exchange through a land use plan amendment.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity.
	NLCS-NSHT-7	<b>Locatable Minerals</b> – For the purposes of locatable minerals, NSHT Management Corridors are treated as “controlled” or “limited” use areas in the CDCA, requiring a Plan of Operations for greater than casual use under 43 CFR 3809.11.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity.
	NLCS-NSHT-8	<b>Mineral Material Sales</b> – NSHT Management Corridors are available for mineral material sales if the sale does not conflict or cause adverse impact on resources, qualities, values, settings, or primary uses or substantially interfere with nature and purpose of NSHT, and avoids activities inconsistent with NSHT purposes. The sale must require mitigation/compensation and must result in net benefit to NSHT values.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity.
	NLCS-NSHT-9	<b>Solid Mineral Leases</b> – NSHT Management Corridors will be available for solid mineral leases if the lease does not conflict or cause adverse impact on resources, qualities, values, settings, or primary uses or substantially interfere with nature and purpose of NSHT, and avoids activities inconsistent with NSHT purposes. The lease must require mitigation/compensation and result in net benefit to NSHT values.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity.
	NLCS-NSHT-10	<b>Geothermal Leasable Minerals</b> – NSHT Management Corridors are available for geothermal leasing in LUPA approved DFAs only and with a no surface occupancy stipulation, as long as the action would not substantially interfere with the nature and purposes of the NSHT, and will follow the most recent national policy and guidance.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity and the Project does not propose geothermal activities.
	NLCS-NSHT-11	<b>Recreation and Visitor Services</b> – Commercial and competitive Special Recreation is a discretionary action and will be considered on a case-by-case basis for activities consistent with the NSHT nature and purposes.	No	Project not located on federal lands with this designation.	No National Scenic or Historic Trails are present within the Project Area or vicinity.
	NLCS-NSHT-12	<b>Cultural Resources</b> – Any adverse effects to historic properties resulting from allowable uses will be addressed through the Section 106 process of the National Historic Preservation Act and the implementing regulations at 36 CFR Part 800.	Yes		At this time, no National Scenic or Historic Trails have been identified within the Project Area of cultural resources area of analysis. Throughout archaeological monitoring of the Project per the mitigation measures included in Appendix F, should a National Scenic or Historic Trail be documented, the same mitigation measures for avoidance would be implemented. The Section 106 of the NHPA consultation process would be ongoing throughout the life of the Project.
	NLCS-NSHT-13	<b>Cultural Resources</b> – All high potential NHT segments will be assumed to contain remnants, artifacts and other properties eligible for the National Register of Historic Places, pending evaluation.	No	Project not located on federal lands with this designation.	No high potential National Historic Trail segments have been identified within the Project Area or vicinity.
	NLCS-NSHT-14	<b>Visual Resources Management</b> – All NSHT Management Corridors are designated as VRM Class I or II dependent on the CMA's or land use allocation, except within existing approved transmission/utility corridors (VRM Class III) and DFAs (VRM Class IV). However, state of the art VRM BMPs for renewable energy will be employed commensurate with the protection of nationally significant scenic resources and cultural landscapes to minimize the level of intrusion and protect trail settings.	No	Project not located on federal lands with this designation.	There is no National Scenic or Historic Trail Management Corridor within the Project Area or vicinity and the Project does not propose renewable energy activities.

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	NLCS-NSHT-15	<b>Mitigation Requirements</b> – If there is overlap between a National Scenic or Historic Trail, National Trail Management Corridor on BLM land, or trail under study for possible designation and a DFA, BLM Manual 6280 must be followed. Efforts will be made to avoid conflicting activities and approved activities will be subject to mitigation for adverse impacts to the resources, qualities, values, settings, and primary use or uses (RQVs), including, but not limited to, the following: avoidance, the cost of trail relocation, on-site mitigation and off-site mitigation. Compensation can include acquisition or restoration of corridor RQVs, features and landscapes will be at a minimum of 2:1, and must result in a net benefit to the overall trail corridor. Proposed development of high potential route segments must not substantially interfere with the nature and purposes of the National Scenic or Historic Trail.	No	Project not located on federal lands with this designation.	The Project is not located within a Development Focus Area and there are no National Scenic or Historic Trails or National Trail Management Corridors present within the Project Area and vicinity.
Recreation & Visitor Services	NLCS-REC-1	Commercial and competitive Special Recreation Permits are a discretionary action and will be issued on a case by case basis, for activities that do not diminish the values of the California Desert National Conservation Lands unit and will be prohibited if the proposed activities would adversely impact the nationally significant ecological, cultural or scientific values for which the area was designated.	No	Land use does not occur on project site.	The Project would not require a Special Recreation Permit.
	NLCS-SW-1	Apply for water rights on a case by case basis to protect water dependent California Desert National Conservation Land values.	No	Land use does not occur on project site.	The Project would not require water rights applications.

ACECs						
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Cultural Resources & Tribal Interests	ACEC-CUL-1	Survey, identify and record new cultural resources within ACEC boundaries prioritizing ACECs where the relevant and important criteria include cultural resources.	No		This CMA specifies actions the BLM will take regarding overall management of ACECs.	
	ACEC-CUL-2	Update records for existing cultural resources within ACECs, prioritizing ACECs where the relevant and important criteria include cultural resources.	No		This CMA specifies actions the BLM will take regarding overall management of ACECs.	
	ACEC-CUL-3	Develop baseline assessment of specific natural and man-made threats to cultural resources in ACECs (i.e., erosion, looting and vandalism, grazing, OHV), prioritizing ACECs where the relevant and important criteria include cultural resources.	No		This CMA specifies actions the BLM will take regarding overall management of ACECs.	
	ACEC-CUL-4	Provide on-going monitoring for cultural resources based on the threat assessment, prioritizing ACECs where the relevant and important criteria include cultural resources.	No		This CMA specifies actions the BLM will take regarding overall management of ACECs.	
	ACEC-CUL-5	Identify, develop or incorporate standard protection measures and best management practices to address threats.	No		This CMA specifies actions the BLM will take regarding overall management of ACECs.	
	ACEC-CUL-6	Where specific threats are identified, implement protection measures consistent with agency NHPA Section 106 responsibilities.	Yes		SMP has developed and implemented a tribal monitoring plan regarding the Project. Tribal consultation would be ongoing through the life of the Project and associated additional mitigation measures would be required by the BLM to ensure impacts to cultural resources are minimized. Required mitigation is provided in Chapter 5 of the EA as determined appropriate by the BLM and in accordance with the relevant regulations.	
Ground Disturbance Cap	ACEC-DIST-1	Development in ACECs is limited by specified ground disturbance caps which are the total ground disturbance (existing [past and present] plus future). The specific ACEC ground disturbance caps are delineated in each of the individual ACEC Special Unit Management Plans (Appendix B). The ground disturbance caps will be used, managed and implemented following the methodology for California Desert National Conservation Lands and ACECs identified in Section II.2 and repeated in CMAs <b>NLCS-DIST-2</b> , and <b>ACEC-DIST-2</b> .	No	Land use does not occur on project site.	Ground disturbance caps do not apply to mining or mineral exploration projects.	
	ACEC-DIST-2	Specifically, the ground disturbance caps would be implemented as a limitation and objective using the following process: <ul style="list-style-type: none"> <li>• Limitation: If the ground disturbance condition of the ACEC is below the designated ground disturbance cap (see calculation method), the ground disturbance cap is a limitation on ground-disturbing activities within the California Desert National Conservation Lands and/or ACEC, and precludes approval of future discretionary ground disturbing activities (see exceptions below) above the cap.</li> <li>• Objective, triggering disturbance mitigation: If the ground disturbance condition of the ACEC is at or above its designated cap, the cap functions as an objective, triggering the specific ground disturbance mitigation requirement. Ground disturbance mitigation is unique to ground disturbance cap implementation and a discrete form of compensatory mitigation, separate from other required mitigation in the DRECP LUPA (see Glossary of Terms). The ground disturbance mitigation requirement remains in effect for all (see exceptions below) activities until which time the ACEC drops below the cap, at which time the cap becomes a limitation and the ground disturbance mitigation is no longer a requirement. If ground disturbance mitigation opportunities do not exist in a unit (see below for "unit" of measurement), ground disturbing activities (see exceptions below) will not be allowed in that unit until which time opportunities for ground disturbance mitigation in the unit become available (see types and forms of ground disturbance mitigation below) or the unit recovers and drops below the cap.</li> <li>• Actions necessary to control the immediate impacts of an emergency that are urgently needed to reduce the risk to life, property, or important natural, cultural, or historic resources, in accordance with 43 Code of Federal Regulations (CFR) 46.150, are an exception to the ground disturbance cap limitation, objective and ground disturbance mitigation requirements. Ground disturbance from emergency actions will count in the ground disturbance calculation for other activities, and also be available for ground disturbance mitigation opportunities and restoration, as appropriate.</li> </ul>	No	Land use does not occur on project site.	Ground disturbance caps do not apply to mining or mineral exploration projects.	

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		<p><b>Calculating ground disturbance:</b> Ground disturbance will be calculated on BLM managed land at the time of an individual proposal, by BLM for a BLM initiated action or by a third party for an activity needing BLM approval or authorization, for analysis in the activity-specific National Environmental Policy Act (NEPA) document. Once BLM approves/accepts or conducts a calculation for a ACEC, that calculation is considered the baseline of past and present disturbance and is valid for 12 months, and can be used by other proposed activities in the same unit. Ground disturbances, that meet the criteria below, would be added into the calculation for the 12 month period without having to revisit the entire calculation After a 12 month period has passed and a proposed action triggers the disturbance calculation, BLM will examine the existing ground disturbance calculation to determine: 1) if the calculation is still reliable, in which case add in any additional disturbance that has occurred since that calculation; or 2) if the disturbance must be recalculated in its entirety. Once completed for a specific activity, the ground disturbance calculation may be used throughout the activity's environmental analysis. However, the BLM may recalculate the affected unit(s) or portions of the unit(s) if it determines such recalculation is necessary for the BLM's environmental analysis.</p> <p><b>Unit of measurement:</b> When calculating the ground disturbance, it is necessary to identify the appropriate unit level at which the disturbance will be calculated. For ground disturbing activities that occur within an ACEC, the disturbance calculation will be based on the ACEC unit boundary, or the boundary of the disturbance cap area(s), whichever area is smaller. If there is overlap between California Desert National Conservation Lands and an ACEC, the calculation will take place based on the smallest unit. If an activity/project overlaps two or more smaller units, the cap will be calculated, individually, for all affected units.</p> <p><b>Ground disturbance includes:</b> The calculation shall include existing ground disturbance in addition to the estimated ground disturbance from the proposed activity (future) determined at the time of the individual proposal:</p> <ul style="list-style-type: none"> <li>• Authorized/approved ground disturbing activities – built and not yet built</li> <li>• BLM identified routes – all routes, trails, etc., authorized and unauthorized, identified in the Ground Transportation Linear Feature (GTLF) and/or other BLM route network database (i.e., BLM local databases that contain the best available data on routes and trails, replacement for GTLF, etc.), following applicable BLM standards and policy for identification of routes (authorized and unauthorized)</li> <li>• Assumptions may be used to identify the percentage/degree/area/etc. of ground disturbance for a specific authorized/approved activity or activity-type based on: <ul style="list-style-type: none"> <li>○ Activity-specific environmental analysis, such as NEPA or ESA Section 7 Biological Assessment</li> <li>○ Known and documented patterns of ground disturbance</li> <li>○ Other documented site-specific factors that limit or play a role in ground disturbance, such as topography, geography, hydrology (e.g. desert washes obliterating authorized routes on a regular basis), historical and predicted patterns of use</li> </ul> </li> <li>• Any unauthorized disturbance that can be seen at a 1:10,000 scale using the best available aerial imagery</li> <li>• Ground disturbance from wildfire, animals, or other disturbances that can be seen at a 1:10,000 scale using the best available aerial imagery</li> <li>• Historic Route 66 maintenance - potential ground disturbance estimates: <ul style="list-style-type: none"> <li>– As part of the ground disturbance calculation, the potential disturbance associated with estimated operations related to the maintenance of Historic Route 66 will automatically be included in the ground disturbance calculation as existing ground disturbance for the units specified below, until which time these estimated acres are no longer necessary due to approved operations: <ul style="list-style-type: none"> <li>▪ South Amboy-Mojave California Desert National Conservation Lands 221 acres</li> <li>▪ Bristol Mountains ACEC 92 acres</li> <li>▪ Chemehuevi ACEC 43 acres</li> <li>▪ Pisgah ACEC 86 acres</li> </ul> </li> <li>○ The estimated ground disturbance acreage includes disturbance associated with potential access to the locations if no current access exists.</li> <li>○ The estimated ground disturbance acres for maintenance of Historic Route 66 in the before mentioned conservation units is not approval of these activities by BLM. Activities associated with the management and maintenance of Historic Route 66 on BLM administered land will follow all applicable laws, regulations and policies.</li> </ul> </li> </ul> <p><b>Exceptions to the disturbance calculation:</b></p> <ul style="list-style-type: none"> <li>• Actions necessary to control the immediate impacts of an emergency that are urgently needed to reduce the risk to life, property, or important natural, cultural, or historic resources, in accordance with 43 CFR 46.150, will not be required to conduct a disturbance calculation. If the actions are ground disturbing, that disturbance will count towards the disturbance cap when next calculated for non-emergency activities.</li> <li>• Actions that are authorized under a Department of Interior (DOI) or BLM NEPA Categorical Exclusion will not be required to conduct a disturbance calculation; however, these actions are not exempt from the disturbance mitigation requirement if a unit is at or above its cap. Although the BLM is not required to calculate the disturbance cap before approving an activity under a Categorical Exclusion, if the BLM knows an area is at or exceeding the cap, the disturbance mitigation requirements would apply to that activity.</li> </ul>			

ACECs	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments
		<ul style="list-style-type: none"> <li>• BLM authorized/approved research or restoration activities that are designed or intended to promote and enhance the relevant and important values for which the ACEC was designated.</li> <li>• Actions that are entirely within the footprint of an existing authorized/approved site of ground disturbance that is within the calculation above.</li> <li>• Livestock grazing permit renewals (however, water developments or other range improvements requiring an Environmental Assessment or Environmental Impact Statement would be subject to the disturbance calculation and any mitigation requirements).</li> </ul> <p><b>Ground disturbance mitigation:</b> The purpose of ground disturbance mitigation (disturbance mitigation) is to allow actions to occur in California Desert National Conservation Lands and/or ACEC that is at or above its designated disturbance cap(s), while at the same time providing a restoration mechanism that will, over time, improve the condition of the unit(s) and take them below their cap. Disturbance mitigation is compensatory. Disturbance mitigation is unique to ground disturbance cap implementation and a discrete form of compensatory mitigation, separate from other required mitigation in the DRECP (see Glossary of Terms).</p> <p>Disturbance mitigation may only be used for ground disturbance that is otherwise allowed by the LUPA and consistent with the purposes for which the California Desert National Conservation Lands and/or ACEC was designated. Areas used for disturbance mitigation are still considered disturbed until which time they meet the "Ground Disturbance Recovery" criteria in the description below.</p> <p><b>Unit for implementing disturbance mitigation:</b> The appropriate unit level for implementing disturbance mitigation is the same as that used for calculating ground disturbance. For ground disturbing activities that occur within an ACEC, the disturbance mitigation will be required within the ACEC unit boundary, or the boundary of the disturbance cap area(s), whichever area is smaller. If there is overlap between California Desert National Conservation Lands and an ACEC, the disturbance mitigation will take place in the smallest unit. If an activity/project overlaps two or more smaller units, disturbance mitigation will be required for all units that are at or over their specified disturbance cap.</p> <p><b>No disturbance mitigation required:</b> If the calculated ground disturbance for the unit(s) is under the cap:</p> <ul style="list-style-type: none"> <li>• No disturbance mitigation required; use activity design features to minimize new ground disturbance and help stay below cap.</li> </ul> <p><b>Disturbance mitigation required:</b> If the calculated ground disturbance is at or above the unit(s) cap, disturbance mitigation is required:</p> <ul style="list-style-type: none"> <li>• Use activity design features to minimize new ground disturbance to the extent practicable.</li> <li>• For the portion of the proposed activity that is located on land within an area previously disturbed by an authorized/approved action that has been terminated the required disturbance mitigation ratio is 1.5 (1½):1.</li> <li>• For the portion of the proposed activity that is located on undisturbed land or land disturbed by unauthorized activities, the required disturbance mitigation ratio is 3:1.</li> <li>• Although the BLM is not required to calculate the ground disturbance cap before approving/authorizing an activity under a Categorical Exclusion, if the BLM knows an area is at or exceeding the cap, the disturbance mitigation requirements would apply to that activity.</li> <li>• In the rare circumstance where the BLM authorizes activities on areas restored (e.g., as disturbance or other forms of mitigation), the required disturbance mitigation ratio requirement is doubled, that is, 3:1 or 6:1, respectively.</li> </ul> <ul style="list-style-type: none"> <li>• If disturbance mitigation opportunities do not exist in a unit, ground-disturbing activities (see exceptions below) will not be allowed in that unit until which time opportunities for disturbance mitigation in the unit become available (see types and forms of disturbance mitigation below) or the unit recovers and drops below the cap.</li> </ul> <p><b>Exceptions to the disturbance mitigation requirement:</b></p> <ul style="list-style-type: none"> <li>• Any portion of the proposed activity that is located on land previously disturbed by an existing, valid authorized/approved action.</li> <li>• Livestock grazing permit renewals (however, water developments or other range improvements requiring an Environmental Assessment or Environmental would be subject to the disturbance calculation and any mitigation requirements).</li> </ul> <ul style="list-style-type: none"> <li>• Land use authorization assignments and renewals with no change in use.</li> <li>• BLM authorized/approved activities that are designed and implemented to reduce existing ground disturbance, such as ecological, cultural, or habitat restoration or enhancement activities.</li> <li>• Non-discretionary actions, where BLM has no authority to require compensatory mitigation.</li> </ul> <p><b>Types and forms of disturbance mitigation:</b></p> <ul style="list-style-type: none"> <li>• Restoration of previously disturbed BLM lands within the boundary of the specific ACEC unit(s) being impacted.</li> </ul> <ul style="list-style-type: none"> <li>• Acquisition of undisturbed lands within the boundary of the specific ACEC unit being impacted.</li> <li>• Ground disturbance mitigation can be "nested" (i.e., combined) with other resource mitigation requirements, when appropriate. For example, a parcel restored for desert tortoise habitat mitigation may also satisfy the disturbance mitigation requirement if the parcel is within the appropriate unit of California Desert National Conservation Lands, ACEC boundary, or smaller disturbance cap unit.</li> </ul>			



ACECs						
Category	CMA #	CMA Text	Applicability	Explanation: Why CMA is not applicable	Comments	
		<p><b>Ground Disturbance Recovery</b></p> <p>In general, California Desert National Conservation Lands and/or ACEC ground disturbance recovery would be determined during the decadal ground disturbance threshold ecoregion trend monitoring assessments (see below, and Monitoring and Adaptive Management). California Desert National Conservation Lands and/or ACEC recovery may be assessed at intermediate intervals, in between the decadal assessments, at BLM's discretion based on adequate funding and staffing. Between the decadal assessments, BLM will assume disturbed areas and units (same as used for calculations and mitigation) are not yet recovered until data is presented and BLM determines the area meets one of the two criteria below:</p> <ul style="list-style-type: none"> <li>• Field verification that disturbed area(s) are dominated by the establishment of native shrubs, as appropriate for the site, and demonstrated function of ecological processes (e.g., water flow, soil stability).</li> <li>• Ground disturbance can no longer be seen at the 1:10,000 scale using the best available aerial imagery.</li> </ul> <p>Areas within California Desert National Conservation Lands and/or ACEC(s) may be determined recovered by BLM at any time, once one of the two criteria above are met, prior to the entire unit (of calculation and mitigation) being determined recovered. Areas determined recovered by BLM would be removed from the subsequent ground disturbance calculation for that unit.</p>				
Lands & Realty	ACEC-LANDS-1	Renewable energy activities are not allowed. ACECs are right-of-way avoidance areas for all other land use authorizations, except when identified as right-of-way exclusion areas in the individual unit's Special Management Plan (Appendix B). Transmission is allowed. Re-powering of an existing wind facility is allowed if the re-power project remains within the existing approved wind energy ROW and reduces environmental impacts.	No	Land use does not occur on project site.	The Project does not propose renewable energy activities or new land use authorizations.	
	ACEC-LANDS-2	All lands within Areas of Critical Environmental Concern are identified for retention. If the BLM determines that disposal through exchange would result in a net benefit to the values of the ACEC, it may consider that exchange through a land use plan amendment.	No	Land use does not occur on project site.	CMA not relevant to the Project; a land use plan amendment is not necessary.	
Minerals	ACEC-MIN-1	<p><b>High Potential Mineral Areas</b></p> <ul style="list-style-type: none"> <li>• In California Desert National Conservation Lands and ACECs, determine if reasonable alternatives exist outside of the California Desert National Conservation Lands/ACEC areas prior to proposing mineral resource development within one of these areas.</li> </ul>	No	Project is not located in or near the area specified in the CMA.	Project is not located within a High Potential Mineral Area.	
	ACEC-VRM-1	Manage Manzanar ACEC to conform to VRM Class II standards.	No	Project is not located in or near the area specified in the CMA.	Project is not located within the Manzanar ACEC.	

## GLOSSARY OF TERMS

### A

**acquired lands.** Lands in federal ownership that are not *public domain*<sup>1</sup> and that have been obtained by the government by purchase, exchange, donation, or condemnation. Acquired lands are normally dedicated to a specific use or uses.

**acquisition.** The activity of obtaining land and/or interest in land through purchase, exchange, donation, or condemnation.

**activity.** Authorized projects and management activities conducted on BLM-administered lands. Activities include actions approved by permit or other authorization as well as actions conducted by the BLM.

**activity footprint.** The area of long- and short-term ground disturbance associated with the pre-construction, construction, operation, implementation, maintenance, and decommissioning of an activity, including associated linear and non-linear components, such as staging areas, access routes and roads, gen-ties, pipelines, other utility lines, borrow pits, disposal areas, etc. May also be considered synonymous with project/activity site.

**adaptive management.** A process for assimilating new information, including, but not limited to, from monitoring and research, and assessing if adjustments to the DRECP BLM Land Use Plan Amendment (LUPA) Conservation and Management Actions (CMAs), etc., are needed. The Monitoring and Adaptive Management Program (MAMP) is the vehicle for structuring adaptive management in the LUPA and implementing actions deemed necessary, as needed.

**Applicant.** A public or private entity, or an individual, that applies to the BLM for a land use authorization or approval of activity.

**Area of Critical Environmental Concern (ACEC).** A BLM area within public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems of processes, or to protect life and safety from natural hazards. The ACECs are part of the LUPA conservation land allocations. Defined in Section 103(a) of the Federal

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<sup>1</sup> **Public domain.** Vacant, unappropriated, and unreserved public lands, or public lands withdrawn by Executive Order 6910 of November 26, 1934, as amended, or Executive Order 6964 of February 5, 1935, as amended, and not otherwise withdrawn or reserved, or public lands within grazing districts established under Section 1 of the Act of June 28, 1934 (45 Stat. 1269), as amended, and not otherwise withdrawn or reserved.

Land Policy and Management Act (FLPMA) of 1976, as amended, and regulation 43 Code of Federal Regulations (CFR) 1601.0-5(a).

**avoidance to the maximum extent practicable (as utilized in the LUPA CMAs).** A standard identified in the LUPA CMAs and applied to implementation of activities. Under this standard, impacts to identified resources are not allowed unless there is no reasonable or practicable means of avoidance that is consistent with the basic objectives of the activity. Compensation for unavoidable impacts will be required, as specified in the CMAs. The term “maximum extent practicable” as used here in the DRECP LUPA is applicable only to its use in the CMAs; it does not apply to the term as it is used in the Endangered Species Act of 1973, as amended.

## **B**

**baseline monitoring.** A type of monitoring in which a designated resource specialist that assembles an initial set of information or quantitative data, through an accepted protocol, for comparison or a control by which a determination can be made in the future as to whether change has occurred through events, actions, or time. Baseline monitoring may be appropriate in areas that have not been sufficiently surveyed or for which relevant data is otherwise lacking.

**biological monitoring.** Visual survey of an area conducted by a designated biologist to determine if a biological resource is present. Biological monitoring is commonly conducted on the sites of proposed projects. Biological monitoring conducted during the implementation of activities is used to implement LUPA CMAs that require construction setbacks or that require the designated biologist to move a biological resource out of harm’s way.

**BLM land (also known as BLM-managed lands, BLM-administered land, or public land).** Land or interest in land owned by the United States and administered by the U.S. Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership.

**BLM LUPA conservation designations (also known as BLM conservation lands, BLM conservation areas, or conservation allocations).** Administrative designations that include California Desert National Conservation Land, ACEC, and Wildlife Allocation designations on BLM-administered land. BLM Wilderness Areas, Wilderness Study Areas, National Monuments, National Historic Trails, and Wild and Scenic River designations (existing and proposed) are included as part of the existing Legislatively and Legally Protected Areas (LLPAs). The BLM LUPA conservation designations were identified through the planning process.

**BLM Special-Status Species (also known as Special-Status Species).** Includes those plant and animal species that are (1) species listed as threatened or endangered, or proposed for listing under the Endangered Species Act of 1973, and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the Endangered Species Act, which are designated as sensitive by the BLM California State Director. All federal Endangered Species Act candidate species, and delisted species in the 5 years following delisting, are considered and will be conserved as species sensitive. The BLM California State Director has also conferred sensitive status on California State endangered, threatened, and candidate species, and rare plant species, on species with a California Rare Plant Rank of 1B on the Special Vascular Plants, Bryophytes, and Lichens List maintained by the California Department of Fish and Wildlife that are on BLM lands or affected by BLM actions and that are not already special-status plants by virtue of being federally listed or proposed (unless specifically excluded by the BLM California State Director on a case-by-case basis), and on certain other plants the BLM California State Director believes meet the definition of sensitive. See BLM Manual 6840, Special Status Species Policy, for more detail.

**breeding habitat.** Vegetation types or landscapes that contain elements required for the reproduction of wildlife Focus or BLM Special Status Species; for example, tree or canopy structure, vegetation composition, soil type, or hydrologic requirements.

## C

**California Department of Fish and Wildlife (CDFW) fully protected species.** Any species identified in California Fish and Game Code Sections 3511, 4700, 4800, 5050 or 5515. Such species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except under an approved Natural Community Conservation Plan (NCCP) or for collection for necessary scientific research.

**California Desert Biological Conservation Framework Land Cover Map.** A detailed map of vegetation types and other land covers for the DRECP Plan Area. The land cover map is a composite of fine-scale and medium-scale mapping organized hierarchically according to the National Vegetation Classification Standard, including general community groupings, vegetation types, and alliance-level mapping units.

**California Desert Conservation Area (CDCA).** As defined in Section 601 of the FLPMA, the CDCA is a 25-million-acre expanse of land in Southern California designated by Congress in 1976 through the FLPMA. About 10 million acres of the CDCA are administered by BLM under its CDCA Plan.

**California Desert National Conservation Lands (CDNCL or NCL).** The Approved LUPA identifies California Desert National Conservation Lands, in accordance with the Omnibus

Public Land Management Act of 2009 (Omnibus Act), which are nationally significant landscapes within the CDCA with outstanding cultural, ecological, and scientific values. The LUPA also establishes CMAs to conserve, protect, and restore these landscapes. The California Desert National Conservation Lands are a permanent addition to the National Landscape Conservation System, as per the direction to BLM in the Omnibus Act.

**clearance survey.** Survey for Focus and BLM Special Status Species conducted immediately prior to vegetation and/or ground disturbance from activities, as per the CMAs. Clearance surveys must be conducted throughout the LUPA Decision Area and in accordance with applicable species-specific CMAs and protocols, as approved by BLM and U.S. Fish and Wildlife Service (USFWS) and CDFW, if applicable, to detect and clear (i.e., remove, translocate) out of harm's way individuals of a species prior to disturbance.

**compensation and compensatory mitigation.** For the purposes of the DRECP LUPA, compensation and compensatory mitigation mean replacing or providing substitute resources or habitats by enhancing or restoring lands within appropriate BLM conservation and/or recreation designations, or acquiring and conserving lands from willing sellers.

**conservation easement.** A partial interest in land that can be transferred to a qualified land conservancy or government entity. The purpose is to conserve or protect the land. Conservation easements typically restrict allowable uses of the land by prohibiting development and sometimes restricting or requiring particular management activities. A conservation easement is legally binding for a specified term, which may be in perpetuity.

**Conservation and Management Actions (CMAs).** The specific set of avoidance, minimization, and compensation measures, and allowable and non-allowable actions for siting, design, pre-construction, construction, maintenance, implementation, operation, and decommissioning activities on BLM land. CMAs are required for 14 different resources and 7 land allocations.

**conserve.** The term "conserve" (or "conservation") as used in the DRECP LUPA applies to the protection and management of the multitude of resources and values BLM is managing with land allocations and CMAs in the DRECP LUPA, including but not limited to biological/ecological, cultural, recreation, and visual resources, including the conservation and recreation land allocations and their management, specific CMAs, and compensation actions such as restoration, enhancement, and land acquisition (e.g., fee title purchase from willing sellers). In the DRECP biological conservation strategy, this term is applied more narrowly to the protection and management of ecological processes, Focus and BLM Special Status Species, and vegetation types.

**creosote bush rings.** Rings of creosote bush (*Larrea tridentata*) that form over long periods of time. As a single creosote bush produces new branches at the periphery of its

crown, the branches in the center of the crown begin to die. Eventually a sterile area of bare ground occupies the center of the original shrub, and as the ring becomes larger the original shrub segments into several shrubs (satellites), forming a ring around the point where the original shrub originated. As more time goes by these rings become elliptical rather than circular. The satellite shrubs in a ring are the same genetically, attesting to the fact that they form a single clone originating from one original shrub. Vasek (1980) showed that some of these clones are several thousand years old. The largest known creosote ring is 20.5 feet in diameter and may be 11,700 years old.

**Critical Habitat.** Critical habitat is defined in Section 3(5)(A) of the Endangered Species Act of 1973 as (1) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species, and which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Designated critical habitat is protected under Section 7(a)(2) of the Endangered Species Act, which requires federal agencies to ensure that any action they fund, authorize, or carry out is not likely to result in the destruction or adverse modification of critical habitat.

## D

**Desert Renewable Energy Conservation Plan (DRECP).** An interagency planning effort of the REAT agencies addressing a biological conservation framework and renewable energy strategy for the California desert. The DRECP consists of the DRECP BLM LUPA (Phase I), and a Phase II addressing nonfederal lands.

**designated biologist.** A biologist who is approved as qualified by BLM, and USFWS and CDFW, as appropriate. A designated biologist is the person responsible for overseeing compliance with specific applicable LUPA biological CMAs.

**Development Focus Areas (DFAs).** Locations where renewable energy generation is an allowable use, incentivized, and could be streamlined for approval under the DRECP LUPA. The LUPA will only streamline and provide incentives for renewable energy activities sited in a DFA.

**disposal.** Conveyance of federal interest in public land to a nonfederal party through such actions as sale or exchange under various public land law authorities.

**distributed generation.** The 2011 Integrated Energy Policy Report published by the California Energy Commission (CEC) defines distributed generation as: "(1) fuels and

technologies accepted as renewable for purposes of the Renewable Portfolio Standard supplying power directly to a consumer” (CEC 2012).

**DRECP Plan Area (as known as the interagency DRECP Plan Area or DRECP boundary).** The Mojave and Colorado/Sonoran desert ecosystems in Southern California, with some map-based extractions primarily for the Coachella Valley Multiple Species Habitat Conservation Plan in Riverside County and the Tejon Ranch Tehachapi Uplands Multiple Species Habitat Conservation Plan in Kern County. This area does not include the lands in the LUPA Decision Area (see definition) in the CDCA but outside the DRECP boundary.

## E

**ecoregion subarea (also known as ecoregions or subareas).** Planning and LUPA implementation units based on a consolidation of U.S. Department of Agriculture (USDA) ecoregion boundaries and U.S. Geological Survey Hydrologic Units. The DRECP LUPA contains 10 ecoregion subareas.

**existing conservation areas.** Areas where natural resources are substantially protected under existing federal or state law or other legal protections. Existing conservation areas are referred to on the maps and figures as Legislatively and Legally Protected Areas (LLPAs). These lands are assumed to be protected and managed for the benefit of Focus and BLM Special Status Species under existing management regimes.

**existing transmission/utility corridors.** Linear corridors on public lands designated through the West Wide Energy Corridor Programmatic Environmental Impact Statement, the CDCA Plan, or other Resource Management Plan as a preferred location for pipelines, transmission lines, and other linear infrastructure. Corridors are meant to minimize adverse impacts of these facilities and minimize the proliferation of rights-of-way across public lands.

**Extensive Recreation Management Areas (ERMAs).** BLM administrative units that require specific management consideration in order to address recreation use and demand. The ERMAs are managed to support and sustain the principal recreation activities and associated qualities and conditions. Recreation management actions within an ERMA are limited to only those of a custodial nature. Management of ERMA areas are commensurate with the management of other resources and resource uses.

## F

**federal lands.** Land or interest in land owned and/or administered by the United States. Activities on federal lands in the LUPA Decision Area are administered by the Secretary of

the Interior through the BLM. Other federal lands administered by the Bureau of Reclamation, or BLM lands withdrawn by other agencies are not included in the definition of federal lands as used in the DRECP LUPA context.

**Focus Species.** Species whose conservation and management are provided for in the DRECP BLM LUPA.

**foraging habitat.** Vegetation types or landscapes that contain elements required for Focus and BLM Special Status wildlife species foraging; for example, particular vegetation consumed by Focus or BLM Special-Status wildlife species or habitat for species that are a primary source of Focus or BLM Special Status Species' diets.

## G

**General Public Lands (GPL).** BLM-administered lands that do not have a specific land allocation or designation. These areas are available to renewable energy applications, but do not benefit from permit review streamlining or other incentives. Activities in these areas are required to follow the LUPA-wide CMAs, and the GPL specific CMAs. A land use plan amendment is needed to develop renewable energy and related activities in these areas.

**geothermal project.** Activities that involve the construction, operation, and maintenance of a facility that generates energy through steam from wells in geothermally active areas. Geothermal projects may include well sites, pipelines, towers, roads, pump or maintenance buildings, generators, transformers, and other supporting infrastructure. Geothermal activities on BLM land are authorized through the geothermal leasing program.

**gigawatt (GW).** Measure of energy equal to one billion watts. Used as a measure of instantaneous generation capacity.

**gigawatt-hour (GWh).** Measure of power equivalent to  $10^9$  watt hours. Used as a measure of energy production from generation facilities.

**ground disturbance cap.** Generally, a limitation on ground-disturbing activities in California Desert National Conservation Lands and ACECs. Expressed as a percentage of total BLM-managed California Desert National Conservation Lands and/or ACEC acreage, and cumulatively considers past, present, and future (proposed activity) ground disturbance. Baseline/existing (past plus present) ground disturbance would be determined using the most current imagery and knowledge at the time of an individual activity proposal. Specifically, the ground disturbance caps will be implemented as either a limitation or an objective triggering disturbance mitigation. The ground disturbance cap is a limitation on ground-disturbing activities within the California Desert National Conservation Lands and/or ACEC, and precludes approval of future ground-disturbing



activities if the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is below the designated ground disturbance cap. The ground disturbance cap functions as an objective, triggering a specific disturbance mitigation requirement if the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is at or above its designated cap. The disturbance mitigation requirement remains in effect until the unit drops below its specified cap, at which time the disturbance cap becomes a limitation. Refer to LUPA Section II.2.1, for the full implementation methodology. The methodology is repeated in Section II.2.2, and in CMAs NLCS-DIST-2 and ACEC-DIST-2.

**ground disturbance mitigation (also known as disturbance mitigation).** A discrete form of compensatory mitigation, unique to the ground disturbance cap implementation, and separate and distinct from other required mitigation in the DRECP LUPA. The disturbance mitigation requirement is triggered when the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is at or above its designated cap. The disturbance mitigation requirement remains in effect until the California Desert National Conservation Lands and/or ACEC drops below its designated cap. Refer to LUPA Section II.2.1 for the full ground disturbance cap implementation methodology. The methodology is repeated in Section II.2.2, and in CMAs NLCS-DIST-2 and ACEC-DIST-2.

**ground-mounted distributed generation project.** For purposes of DRECP LUPA, a solar power system of 20 megawatts (MW) or less consisting of solar modules held in place by racks or frames that are attached to ground-based mounting supports.

## H

**habitat assessment.** As required in the LUPA-BIO CMAs. The DRECP land cover mapping and/or species model(s), updated mapping and species models, reconnaissance-level site visits, available aerial photography/imagery, and mapping of vegetation types and species' suitable habitat are all examples of the type of information that would be utilized during a habitat assessment. For all activities, a habitat assessment is required to assess site-specific vegetation types and Focus and BLM Special Status Species.

**herd area.** The areas on BLM land in which wild horses and burros were found when the Wild Free-Roaming Horses and Burros Act of 1971 was passed. These are the only areas BLM may manage horses by law.

**Herd Management Area.** A BLM land allocation. The areas within each herd area that BLM manages to sustain healthy and diverse wild horse and burro populations over the long term.

**I**

**impervious and urban built-up land.** Existing developed areas based on the DRECP land cover map.

**J**

**Joshua tree woodlands.** Evenly distributed with Joshua trees at  $\geq 1\%$  and *Juniperus* and/or *Pinus* spp.  $< 1\%$  absolute cover in the tree canopy (Thomas et al. 2004).

**K**

**kilowatt (kW).** Measure of energy equal to 1,000 watts.

**L**

**land tenure actions.** Jurisdictional or ownership changes in public lands. Tenure is derived from the Latin word “tenet” meaning “to hold.” Thus, land tenure describes the way in which land is held. These adjustments are accomplished through such actions as disposal, acquisition, or withdrawal.

**land use authorization.** As used in this LUPA, a term to describe any authorization or instrument to occupy, develop, or use BLM land issued under various realty program authorities available to the BLM, including right-of-way grants, leases, permits, licenses, and easements. The term does not include renewable energy projects and their related ancillary facilities.

**Land Use Plan Amendment (LUPA).** The LUPA is a set of decisions that establishes management direction for BLM-administered land within an administrative area through amendment to existing land use plans. The DRECP BLM LUPA amends the following BLM land use and resource management plans (RMPs): CDCA Plan and its amendments: Western Mojave Plan (WEMO), Northern and Eastern Colorado Desert Coordinated Management Plan (NECO), and Northern and Eastern Mojave Plan (NEMO). The DRECP LUPA also amends portions of the Bishop RMP and the Bakersfield RMP. Described in Section 202 of the FLPMA of 1976, as amended, and in regulation 43 CFR 1600.

**Legislatively and Legally Protected Areas (LLPAs).** Existing protected lands, including: Wilderness Areas, National Monuments, National Parks, National Preserves, National Wildlife Refuges, California State Parks and Recreation Lands, CDFW Conservation Areas (Ecological Reserves and Wildlife Areas), CDFW areas, privately held conservation areas including mitigation/conservation banks approved by the USFWS and CDFW, land trust lands, Wilderness Study Areas, Wild and Scenic Rivers, and National Scenic and Historic Trails.

**limited area.** Under BLM's Trails and Travel Management program, an area restricted at certain times, in certain areas, or to certain vehicular use.

**long-term impacts.** Ground and/or vegetation disturbance that results in impacts lasting greater than 2 years.

**LUPA Decision Area.** The lands within the LUPA area for which the BLM has the authority to make land use and management decisions. This includes all BLM-administered lands within the interagency DRECP Plan Area, as well as BLM-administered lands within the CDCA outside of the interagency DRECP Plan Area. It excludes some LLPAs and all lands within 1 mile of the Colorado River, which are administered by the BLM-Arizona State Office.

**LUPA Planning Area.** All BLM-managed lands in the LUPA Decision Area, as well as all BLM managed LLPAs.

## M

**maximum extent practicable or feasible (as utilized in the LUPA CMAs).** A standard identified in the LUPA CMAs and applied to implementation of activities. Under this standard, implementation of the CMA is required unless there is no reasonable or practicable means of doing so that is consistent with the basic objectives of the activity. The term "maximum extent practicable" as used here in the DRECP LUPA is applicable only to its use in the CMAs; it does not apply to the term as it is used in the Endangered Species Act of 1973.

**megawatt (MW).** Measure of energy equal to one million watts. Used as a measure of instantaneous generation capacity from a generation facility.

**microphyll woodlands.** Consist of drought-deciduous, small-leaved (microphyllus), mostly leguminous trees. Occurs in bajadas and washes where water availability is somewhat higher than the plains occupied by creosote bush and has been called the "riparian phase" of desert scrub (Webster and Bahre 2001). Composed of the following alliances: desert willow, mesquite, smoke tree, and the blue palo verde-ironwood.

**Military Expansion Mitigation Lands (MEMLs).** Lands conserved as mitigation for the expansion of Department of Defense installations and considered part of existing conservation areas under the DRECP BLM LUPA.

**military lands.** Department of Defense installations within the DRECP Plan Area.

**minor incursion.** Small-scale allowable impacts to sensitive resources, as per specific CMAs, that do not individually or cumulatively compromise the conservation objectives of

that resource or rise to a level of significance that warrants development and application of more rigorous CMAs or a DRECP LUPA amendment. Minor incursions may be allowed to prevent or minimize greater resource impacts from an alternative approach to the activity. Not all minor incursions are considered unavoidable impacts.

**mitigation.** As defined under both the National Environmental Policy Act (NEPA), mitigation includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

**Mojave yucca rings.** Rings of Mojave yucca (*Yucca schidigera*) that form in a similar manner as described for creosote bush rings (see definition). Mojave yucca reproduces sexually through the production of seed; vegetative reproduction is much more common and likely much more important to its persistence and spread (LaPre 1979; Gucker 2006). The species produces sprouts from short rhizomes that are close to parent stems (Gucker 2006). Rings form as the clonal growth proceeds outward from the original parent stem, and the central plant ages and dies (Gucker 2006). Mojave yucca rings can be as large as 20 feet in diameter and have up to 130 stems. Rings this large are thought to be at least 2,100 years old (mojavedesert.net 2013).

**Monitoring and Adaptive Management Program (MAMP).** A component of the DRECP BLM LUPA. The MAMP is the vehicle for structuring and reporting adaptive management.

## N

**National Landscape Conservation System (NLCS).** In accordance with and as defined by Public Law 111-11 in the Omnibus Public Land Management Act of 2009 (PL 111-11), Sections 2002(a),(b)(1)(A-F), and (b)(2)(D), the NLCS is a BLM land use designation to conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations. Areas specially designated as part of the NLCS in PL 111-11 are Wilderness, Wilderness Study Areas, National Monuments, National Scenic Trails, National Historic Trails, and National and Wild and Scenic Rivers. These NLCS lands are part of the LLPAs in the DRECP LUPA. PL 111-11 also directed BLM to designate public land within the CDCA administered for conservation purposes as part of the NLCS. These lands are the **California Desert National Conservation Lands** and are part of the LUPA conservation designations. The California Desert National Conservation Lands designated in the DRECP LUPA are an addition to the other components of the NLCS. The

DRECP LUPA CMAs use the terms and acronyms, NLCS, CDNCL and NCL (National Conservation Lands) interchangeably.

**nonfederal lands.** Land owned by state agencies, local jurisdictions (e.g., cities or counties), non-governmental organizations, or private citizens, or otherwise not under federal ownership or management.

**no surface occupancy.** A fluid mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the lease surface to protect special values of uses. Lessees may explore for or exploit the fluid minerals under leases restricted by this stipulation by using directional drilling from sites outside the no surface occupancy area. The no surface occupancy stipulation is used in CMAs relative to geothermal leasing on specific land allocations.

## O

**occupied habitat.** Suitable habitat determined to be inhabited by a Focus or BLM Special Status Species based on the results of a habitat assessment and species-specific presence/absence or protocol surveys. This term is not applicable to wide-ranging large mammals with often poorly defined home ranges. For example, linkages may be typically unoccupied most of the time but nonetheless critical to population viability. In addition, the concept is not applicable to nomadic species, such as burro deer (*Odocoileus hemionus eremicus*), which opportunistically exploit flushes of new plant growth in response to unpredictable precipitation patterns. Thus, an area may not be used for many years because of a lack of summer thunderstorms, but then used heavily when it does rain in that area.

**occurrences.** Positive detections of specific wildlife or plant species or vegetation type in an area, resulting from protocol or presence/absence surveys, generally confirmed by a qualified biologist or botanist.

**Open Off-Highway Vehicle (OHV) Lands.** Designations on BLM-administered lands where motorized and non-motorized uses, including cross-country travel, is permitted (generally referred to as Open Areas or Designated Open OHV Areas). The LUPA has designated the open OHV Areas in the DRECP Plan Area as SRMAs.

**Open OHV Lands – Imperial Sand Dunes.** Open OHV Lands within the approved Imperial Sand Dunes Recreation Area Management Plan (ISDRA). These lands are within the DRECP LUPA planning area boundary, but are not part of the DRECP LUPA Decision Area. The DRECP LUPA does not result in any changes to the ISDRA.

## P

**pre-activity survey.** Surveys conducted prior to project or activity site preparation and construction or implementation of an activity to determine presence and distribution of Focus and BLM Special Status Species, suitable habitat for these species, and/or vegetation types, as well as the need to implement applicable CMAs.

**presence/absence survey.** A survey conducted during the planning phase of a proposed activity to determine the presence/absence by a Focus or BLM Special Status Species, when a standard protocol survey for that species is not available, as specified in the species-specific CMAs or available from BLM, or USFWS or CDFW as approved for use by BLM. A presence/absence survey may replace a protocol survey in some other circumstances, depending on site conditions and/or timing of the survey (e.g., breeding season), with approval from BLM, in coordination with USFWS and CDFW, as appropriate.

**Proposed LUPA.** The Proposed LUPA was the BLM's preferred alternative in the Final Environmental Impact Statement (EIS). The Proposed LUPA and Final EIS built on the Draft LUPA and EIS, and incorporated the response to public comment on the Draft LUPA and EIS. The Proposed LUPA was protestable to the BLM Director, as outlined in the Dear Reader Letter that accompanied the Proposed LUPA and Final EIS.

**protocol survey.** Species-specific surveys that are conducted under a protocol that has been adopted by the USFWS and/or CDFW or is otherwise scientifically accepted for determining the occupancy or presence and absence of Focus and BLM Special Status Species. These surveys are required as specified in the species-specific CMAs in the LUPA.

**public land.** Land or interest in land owned by the United States and administered by the U.S. Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, but not including (1) lands on the outer continental shelf and (2) lands held for the benefit of Indians, Aluets, and Eskimos.

**public land, federal.** Land or interest in land owned by the United States, and administered by a federal agency (see **federal lands**).

**public land, nonfederal.** Land or interest in land owned by the State of California, or the counties, typically administered by a state or local agency.

## R

**Renewable Energy Action Team (REAT) Agencies (also known as REAT Agencies or DRECP partner agencies).** The DRECP REAT comprises representatives from the BLM, California Energy Commission (CEC), USFWS, and CDFW.

**renewable energy project area.** The total land area affected by a renewable energy activity, including the area directly and indirectly affected (equates to approximately 7.1 acres/MW for solar development, 40 acres/MW for wind development, and 5 acres/MW for geothermal development).

**right-of-way avoidance area.** An area that is to be avoided by, but may be available for, location of land use authorizations and non-renewable energy activities, if the authorization has special stipulations to meet planning goals and objectives for that area. If a land use authorization already exists in an avoidance area, a new authorization would be encouraged, and may be required, to collocate within the bounds of the existing use authorization.

**right-of-way exclusion area.** An area that is not available for land use authorizations under any conditions.

## S

**setback.** A defined distance, usually expressed in feet or miles, from a resource feature (such as the edge of a vegetation type or an occupied nest) within which an activity would not occur; otherwise often referred to as a buffer. The purpose of the setback is to maintain the function and value of the resource features identified in the DRECP LUPA CMAs.

**short-term impacts.** Ground and/or vegetation impacts that result in effects lasting 2 years or less.

**solar project.** Activity that involves the construction, operation, maintenance and eventual decommissioning of a facility that generates energy from sunlight, including photovoltaic panels and thermal systems that convert the heat from sunlight into steam. Solar projects may include up to several acres of photovoltaic or mirror panel arrays, a thermal tower, access roads, maintenance facilities, generators, foundations, and transformers, or other supporting infrastructure.

**Special Recreation Management Area (SRMA).** Designation on BLM-administered lands that are recognized and managed for their recreation opportunities, unique value and importance. SRMAs are high-priority areas for outdoor recreation as defined in the BLM Land Use Planning Handbook H-1601-1 (2005). It is a public lands unit identified in land use plans to direct recreation funding and personnel to manage for a specific set of recreation activities, experiences, opportunities and benefits. Both land use plan decisions and subsequent implementing actions for recreation in each SRMA are geared to a strategically identified primary market— destination, community, or undeveloped areas.

**stressors.** Physical, chemical, or biological factors (or conditions) that affect biological resources, including species or their suitable habitat, vegetation types, and/or important

ecosystem processes. The precise contribution of each stressor to a species' population may be uncertain, including which stressors have the greatest effect. In many cases stressors interact, and a combination of various stressors may affect a species.

**suitable habitat.** In general, Focus and BLM Special Status Species habitat consisting of land within a species range that has—in the case of wildlife, breeding and foraging habitat characteristics required by the species, or in the case of plants, vegetation and microhabitat characteristics—consistent with known or likely occurrences, as determined by the habitat assessment.

## T

**transmission lines.** Linear facilities that move electricity from generating sites to electrical substations, and then on to the electrical distribution network. Transmission lines generally consist of: 1) *collector lines, or generator interconnection lines ("gen-tie" lines)* that connect generation projects to collector substations; 2) *connector lines* that connect lower voltage substations with higher voltage substations; and 3) *delivery lines* that support the long distance, bulk power transfer of electricity between generation centers and load centers, generally at high voltage.

**transmission activity.** Activities that involve the construction, operation, and maintenance of a transmission line, including step-up transformers, towers, and substations, but generally consisting of a linear type of disturbance.

**transmission aligned.** Renewable energy generation development that occurs in areas immediately adjacent, or in close proximity, to existing transmission facilities and/or approved designated utility corridors. Aligning renewable energy generation development with the existing approved utility corridors or lines (i.e. transmission system) is meant to minimize resource impacts by reducing the need for new, unplanned transmission infrastructure.

**Transmission Technical Group (TTG).** An independent technical advisory group, convened by the CEC, that assisted with transmission planning for the DRECP.

**Travel Management Areas.** On BLM-administered land, polygons or delineated areas where a rational approach has been taken to classify areas as open, closed, or limited, and which have an identified and/or designated network of roads, trails, ways, and/or other routes that provide for public access and travel across the LUPA Planning Area.

**tribal lands.** Those lands that constitute "Indian Country" within the meaning of Title 18 United States Code Section 1151.



## U

**unavoidable impacts to resources.** Small-scale impacts to sensitive resources, as allowed per specific CMAs, that may occur even after such impacts have been avoided to the maximum extent practicable (see definition). Unavoidable impacts are limited to minor incursions (see definition), such as a necessary road or pipeline extension across a sensitive resource required to serve an activity.

## V

**valid existing rights.** A documented, legal right or interest in the land that allows a person or entity to use said land for a specific purpose. Such rights include fee title ownership, mineral rights, rights-of-way, easements, permits, licenses, etc. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.

**Variance Process Lands (VPL).** These lands are potentially available for renewable energy development, but projects on Variance Process Lands have minimal streamlining and are not incentivized. Variance Process Lands have a specific set of CMAs. Project Applicants must demonstrate that a proposed activity on Variance Process Lands will avoid, minimize, and/or mitigate sensitive resources as per the CMAs, will be compatible with any underlying BLM land allocation, and per the CMAs be compatible with and not have an adverse effect on the LUPA design and DRECP strategies. Renewable energy applications in Variance Process Lands will follow the process described in the Western Solar Plan Record of Decision, Section B.5.

**vegetation types (also referred to a desert vegetation types or communities and DRECP vegetation types).** Vegetation types are defined as assemblages of vegetation of similar types and the plant and animal species that use those vegetation types as habitat. A vegetation type is generally characterized by its similarities and the natural ecological processes that dominate the type and give it its unique characteristics. Vegetation types are included as a key element of the DRECP conservation framework, and have specific CMAs. For the purposes of mapping and characterization in the DRECP, vegetation types are mapped within the National Vegetation Classification System hierarchy at the “group” level, which is finer-grained than the broad general community groupings but coarser than “alliances.”

**Visual Resource Management (VRM) Classes.** BLM categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes, I–IV. Each class has an objective that prescribes the amount of change allowed in the characteristic landscape.

## W

**Wildlife Allocation.** BLM conservation designation on BLM-administered lands where management emphasizes wildlife values, but the area does not contain the same sensitive values or management limitations as an ACEC.

**wind project.** An activity that involves the construction, operation, maintenance, and eventual decommissioning of a facility that generates energy from wind, using an array of turbines to capture and convert the wind energy to electricity. Wind projects may include up to several acres of turbines and foundations, access roads, maintenance facilities, generators, and transformers.

**withdrawal.** Removal or withholding of public lands by statute or secretarial order from the operation of some or all of the public land laws, such as from hard-rock mining or patent entry, in order to maintain other public values in the area. A withdrawal can also be used to reserve an area for a particular public purpose or program or to transfer jurisdiction over an area of public land from one federal department, bureau, or agency to another.

## Appendix C: Acronyms and Abbreviations

°F	Degrees Fahrenheit
µg/m <sup>3</sup>	Micrograms Per Cubic Meter
AADT	Annual Average Daily Traffic
AB	Assembly Bill
ACEC	Picacho Area Of Critical Environmental Concern
AMSL	Above Mean Sea Level
APCD	Air Pollution Control Districts
APE	Area Of Potential Effects
BLM	Bureau of Land Management
BMP	Best Management Practice
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQ	President's Council on Environmental Quality
CEQA	California Environmental Quality Act of 1970
CESA	Cumulative Effects Study Area
CFR	Code of Federal Regulations
CGP	California General Permit
CMA	Conservation Management Action
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
CWA	Clean Water Act
dBA	Decibels on the A-weighted Scale
DRECP	Desert Renewable Energy Conservation Plan
EA	Environmental Assessment
ECFO	El Centro Field Office
EEC	Environmental Evaluation Committee
EIR	Environmental Impact Report
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act of 1972
FCR	Field Contact Representative
FLPMA	Federal Land Policy and Management Act of 1876
GHG	Greenhouse Gas
H:V	Horizontal to Vertical
HAP	Hazardous Air Pollutant
Imperial County	Imperial County Planning Department
IS	Initial Study
KOPs	Key Observation Points
kW	Kilowatt
Ldn	Day/Night Average Sound Level
Leq	Energy-Averaged Sound Level
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act of 1918

Mining Law	General Mining Law of 1872
MLRA	Major Land Resource Area
MND	Mitigated Negative Declaration
MSHA	Mine Safety and Health Administration
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Repatriation Act
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Properties Act of 1966
NO <sub>x</sub>	Nitrogen Oxide
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWPR	Navigable Waters Protection Rule
OHV	Off-Highway Vehicle
PDF	Project Design Feature
Plan	Existing Oro Cruz Pit Area Exploration Plan of Operations
PM <sub>10</sub>	Particulate Matter 10 Microns in Diameter or Less
PM <sub>2.5</sub>	Particulate Matter 2.5 Microns in Diameter or Less
PRC	Public Resources Code
Project	Oro Cruz Exploration Project
RFFA	Reasonably Foreseeable Future Actions
RWQCB	Regional Water Quality Control Board
SCIC	South Coastal Information Center
SGMA	Sustainable Groundwater Management Act of 2014
SGP	Stormwater General Permit
SIP	State Implementation Plan
SMARA	California Surface Mining and Reclamation Act of 1975
SMP	SMP Gold Corp.
SO <sub>2</sub>	Sulfur Dioxide
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Place
US	United States
USACE	US Army Corps of Engineers
USC	US Code
USDA	US Department of Agriculture
USFWS	US Fish and Wildlife Service
VAA	Visual, Auditory, and Atmospheric
VOC	Volatile Organic Compound
VRM	Visual Resource Management

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## **Appendix E: Technical Studies**

**Project Emissions Summary**

	PM		PM <sub>10</sub>		PM <sub>2.5</sub>		CO		NOx		SO <sub>2</sub>		VOC	
	(lb/day)	(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(tons/yr)
<b>Road Construction</b>														
<b>Non-Fugitives</b>	0.00	0.00	0.00	0.00	2.43	0.02	42.57	0.43	45.58	0.46	0.08	0.00	3.08	0.03
<b>Fugitives</b>	50.62	0.51	12.91	0.13	1.40	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Drill Site Construction</b>														
<b>Non-Fugitives</b>	0.00	0.00	0.00	0.00	0.97	0.00	16.92	0.07	18.07	0.07	0.03	0.00	1.27	0.01
<b>Fugitives</b>	87.26	0.35	22.20	0.09	2.80	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Exploratory Drilling**</b>														
<b>Non-Fugitives</b>	3.98	0.25	3.98	0.25	7.93	0.43	132.73	7.26	120.44	6.35	0.21	0.01	9.18	0.50
<b>Fugitives</b>	220.93	13.17	56.57	3.38	5.88	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Helicopter Use Emissions</b>														
<b>Non-Fugitives</b>	0.07	0.00	0.07	0.00	0.07	0.00	3.85	0.02	6.38	0.04	0.02	0.00	3.14	0.02
<b>Laydown Yard Emissions**</b>														
<b>Non-Fugitives</b>	0.27	0.03	0.27	0.03	2.39	0.24	103.40	10.34	45.06	4.51	0.16	0.02	5.18	0.52
<b>Fugitives</b>	147.97	17.19	38.02	4.42	3.80	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum Hourly and Annual Project Emissions*</b>														
<b>Maximum Non-Fugitives</b>	4.32	0.28	4.32	0.28	10.39	0.67	239.98	17.62	171.89	10.90	0.39	0.03	17.50	1.04
<b>Maximum Fugitives</b>	<b>368.90</b>	<b>30.36</b>	<b>94.59</b>	<b>7.79</b>	<b>9.68</b>	<b>0.79</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Maximum</b>	<b>373.22</b>	<b>30.64</b>	<b>98.90</b>	<b>8.08</b>	<b>20.07</b>	<b>1.46</b>	<b>239.98</b>	<b>17.62</b>	<b>171.89</b>	<b>10.90</b>	<b>0.39</b>	<b>0.03</b>	<b>17.50</b>	<b>1.04</b>

\*Assumes Exploratory Drilling and Laydown Yard emissions occur simultaneously

\*\*Includes Stationary Source Combustion Emissions

<b>Hazardous Air Pollutants (HAPs)*</b>		
Pollutants	(lbs/day)	(tons/yr)
Benzene	2.15E-01	1.69E-02
Toluene	9.42E-02	7.37E-03
Xylenes	6.57E-02	5.14E-03
1,3-Butadiene	9.01E-03	7.05E-04
Formaldehyde	2.72E-01	2.13E-02
Acetaldehyde	1.77E-01	1.39E-02
Acrolein	2.13E-02	1.67E-03
Naphthalene	1.95E-02	1.53E-03
Acenaphthylene	1.17E-03	9.12E-05
Acenaphthene	3.27E-04	2.56E-05
Fluorene	6.73E-03	5.26E-04
Phenanthrene	6.77E-03	5.30E-04
Anthracene	4.31E-04	3.37E-05
Fluoranthene	1.75E-03	1.37E-04
Pyrene	1.10E-03	8.61E-05
Benzo(a)anthracene	3.87E-04	3.03E-05
Chrysene	8.13E-05	6.36E-06
Benzo(b)fluoranthene	2.28E-05	1.79E-06
Benzo(k)fluoranthene	3.57E-05	2.79E-06
Benzo(a)pyrene	4.33E-05	3.39E-06
Indeno(1,2,3-cd)pyrene	8.64E-05	6.76E-06
Dibenz(a,h)anthracene	1.34E-04	1.05E-05
Benzo(g,h,i)perylene	1.13E-04	8.81E-06
<b>Total HAPs</b>	<b>0.8932774</b>	<b>0.06993675</b>

<b>Greenhouse Gas Emissions (GHGs)*</b>		
Pollutants	(lb/day)	(tons/yr)
CO <sub>2</sub>	53,121	2,955
CH <sub>4</sub>	110.76	0.80
N <sub>2</sub> O	21.62	0.16
<b>Total CO<sub>2</sub>e</b>	<b>62,333</b>	<b>3,021</b>

<b>Project Operational Emissions</b>						
lb/day						
	NOx	ROG/VOC	PM10	SOx	CO	PM2.5
<b>Operations</b>	117.97	10.56	98.90	0.22	107.41	20.07
<b>Thresholds</b>	137	137	150	150	550	550

<b>Construction Emissions</b>				
	PM10	ROG/VOC	NOx	CO
<b>Construction</b>	35.12	4.35	63.65	59.50
<b>Thresholds</b>	150	75	100	550



**Stantec Consulting Services Inc.**  
1165 East Jennings Way, Suite 101  
Elko, NV 89801-7977

5390 Kietzke Lane, Suite 103  
Reno, NV 89511-2213

## Memorandum

**To:** Mayra Martinez, Bureau of Land Management  
Carrie Sahagun, Bureau of Land Management  
Grant Day, Bureau of Land Management

**From:** Shelby Hockaday, Stantec Consulting Services Inc.

**Date:** May 4, 2022

**Project:** Oro Cruz Exploration Project  
Stantec Project Number 203722070

**Subject:** Noise Modeling for Indirect Auditory Area of Potential Effect

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This memorandum transmits the noise modeling results for the SMP Gold Corp.'s (SMP) Oro Cruz Exploration Project (Project).

### INTRODUCTION

Stantec Consulting Services Inc. (Stantec) was contracted by SMP to conduct a preliminary noise impact analysis following conversations with the Bureau of Land Management (BLM) El Centro Field Office to determine an appropriate Indirect Auditory Area of Potential Effect (Indirect Auditory APE) for a cultural resources and noise analysis in the anticipated Environmental Assessment (EA) for the Project under the National Environmental Policy Act (NEPA). The Noise Control Act of 1972 required the U.S. Environmental Protection Agency (EPA) to establish noise emission criteria as well as noise testing methods to protect public health and welfare against hearing loss, annoyance, and activity interference, which correlates with the human response to noise. The EPA's recommendation for acceptable noise level limits affecting residential land use is 55 decibels on the A-weighted scale (dBA) day/night average sound level ( $L_{dn}$ ) for outdoors and 45 dBA  $L_{dn}$  for indoors (EPA 1972). These levels of noise are considered those that will permit spoken conversation and other activities such as sleeping, working, and recreation, which are all considered part of the daily human condition; these levels represent averages of acoustic energy over periods of time. Additionally, Section 106 of the National Historic Preservation Act (NHPA) of 1966 (54 United States Code 300101 et seq.) guides that an Indirect Auditory APE should be delineated and should include all locations from which elements of the proposed Project may cause adverse auditory effects to cultural or historic properties.

The Indirect Auditory APE developed for the Project is anticipated to be included in the pending Class III Inventory report that is currently being prepared as required under Section 106 of the NHPA. The Indirect Auditory APE would also be used for analysis of cultural resources and noise impacts in the respective Affective Environment and Environmental Consequences sections of the anticipated EA. Stantec subcontracted with Saxelby Acoustics to conduct an analysis of potential noise level occurrences associated with the Project.

The Project area would include a total of approximately 626 acres on public lands administered by the BLM El Centro Field Office with anticipated total surface disturbance from exploratory drilling activities of up to 20.54 acres. The Project proposes up to 65 temporary drilling locations within the Project area. The Project would have a life expectancy of up to two years, with drilling occurring over up to two weeks at each of the 65 proposed drill sites prior to moving to a new drill site location. There would only be two drill rigs in operation at a time within the Project area, that would operate on a 12- or 24-hour-per-day schedule, with potential for both drill rigs operating within one Drill Area (SMP, 2021).

## **METHODOLOGY**

Stantec consulted with Saxelby Acoustics to develop noise contours through noise modeling software (SoundPlan) to detail the furthest distance in miles where potential Project noise would attenuate to an imperceptible or nearly imperceptible level with a maximum of two drill rigs running at once, per the activities proposed in SMP's Existing Oro Cruz Pit Area Exploration Plan of Operations (Plan). It was recommended that the furthest distance where noise would be nearly imperceptible would be measured down to 25 dBA.

Exploration activities were quantified using a comprehensive list of Project-proposed equipment from the Plan. Because the exact locations of drill sites are unknown at this time and are flexible per the Plan, prior to Saxelby Acoustics running the noise model, Stantec developed potential noise source locations along the boundaries of each of the seven proposed drill areas. The number of potential noise source locations were chosen based on four points along four sides of each of the seven drill areas (28 points total) to represent noise sources along the boundary traveling from each cardinal direction (north, south, east, and west).

Saxelby Acoustics then developed a noise model for the worst-case scenario of noise sources with all 28 points simulating drill rigs in all seven drill areas running at once to determine the absolute furthest distance, and in which direction, that noise would travel according to the following noise standards: Imperial County 45 dBA equivalent or energy-averaged sound level ( $L_{eq}$ ) nighttime noise standard, and the EPA's 55 dBA  $L_{dn}$ . The noise contours resulting from this scenario showed that noise would likely travel the furthest west based on the topography of the area. Based on this initial scenario, it was determined that the following four scenarios would most realistically represent the furthest that noise would travel as generated from the Project:

- Two drill rigs operating in Drill Area 2 to provide a realistic look at potential noise traveling to the northwest;
- Two drill rigs operating in Drill Area 3 to provide a realistic look at potential noise traveling to the northwest;
- Two drill rigs operating in Drill Area 4 to provide a realist look at potential noise traveling to the southwest; and
- Two drill rigs operating in Drill Area 6 to provide a realistic look at potential noise traveling to the southwest.

All scenarios included noise generated form the Drill Area and the staging area equipment. Noise generated from helicopter use via the helicopter landing pad proposed in Drill Area 1 was not included in the noise model as it would not contribute to continuous noise generated by Project drilling activities.

## **RESULTS OF THE NOISE MODELING**

The complete details of the noise modeling results as developed and analyzed by Saxelby Acoustics are included as **Attachment 1**.

The Indirect Auditory APE is shown on **Figure 1**, which incorporates the areas from Drill Areas 2, 3, 4, and 6 out to the furthest noise contour where noise would attenuate to 25  $L_{eq}$  (24-hour) ( $L_{eq}$  over 24-hours), a nearly inaudible level to the human ear (**Attachment 1**), which is approximately 1.7 miles to the southwest from the Project area. Noise impacts as a result of exploratory drilling activities would be temporary in nature and would not be stationary throughout the one-to-two-year life of the Project given the nature of the proposed approximately two-week drilling campaign at each drill site. The Indirect Auditory APE shown on **Figure 1** was determined to be an appropriate distance to assess indirect auditory impacts to cultural and historic properties of concern in the area, including the Tumco Historic Mine (**Figure 1**), which has been identified as a cultural property of concern in relation to potential Project impacts. The Indirect Auditory APE will also be used as the noise area of analysis in the Project's anticipated EA.

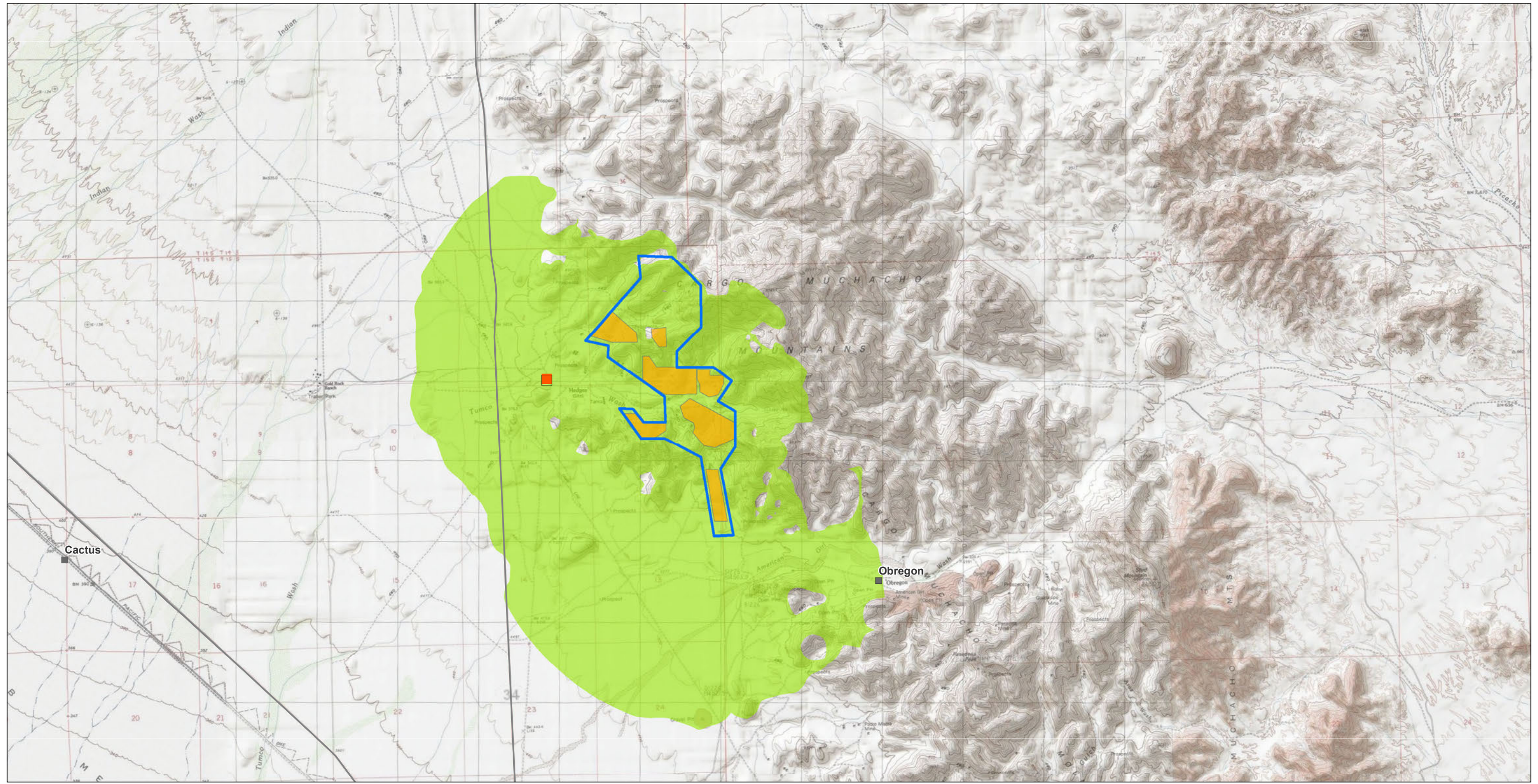
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## **FIGURES**



V:\2037\Active\203722070\03\_data\gis\_cad\figs\mxd\Figure\_1\_Potential\_Project\_Noise\_Impact\_Area\_v2.mxd Revised: 2022-04-15 By: chipjohnson



**Legend**

- Tumco Historic Mine
- Indirect Auditory APE
- Oro Cruz Plan Boundary
- Drill Hole Areas

1 in = 4,000 feet

SMP GOLD CORP.  
ORO CRUZ MINE

Imperial County, CA  
NAD 1983 UTM Zone 11N

DRAWN BY: CJ	1ST REVIEW: BT	2ND REVIEW: SH
DATE: 05/04/2022	PROJECT NO: 203722070	

**Figure 1**  
**Potential Project Noise**  
**Impact Area**

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 Sources: Esri, Gamma, USGS, NPS

# **ATTACHMENT 1**

## Memorandum

**To:** Shelby Hockaday, Project Manager  
Stantec  
5390 Kietzke Lane Suite 103  
Reno NV 89511-2302  
shelby.hockaday@stantec.com

**From:** Luke Saxelby, INCE Bd. Cert.  
Principal Consultant  
Board Certified, Institute of Noise Control Engineering

**Date:** April 13, 2022

**Project:** SMP Gold Corp. Oro Cruz Exploration  
Saxelby Acoustics Job Number 220208

**Subject:** Oro Cruz Exploration Drilling Noise Mapping



---

### INTRODUCTION

Saxelby Acoustics has prepared this letter to summarize our noise modeling for the SMP Gold Corp. Oro Cruz Exploration Drilling project.

### BACKGROUND AND INTENT

Saxelby Acoustics has been engaged to prepare noise modeling of proposed drilling operations for the above-reference project located in Imperial County, California. The project is located within the Cargo Muchacho mountains, approximately 14 miles northwest of the City of Yuma, Arizona. Saxelby Acoustics was engaged to map noise contours for the proposed drilling operations. The four scenarios mapped in this analysis are considered worst-case for noise traveling west and south from the proposed drilling areas, resulting in the furthest potential for drilling noise audibility. Drilling noise would be substantially shielded towards the east and north due to topography.

### NOISE CRITERIA

For this analysis, Saxelby Acoustics mapped noise contours for four operating scenarios, as described below. For each operating scenario, noise levels are mapped relative to three criteria. The first map of each scenario shows noise levels down to 25 dBA  $L_{eq}$ <sup>1</sup>. Based upon our experience, an average drilling noise level of 25 dBA  $L_{eq}$  would likely be barely audible to inaudible at most locations. Noise levels were also mapped down to 55 dBA  $L_{dn}$ , which is the US EPA recommended exterior noise level limit for outdoor uses, as shown in **Table 1**. Finally, noise levels were also mapped down to 45 dBA  $L_{eq}$  which is the Imperial County Municipal Code nighttime noise standard for residential uses.<sup>2</sup>

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<sup>1</sup> See **Appendix A** for definitions of acoustic terms.

<sup>2</sup> Imperial County Code of Ordinances. Section 90702.00.

[https://library.municode.com/ca/imperial\\_county/codes/code\\_of\\_ordinances?nodeId=TIT9LAUSCO\\_DIV7NOABCO\\_CH2LI\\_90702.00SOLELI](https://library.municode.com/ca/imperial_county/codes/code_of_ordinances?nodeId=TIT9LAUSCO_DIV7NOABCO_CH2LI_90702.00SOLELI)

**TABLE 1: SUMMARY OF NOISE LEVELS IDENTIFIED AS REQUISITE TO PROTECT THE PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY**

Effect	Level dB	Activity Area
Hearing Loss	70 L <sub>eq</sub> (24-hour)	All areas.
Outdoor activity interference and annoyance	55 L <sub>dn</sub>	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	55 L <sub>eq</sub> (24-hour)	Outdoor areas where people spend limited amounts of time (e.g., school yards, playgrounds)
Indoor activity Interference and Annoyance	45 L <sub>dn</sub>	Indoor residential areas.
	45 L <sub>eq</sub> (24-hour)	Other indoor areas with human activities (e.g., school yards playgrounds)
Leq (24-hour)	Equivalent A-weighted sound level over 24-hours	
L <sub>dn</sub>	Day-night average sound level-the 24-hour A-weighted equivalent sound level, with a 10-decibel penalty applied to nighttime levels	
Source: <i>Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety</i> . U.S. EPA March 1974.		

**PROJECT ASSUMPTIONS**

Saxelby Acoustics assumed that up to two exploration drills could be operating simultaneously in a given drilling area. The following outlines our noise modeling scenarios:

**Scenario 1 Continuous Noise Sources**

1. Two exploration drills in Area 2, each with 125kW generator
2. Two portable compressors at Staging Area
3. One 125kW generator at Staging Area

**Scenario 2 Continuous Noise Sources**

1. Two exploration drills in Area 3, each with 125kW generator
2. Two portable compressors at Staging Area
3. One 125kW generator at Staging Area

**Scenario 3 Continuous Noise Sources**

1. Two exploration drills in Area 4, each with 125kW generator
2. Two portable compressors at Staging Area
3. One 125kW generator at Staging Area

**Scenario 4 Continuous Noise Sources**

1. Two exploration drills in Area 6, each with 125kW generator
2. Two portable compressors at Staging Area
3. One 125kW generator at Staging Area

## NOISE MODELING

For noise modeling input assumptions, Saxelby Acoustics utilized manufacturer’s sound pressure level data for the proposed generators, field-collected data for the drill rigs, and published data for the portable compressors.

In order to input data directly into the SoundPLAN sound prediction model, sound pressure levels must be converted to sound power levels. This conversion is made according to the following formula (Source: Miller, L. N., Bolt, Beranek, & Newman, Inc. (1981). *Noise control for buildings and manufacturing plants*. Equation 6-2):

Where:

PWL = Sound Power Level

SPL = Sound Pressure Level

d = Distance from the center of the noise source to the noise measurement location, measured in meters. Assumes unobstructed sound propagation for a point source located on or near a large flat plane. This is known as “hemispherical sound radiation.”

Sound power level data for each noise source associated with the drilling operations were used as direct inputs to the SoundPLAN Noise Prediction Model (**Table 2**). Existing topography was also input into the noise model. The SoundPLAN noise prediction model is able to predict overall noise levels for multiple noise sources. Inputs to the model included ground topography and ground type, noise source locations and heights, receiver locations, and sound power level data. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). Ground type was assumed soft (G=1) for the noise modeling exercise.

**Table 2: Sound Power Levels, dBA L<sub>50</sub>**

Equipment / Location	Sound Pressure Level, dBA	Sound Power Level (PWL)	Utilization/Equipment
<b>Noise Level Assumptions</b>			
LF-90D Boart Longyear track-mounted drill rig, or similar	87 dBA at 25 feet	113 dBA	Continuous operation
125 kW generator	65 dBA at 23 feet	90 dBA	Continuous operation
Portable compressor (375 series, or similar)	76 dBA at 50 feet	108 dBA	Continuous operation

**Figures 1A-1C** show the results of the Scenario 1 noise modeling. **Figures 2A-2C** show the results for Scenario 2. **Figures 3A-3C** show the results for Scenario 3. **Figures 4A-4C** show the results for Scenario 2.

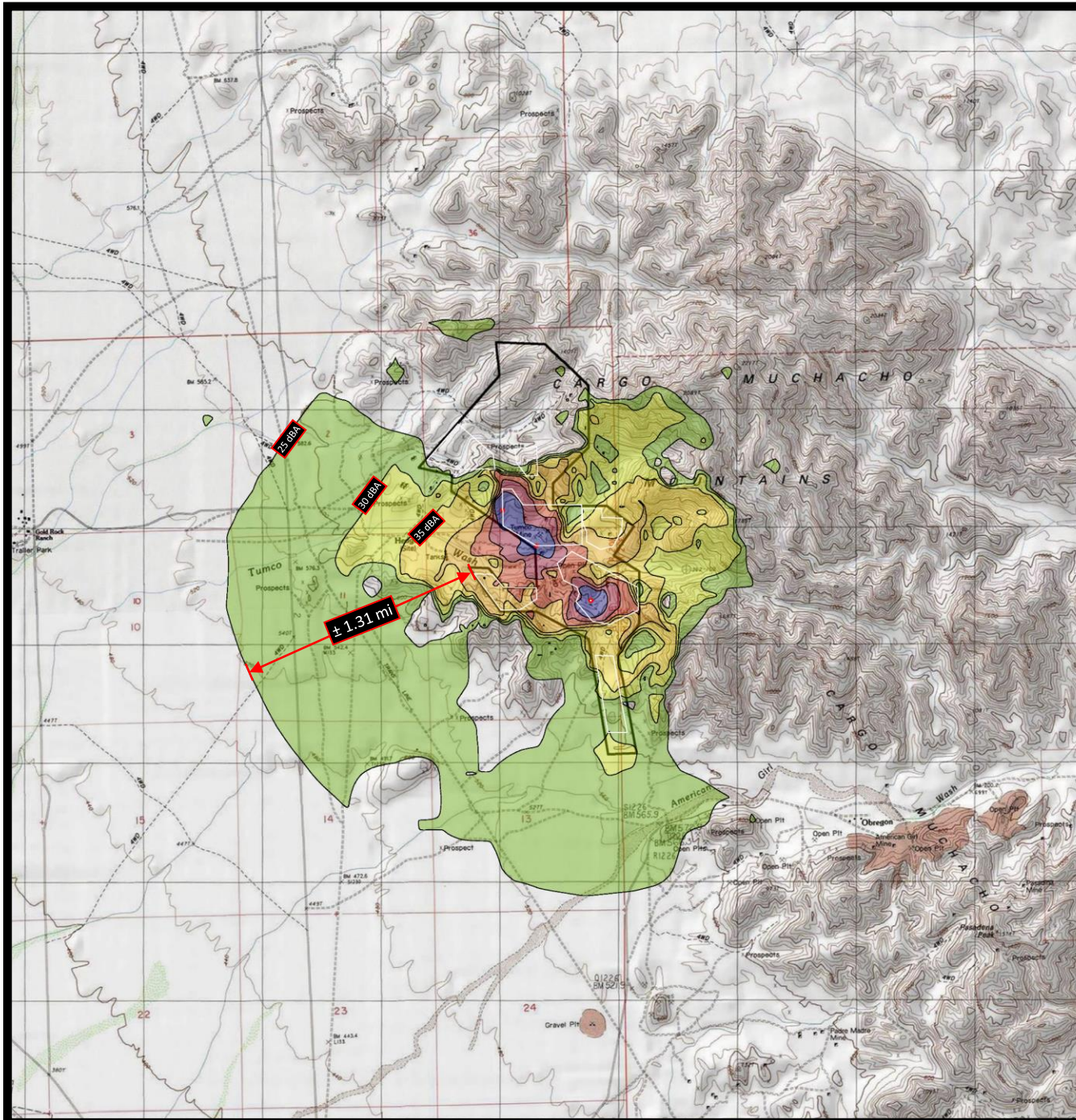
$$PWL = SPL + 10 \times \log(2 \times \pi \times d^2)$$

# Oro Cruz Exploration Drilling

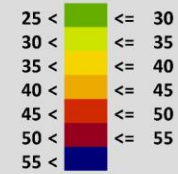
Imperial County, California

Figure 1A

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 2 and Staging Area Equipment –  
Contours Down to 25 dBA



Noise Level, dB(A)



### Legend

- Point Source
- Drill Areas

Scale 1:4000

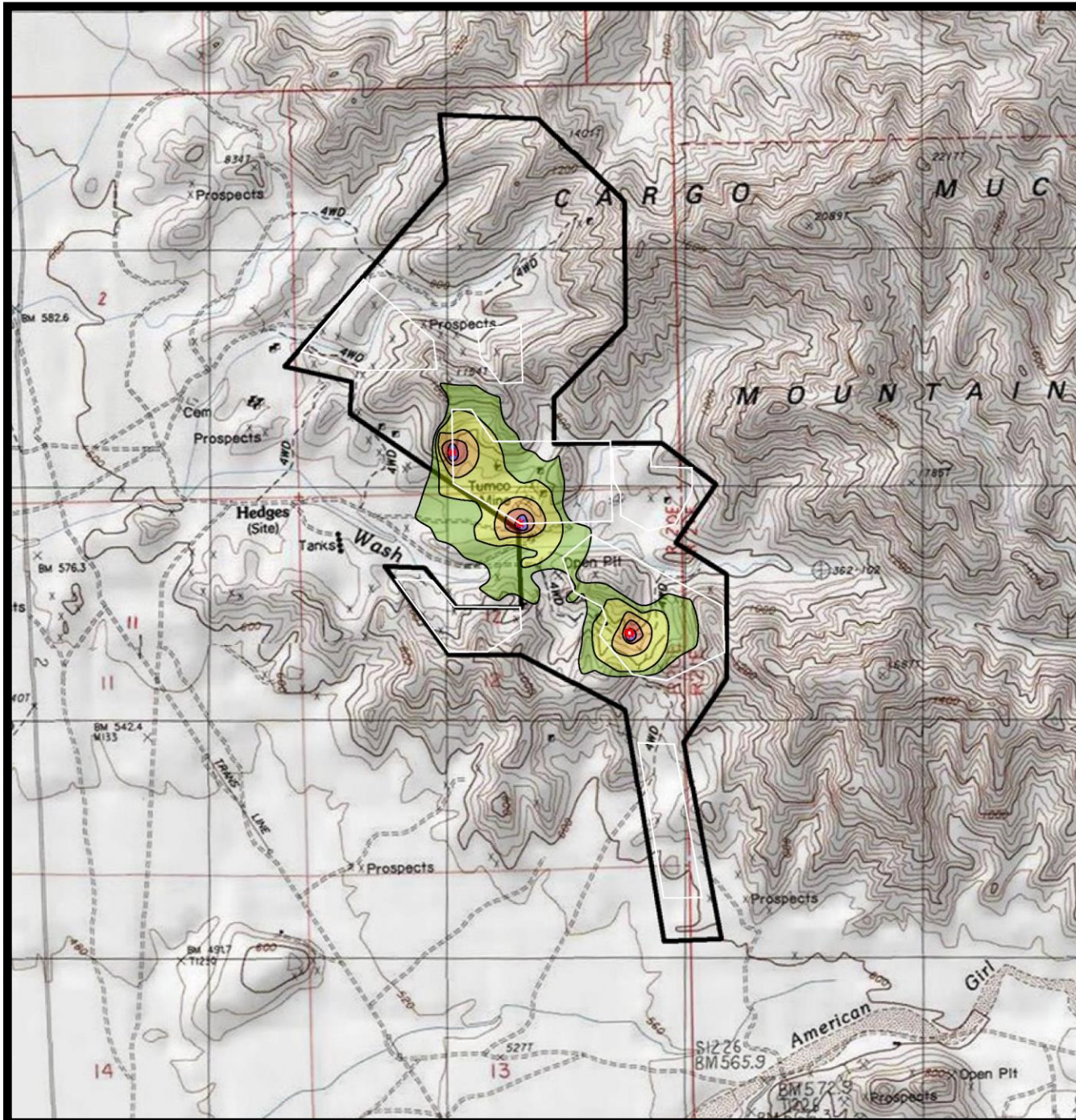


# Oro Cruz Exploration Drilling

Imperial County, California

Figure 1B

Project Noise Contours (dBA L<sub>dn</sub>) –  
2 Drills in Area 2 and Staging Area Equipment –  
Contours Down to US EPA Exterior 55 dBA L<sub>dn</sub> Standard



Noise Level, dB(A)

55 <	Green	<= 60
60 <	Light Green	<= 65
65 <	Yellow	<= 70
70 <	Orange	<= 75
75 <	Blue	<= 80

### Legend

- \* Point Source
- Drill Areas

Scale 1:2000

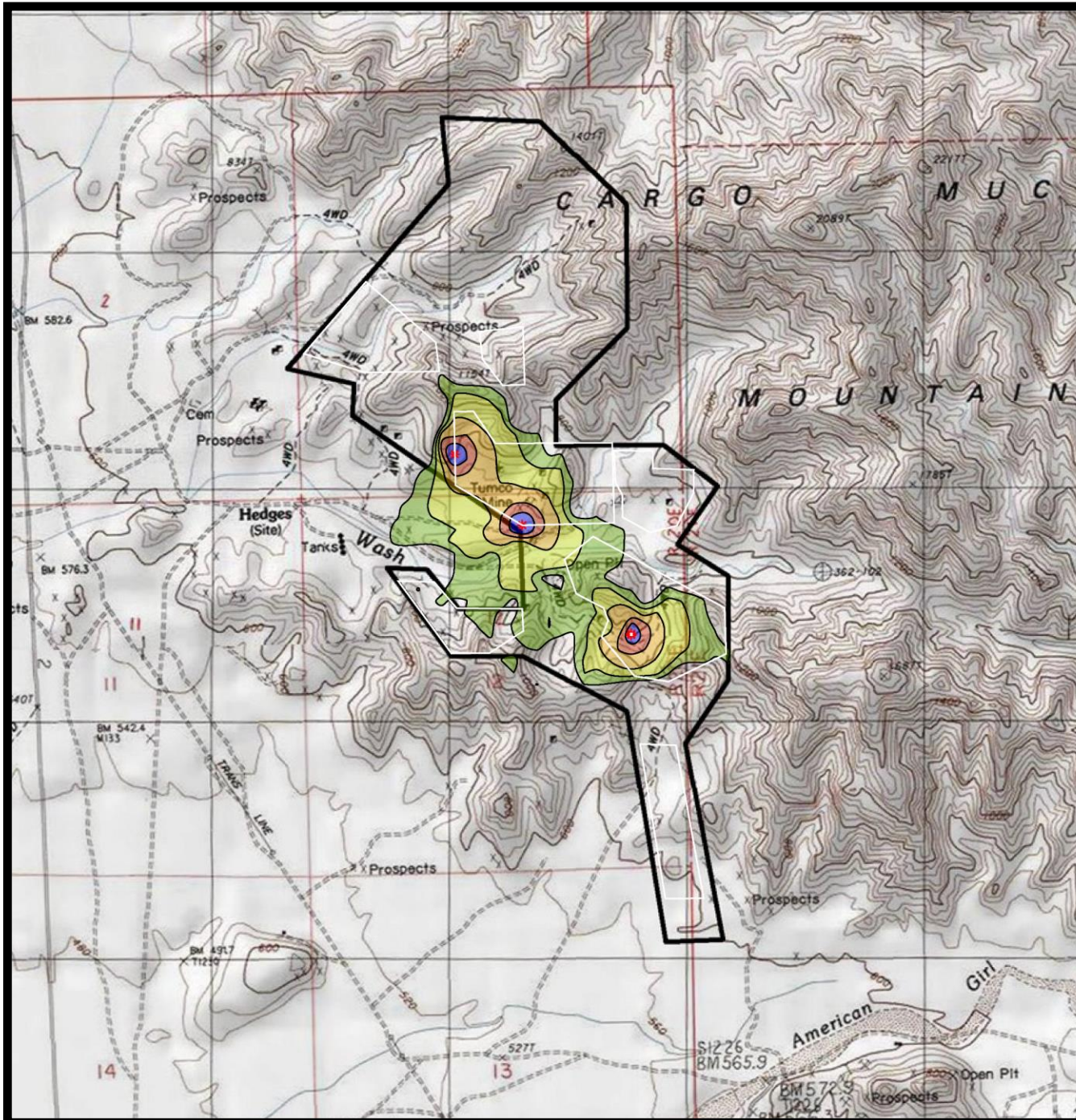


# Oro Cruz Exploration Drilling

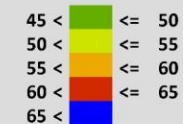
Imperial County, California

Figure 1C

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 2 and Staging Area Equipment –  
Contours Down to Imperial County 45 dBA  $L_{eq}$   
Nighttime Standard



Noise Level, dB(A)



### Legend

- \* Point Source
- Drill Areas

Scale 1:2000



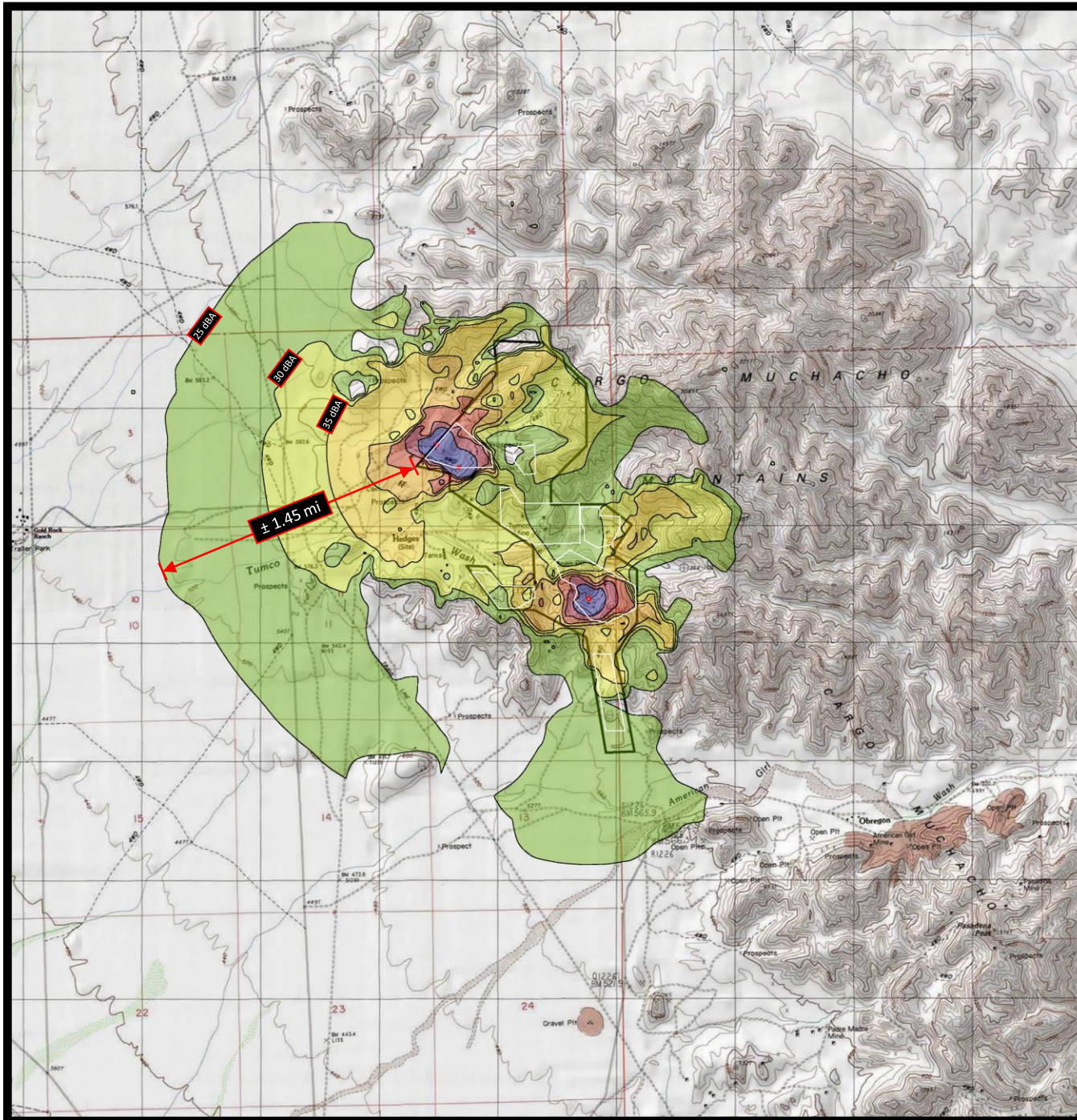


# Oro Cruz Exploration Drilling

Imperial County, California

Figure 2A

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 3 and Staging Area Equipment –  
Contours Down to 25 dBA



Noise Level, dB(A)

25 <	≤ 30
30 <	≤ 35
35 <	≤ 40
40 <	≤ 45
45 <	≤ 50
50 <	≤ 55
55 <	

### Legend

- Point Source
- Drill Areas

Scale 1:4000

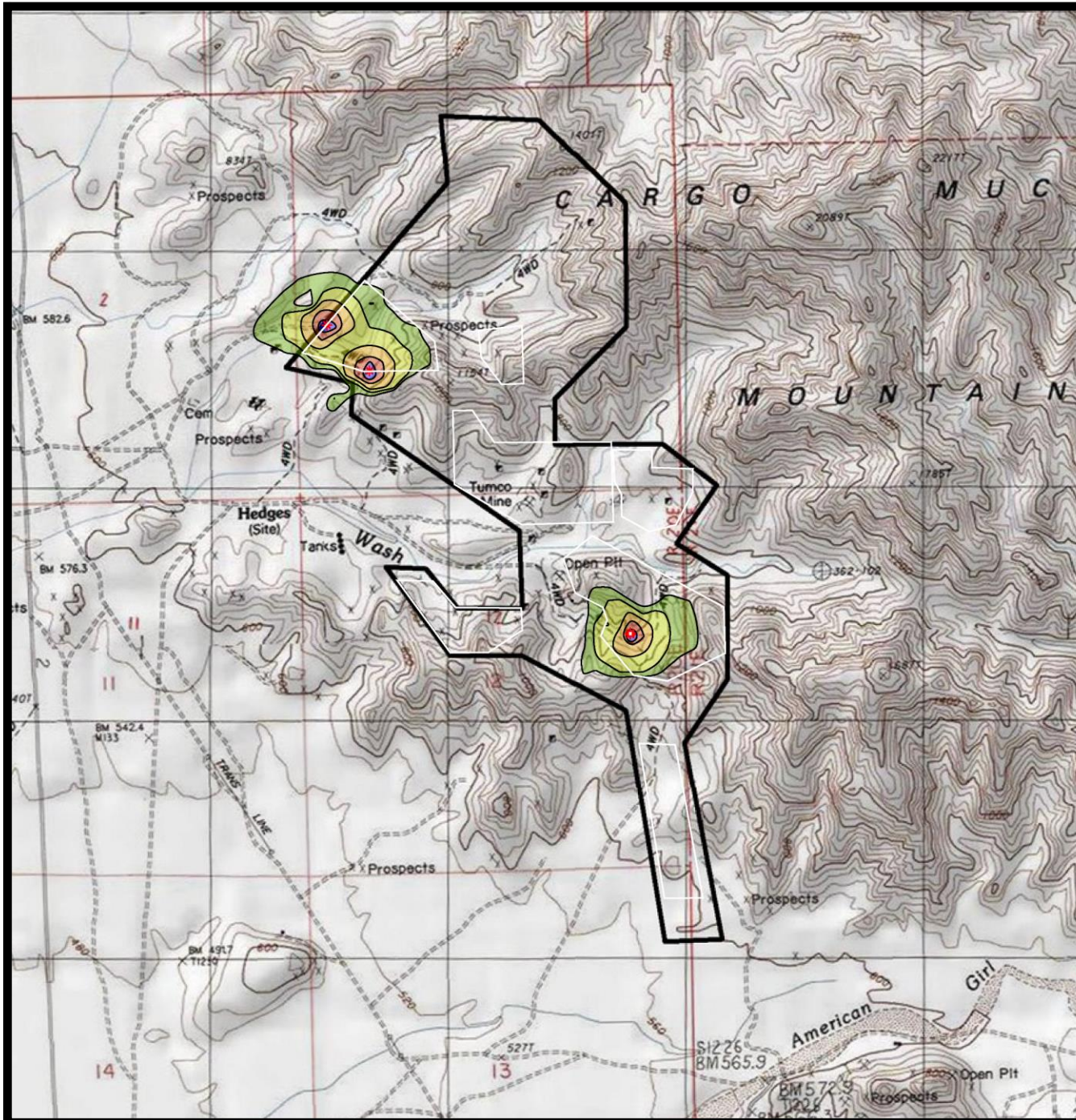


# Oro Cruz Exploration Drilling

Imperial County, California

Figure 2B

Project Noise Contours (dBA L<sub>dn</sub>) –  
2 Drills in Area 3 and Staging Area Equipment –  
Contours Down to US EPA Exterior 55 dBA L<sub>dn</sub> Standard



Noise Level, dB(A)

55 <	≤ 60
60 <	≤ 65
65 <	≤ 70
70 <	≤ 75
75 <	

### Legend

- \* Point Source
- Drill Areas

Scale 1:2000

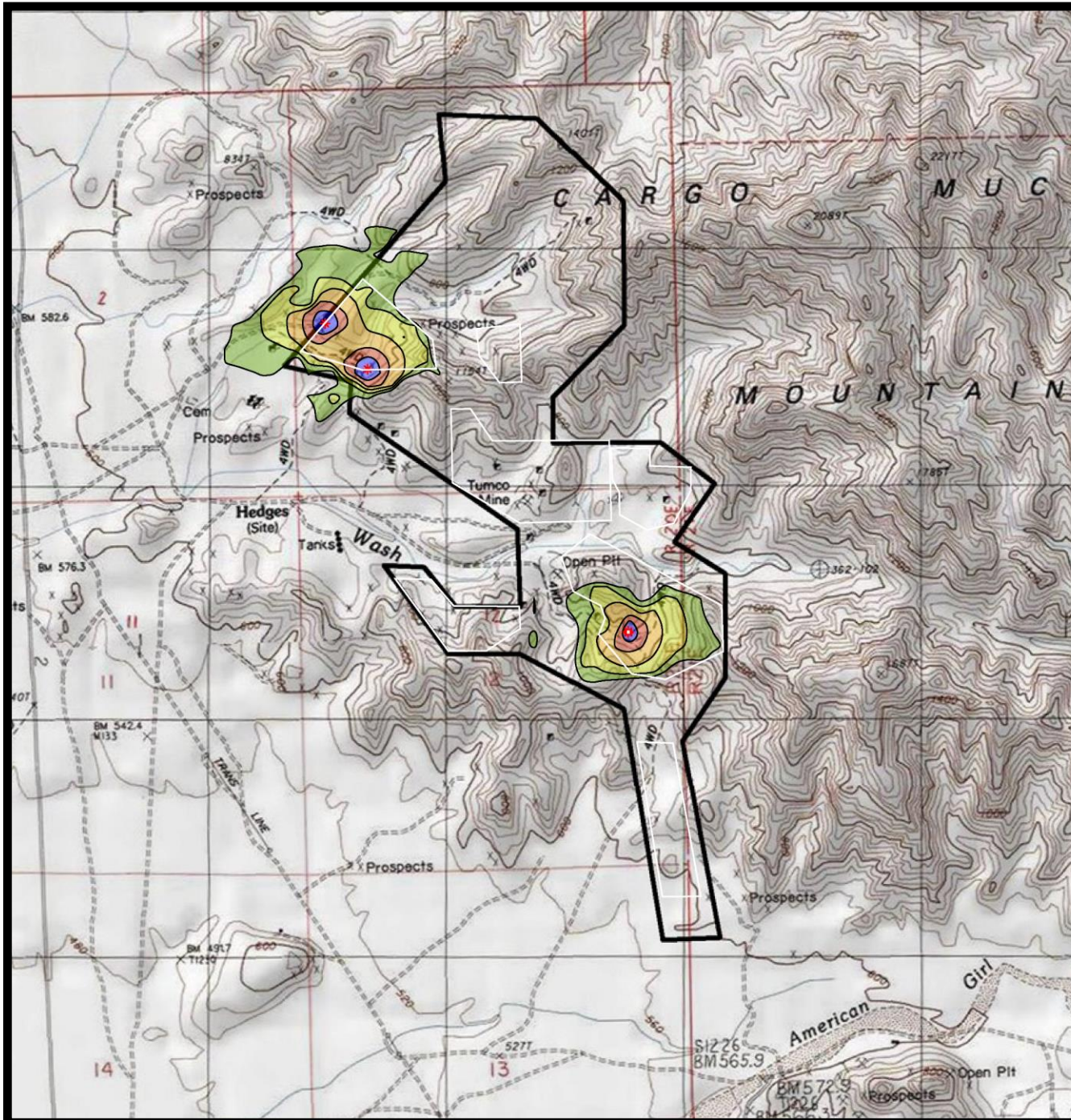


# Oro Cruz Exploration Drilling

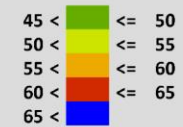
Imperial County, California

Figure 2C

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 3 and Staging Area Equipment –  
Contours Down to Imperial County 45 dBA  $L_{eq}$   
Nighttime Standard



Noise Level, dB(A)



### Legend

- \* Point Source
- Drill Areas

Scale 1:2000

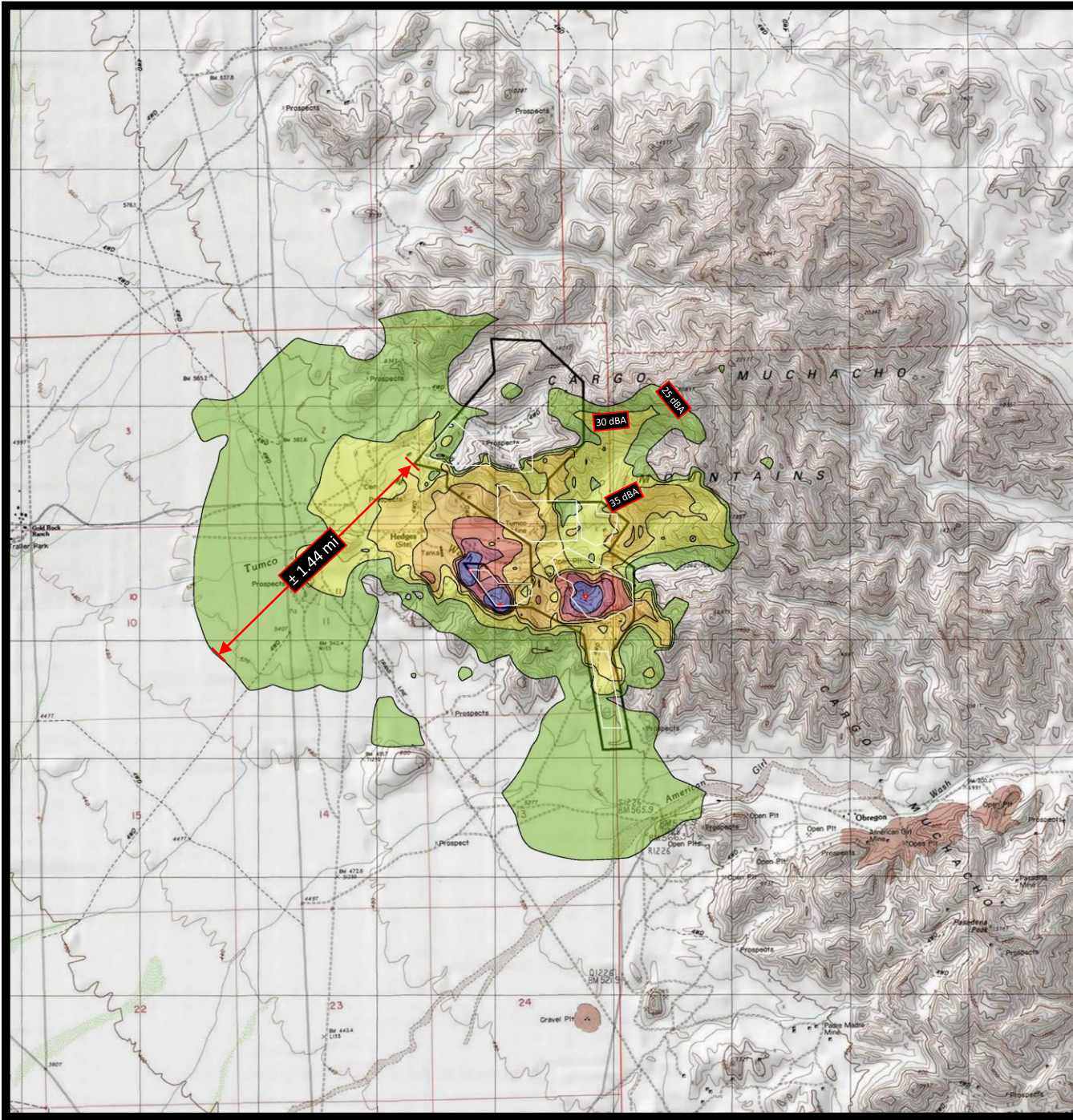


# Oro Cruz Exploration Drilling

Imperial County, California

Figure 3A

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 4 and Staging Area Equipment –  
Contours Down to 25 dBA



Noise Level, dB(A)

25 <	≤ 30
30 <	≤ 35
35 <	≤ 40
40 <	≤ 45
45 <	≤ 50
50 <	≤ 55

### Legend

- Point Source
- Drill Areas

Scale 1:4000

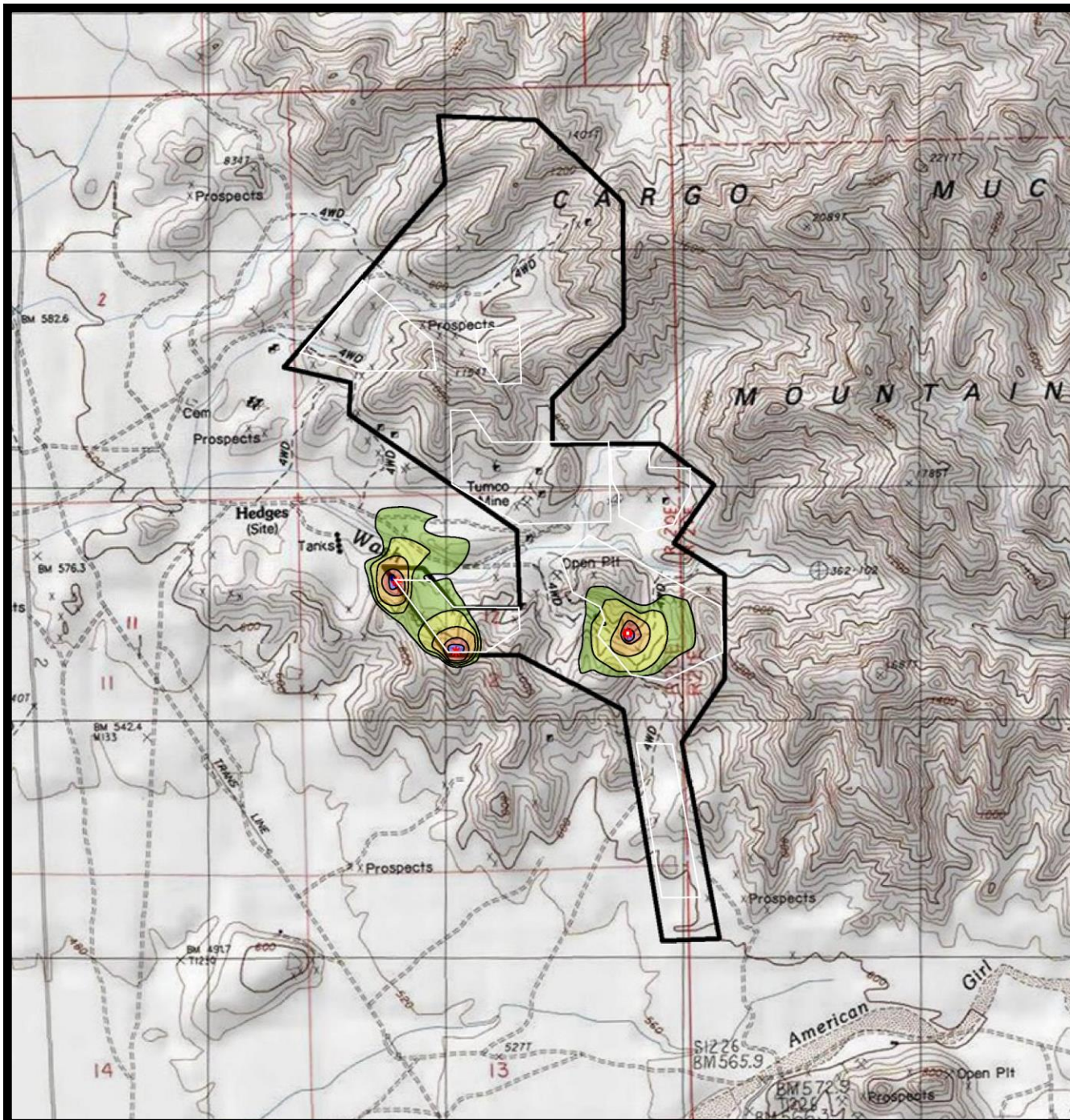


# Oro Cruz Exploration Drilling

Imperial County, California

Figure 3B

Project Noise Contours (dBA L<sub>dn</sub>) –  
2 Drills in Area 4 and Staging Area Equipment –  
Contours Down to US EPA Exterior 55 dBA L<sub>dn</sub> Standard



Noise Level, dB(A)



### Legend

- \* Point Source
- Drill Areas

Scale 1:2000

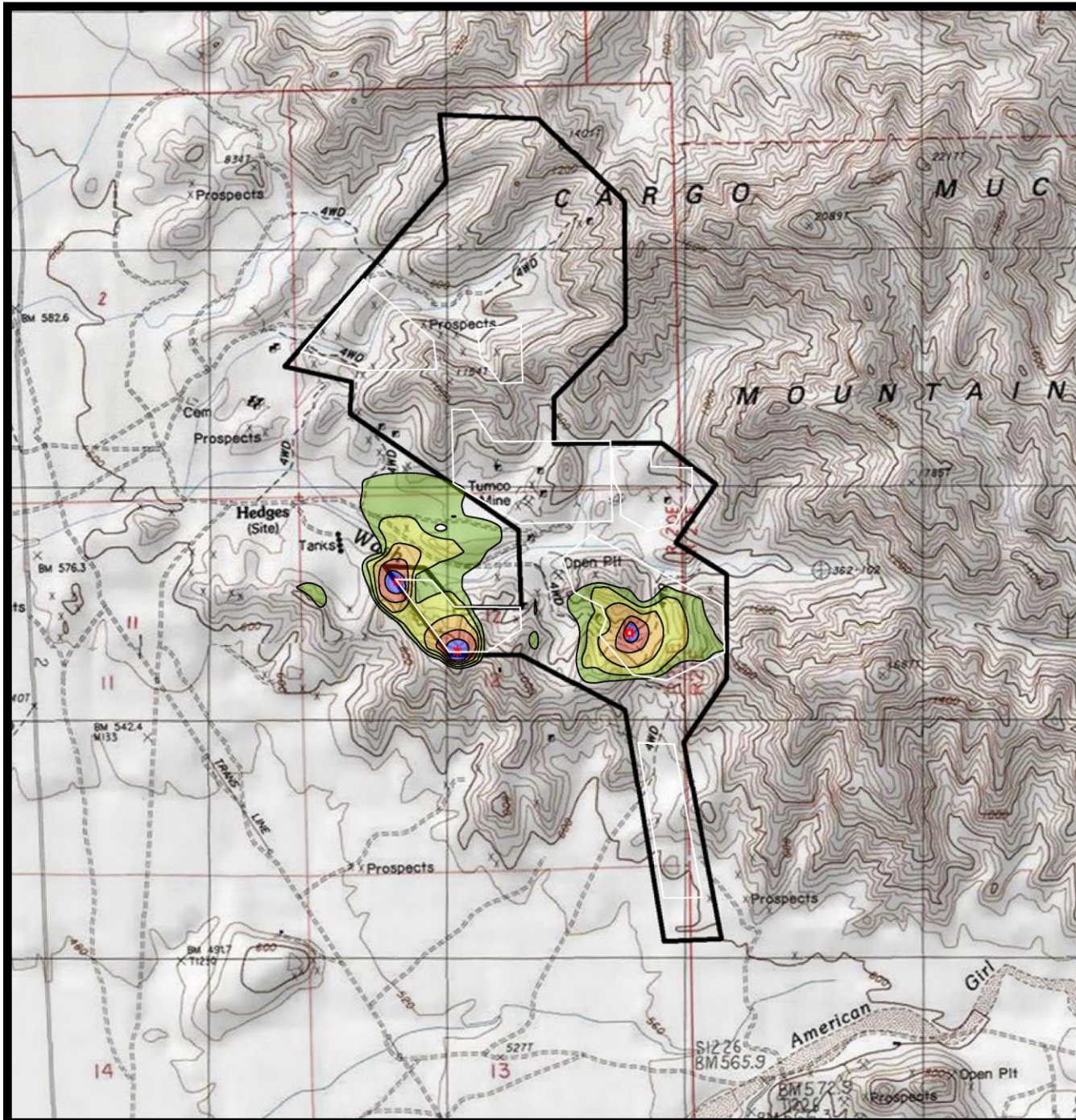


# Oro Cruz Exploration Drilling

Imperial County, California

Figure 3C

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 4 and Staging Area Equipment –  
Contours Down to Imperial County 45 dBA  $L_{eq}$   
Nighttime Standard



Noise Level, dB(A)

45 <	≤ 50
50 <	≤ 55
55 <	≤ 60
60 <	≤ 65
65 <	

### Legend

- \* Point Source
- Drill Areas

Scale 1:2000

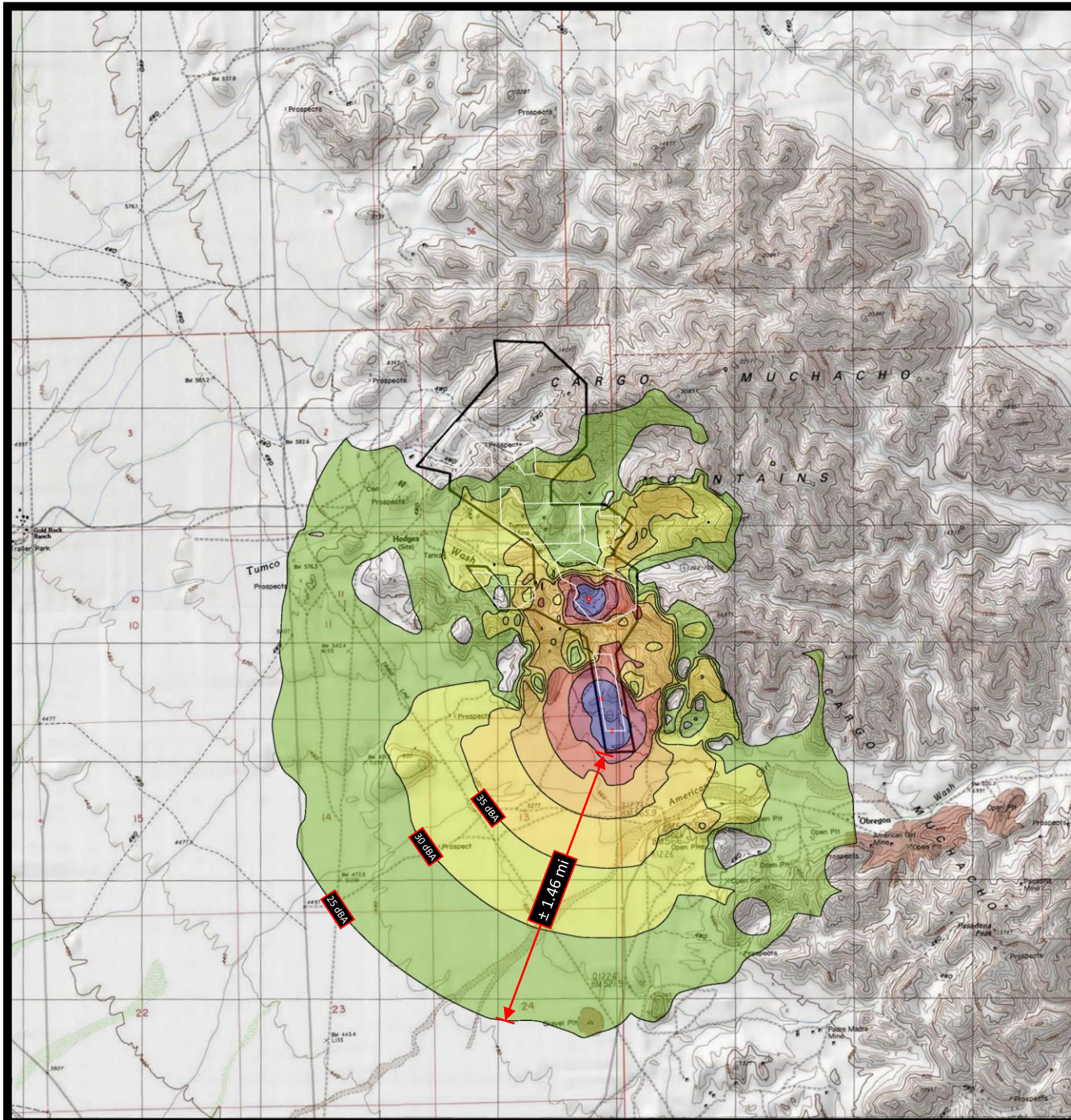


# Oro Cruz Exploration Drilling

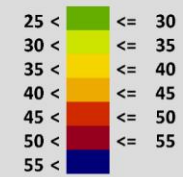
Imperial County, California

Figure 4A

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 6 and Staging Area Equipment –  
Contours Down to 25 dBA



Noise Level, dB(A)



### Legend

- Point Source
- Drill Areas

Scale 1:4000

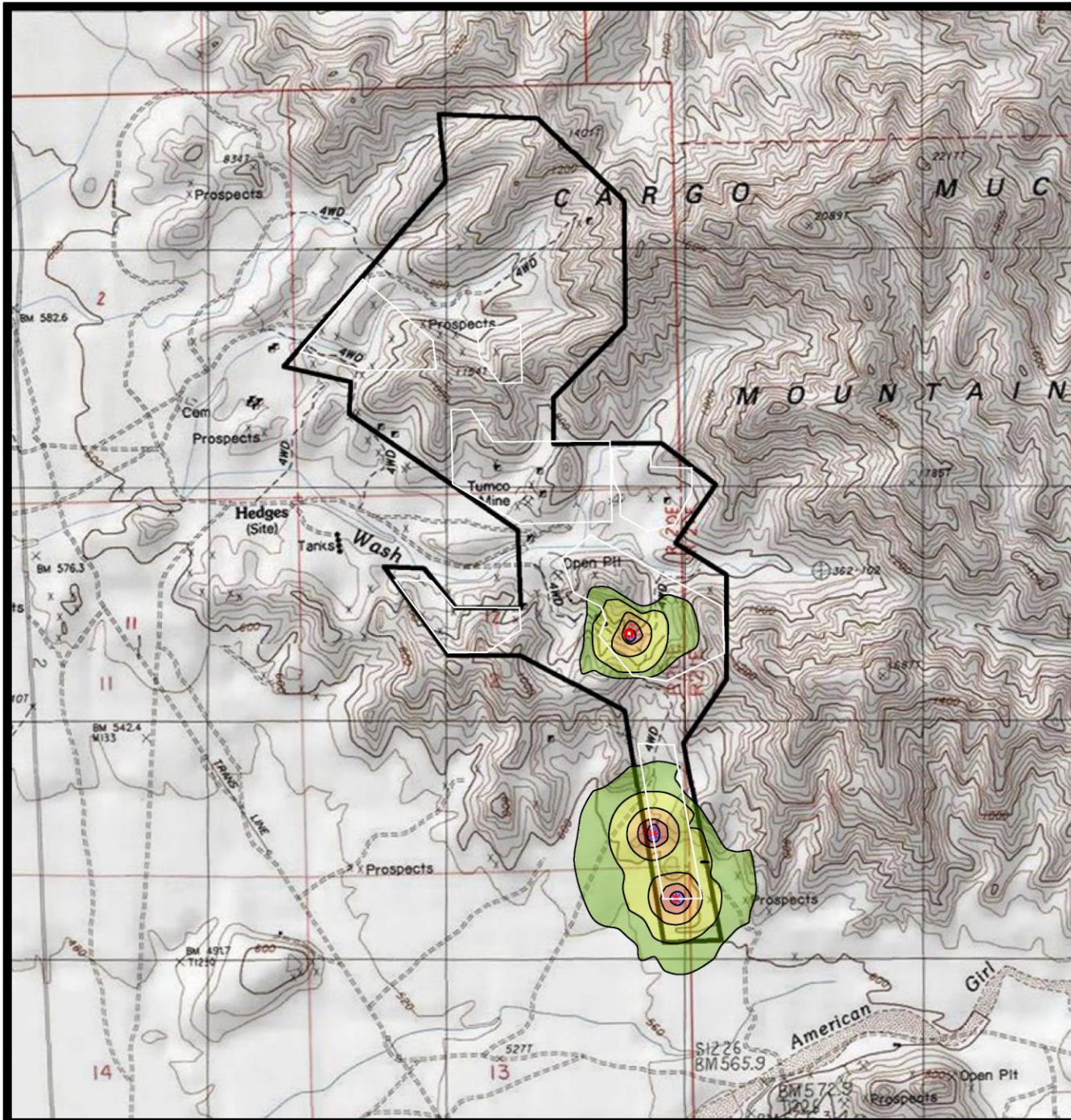


# Oro Cruz Exploration Drilling

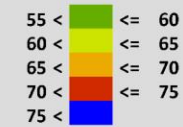
Imperial County, California

Figure 4B

Project Noise Contours (dBA L<sub>dn</sub>) –  
2 Drills in Area 6 and Staging Area Equipment –  
Contours Down to US EPA Exterior 55 dBA L<sub>dn</sub> Standard



Noise Level, dB(A)



### Legend

- \* Point Source
- Drill Areas

Scale 1:2000



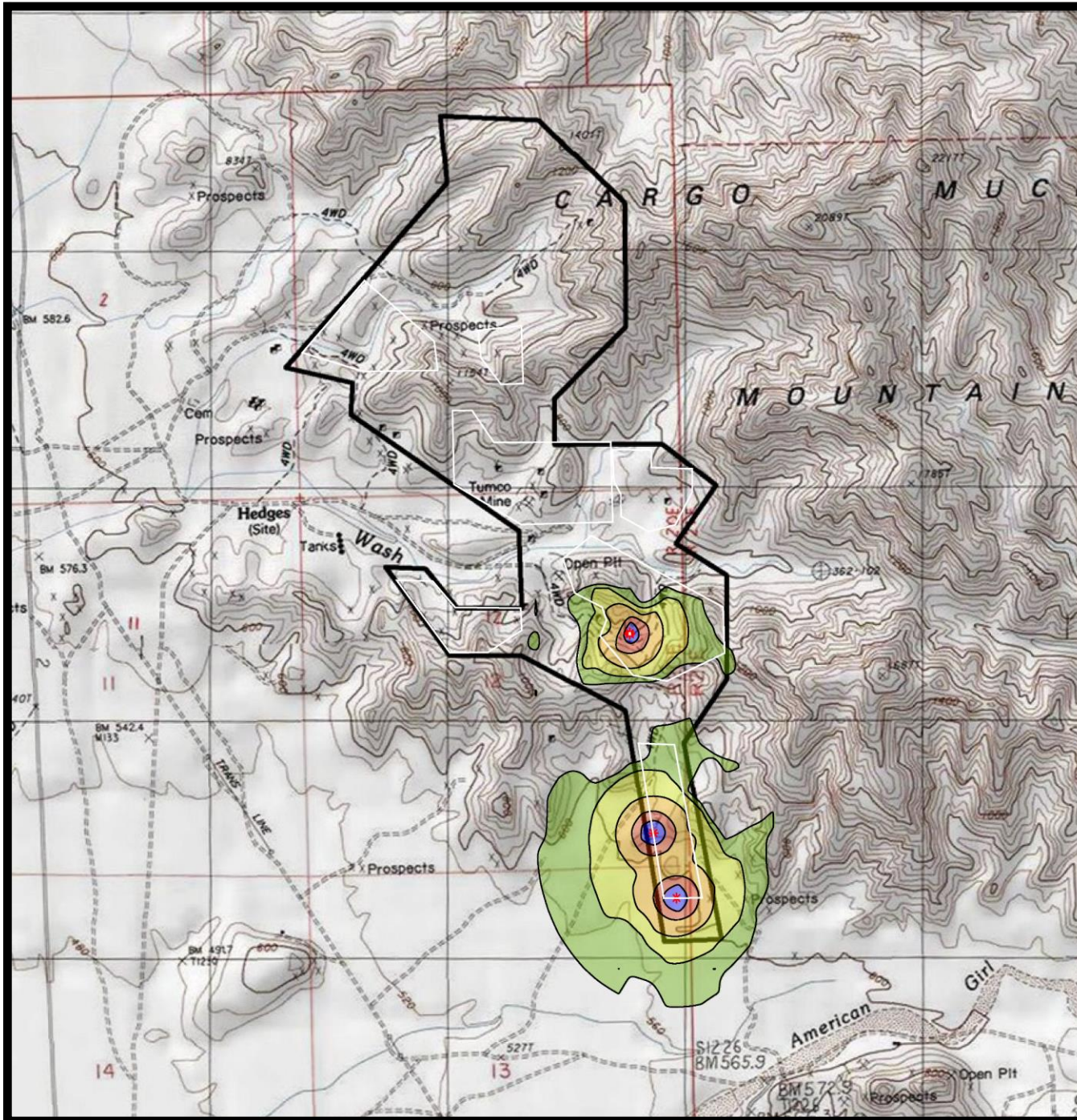


# Oro Cruz Exploration Drilling

Imperial County, California

Figure 4C

Project Noise Contours (dBA  $L_{eq}$ ) –  
2 Drills in Area 6 and Staging Area Equipment –  
Contours Down to Imperial County 45 dBA  $L_{eq}$   
Nighttime Standard



Noise Level, dB(A)

45 <	≤ 50
50 <	≤ 55
55 <	≤ 60
60 <	≤ 65
65 <	

### Legend

- \* Point Source
- Drill Areas

Scale 1:2000





**Stantec Consulting Services Inc.**  
1165 East Jennings Way, Suite 101  
Elko, NV 89801-7977

## Memorandum

**To:** Mayra Martinez, Bureau of Land Management  
Carrie Sahagun, Bureau of Land Management  
Grant Day, Bureau of Land Management

**From:** Shelby Hockaday, Stantec Consulting Services Inc.

**Date:** April 15, 2022

**Project:** Oro Cruz Exploration Project  
Stantec Project Number 203722070

**Subject:** Viewshed Analysis for Indirect Visual Area of Potential Effect

---

This memorandum transmits the viewshed analysis results for the SMP Gold Corp.'s (SMP) Oro Cruz Exploration Project (Project).

### INTRODUCTION

Stantec Consulting Services Inc. (Stantec) was contracted by SMP to conduct a viewshed analysis following conversations with the Bureau of Land Management (BLM) El Centro Field Office to determine an appropriate Indirect Visual Area of Potential Effect (Indirect Visual APE) for a cultural resources and visual resources analysis in the anticipated Environmental Assessment (EA) for the Project under the National Environmental Policy Act (NEPA). Scenic quality is a measure of the visual appeal of a parcel of land. Section 102(a)(8) of the Federal Land Policy and Management Act (FLPMA) placed an emphasis on the protection of the quality of scenic resources on public lands. Similarly, Section 101(b) of NEPA requires that measures be taken to ensure that aesthetically pleasing surroundings be retained for all Americans. Additionally, Section 106 of the National Historic Preservation Act (NHPA) of 1966 (54 United States Code 300101 et seq.), guides that an Indirect Visual APE should be delineated and should include all locations from which elements of the proposed Project may cause adverse visible effects to cultural or historic properties.

The Indirect Visual APE developed for the Project is anticipated to be included in the pending Class III Inventory report that is currently being prepared as required under Section 106 of the NHPA. The Indirect Visual APE would also be used for analysis of cultural and visual resources in the respective Affected Environment and Environmental Consequences sections of the anticipated EA.

The Project area would include a total of approximately 626 acres on public lands administered by the BLM El Centro Field Office with anticipated total surface disturbance from exploratory drilling activities of up to 20.54 acres. The Project proposes up to 65 temporary drilling locations within the Project area. The Project would have a life expectancy of up to two years, with drilling occurring over up to two weeks at each of the 65 proposed drill sites prior to moving to a new drill site location. There would only be two drill rigs in operation at a time within the Project area, that would operate on a 12- or 24-hour-per-day schedule, with potential for both drill rigs operating within one Drill Area (SMP, 2021).

## VISUAL RESOURCES MANAGEMENT DESIGNATION

According to the BLM H-1601-1 Land Use Planning Handbook, the BLM manages resource uses and management activities consistent with the VRM objectives established in the land use plan (BLM, 2005) in compliance with the NEPA and FLPMA objectives for scenic quality. The VRM objectives designate classes for BLM-administered lands in order to identify and evaluate scenic values to determine the appropriate levels of management during land use planning. The BLM identifies four VRM Classes (I through IV) with specific management descriptions for each class. The Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment and Final Environmental Impact Statement (BLM, 2015) assigned VRM classes ranging from Class I to Class IV to all BLM lands in the planning area based on BLM H-1601-1. The majority of the Project area falls within VRM Class III, with a small southern portion of Drill Area 6 being VRM Class IV (**Figure 1**). VRM Class III allows for moderate changes to the characteristic landscape to partially retain the existing character of the landscape, while VRM Class IV allows for major changes to the characteristic landscape to provide for management activities that require such.

## METHODOLOGY

Stantec conducted the viewshed analysis through the use of topographic maps, aerial imagery, the geographic information system (GIS) ArcGIS software, publicly available Digital Elevation Model surface data, and the proposed Project's layout. The viewshed analysis was run using the ArcGIS Viewshed Tool from a total of seven points derived from the central locations of the Project's seven proposed drill areas (**Figure 1**). The analysis incorporated the views 40 feet high from the drill area centroids, which is the tallest height of drilling equipment proposed for use at the Project, to determine the overall visibility of the surrounding area where alternations in the character or use of historic properties may occur, facing all cardinal directions (north, south, east, and west).

Stantec created a six-mile buffer around the Project area to determine the visibility within such area where cultural and/or visual resources may be impacted by structures in the drill areas, based on the areas determined to be visible from all directions from the seven drill area centroids. Stantec then created digital elevation profiles in ArcGIS Pro at a distance of six miles utilizing one to two view directions from each drill area centroid, depending on the topography and the potential visibility. Stantec interpolated topography along the view directions using a 10-meter Digital Elevation Model (DEM) as the elevation grid to create a three-dimensional line output, which allowed for development of DEM elevation profiles, shown in **Attachment 1**.

The viewshed results from the elevation profiles were then used to delineate the Indirect Visual APE based on the potential visibility of the Project potentially indirectly affecting cultural/historic properties of concern. The proposed Indirect Visual APE took into account the scale and nature of the undertaking relative to cultural/historic properties of concern and accounted for site-specific variables such as topography and height of the equipment proposed for the Project.

## RESULTS OF THE VIEWSHED ANALYSIS

The elevation profiles included in **Attachment 1** show the cross sections of topography from each drill area centroid from one to two directions, depending on topography and potential visibility in the area. Elevations are shown along the y-axis of the profile charts, wherein the height of the tallest proposed drilling equipment, 40 feet, may appear as a structure up to 40 feet above the surface elevation shown. The majority of the drilling areas would not be visible to the casual viewer; however, the southwestern view from Drill Area 2, the view from Drill Area 3, the northwestern view from Drill Area 4, the northwestern view from Drill Area 5, and the southwestern view from Drill Area 6 showed the potential for a structure 40 feet high to be visible from the base elevation.

Stantec used Google Earth imagery to analyze the three-dimensional view one mile away from the drill areas where the elevation profiles showed potential visibility. These images are included in **Attachment 2**. Based on the results of the viewshed analysis, the elevation profiles, and the desktop analysis of the aerial imagery ground views of the potentially visible drill areas, a 40-foot drill rig line against the existing landscape would have weak degree of contrast to form, color, line and texture elements of the existing background and would not be noticeable to the casual viewer. Based on BLM Manual 8400-Visual Resource Management, the drill pad area would be in the background distance zone where the texture and form of individual elements are no longer readily apparent in the landscape, appearing only in patterns or outlines (BLM, 1984). The proposed drill rigs may add additional form and lines in the background zone, but they would not result in a strong degree of contrast and would likely be a weak, indistinct line element in the viewshed. Impacts to the existing landscape and scenic quality as a result of exploratory drilling activities would be temporary in nature and would not be stationary throughout the one-to-two-year life of the Project or following reclamation given the nature of the proposed approximately two-week drilling campaign at each drill site.

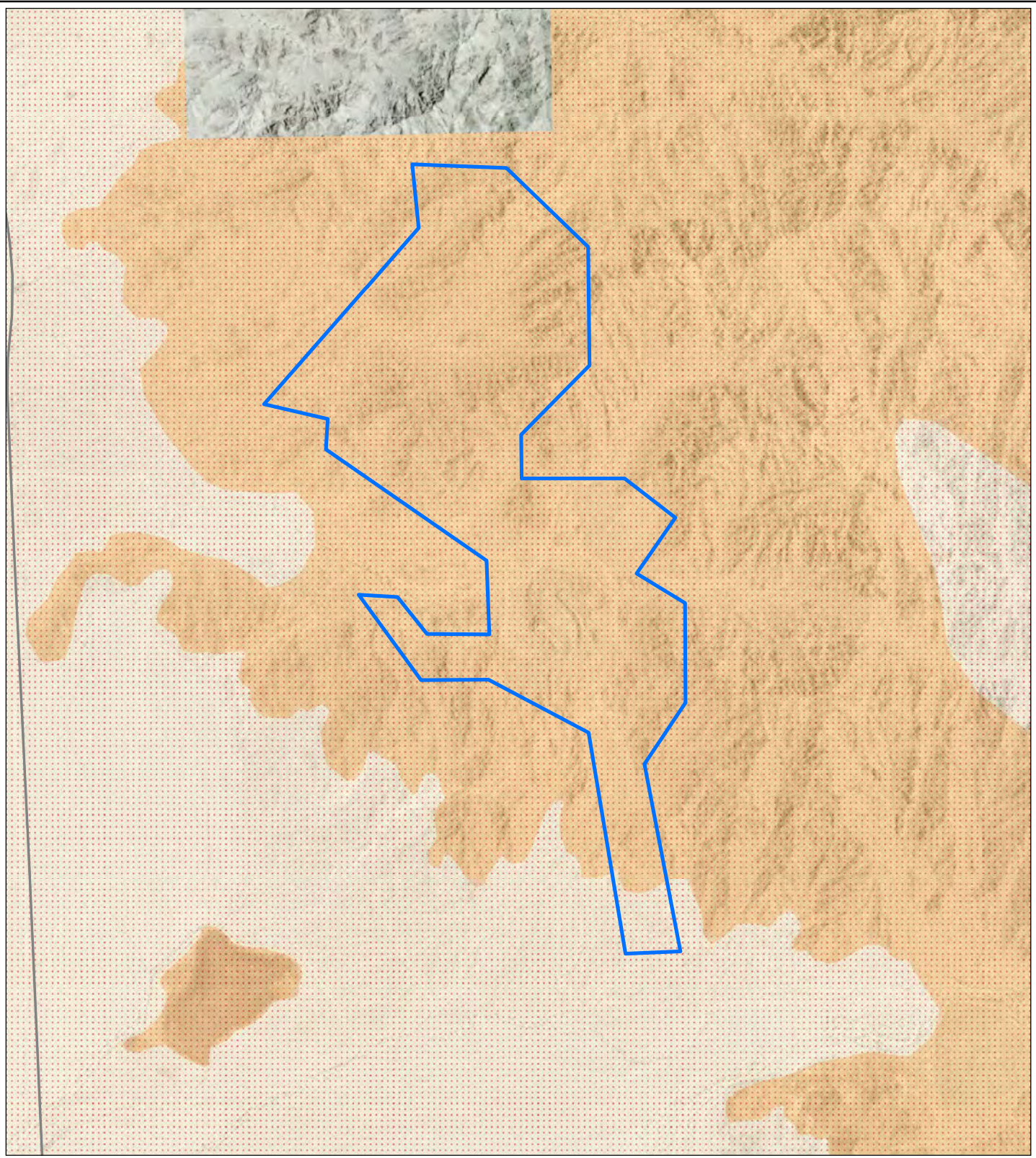
The Indirect Visual APE is shown on **Figure 2**, which incorporates the viewshed within a one-mile buffer of the Project area. The one-mile buffer was determined to be an appropriate distance to assess indirect visual impacts to cultural and historic properties of concern in the area, including the Tumco Historic Mine (**Figure 2**), which has been identified as a cultural property of concern in relation to potential Project impacts. The Indirect Visual APE will also be used as the visual resources area of analysis in the Project's anticipated EA.

## REFERENCES


- Bureau of Land Management (BLM). 1984. Manual 8400-Visual Resource Management. United States Department of the Interior, Bureau of Land Management, Washington, D.C. April 5, 1984.
- Bureau of Land Management (BLM). 2005. Manual H-1601-1 Land Use Planning Handbook. United States Department of the Interior, Bureau of Land Management. March 11, 2005.
- Bureau of Land Management (BLM). 2015. Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment and Final Environmental Impact Statement. October 2015. Available at: <https://eplanning.blm.gov/eplanning-ui/project/66459/570>.
- SMP Gold Corp. (SMP). 2021. Existing Oro Cruz Pit Area Exploration Plan of Operations. Submitted to the Bureau of Land Management, El Centro Field Office September 2020. BLM Case File Number CACA-059124. Revised December 2020. Revised August 2021. Revised September 2021. Revised October 2021.

## **FIGURES**


V:\2037\Active\2037220703\_data\gis\_cad\gms\mxd\Reviewed\_Figure\_1\_VRM\_Classes.mxd Revised: 2022-03-03 By: chjplmson






**Legend**


 Oro Cruz Plan Boundary

**VRI Class Code**

 VRI Class III

 VRI Class IV

  
  
1 in = 2,000 feet



**Stantec**

Imperial County, CA  
NAD 1983 UTM Zone 11N

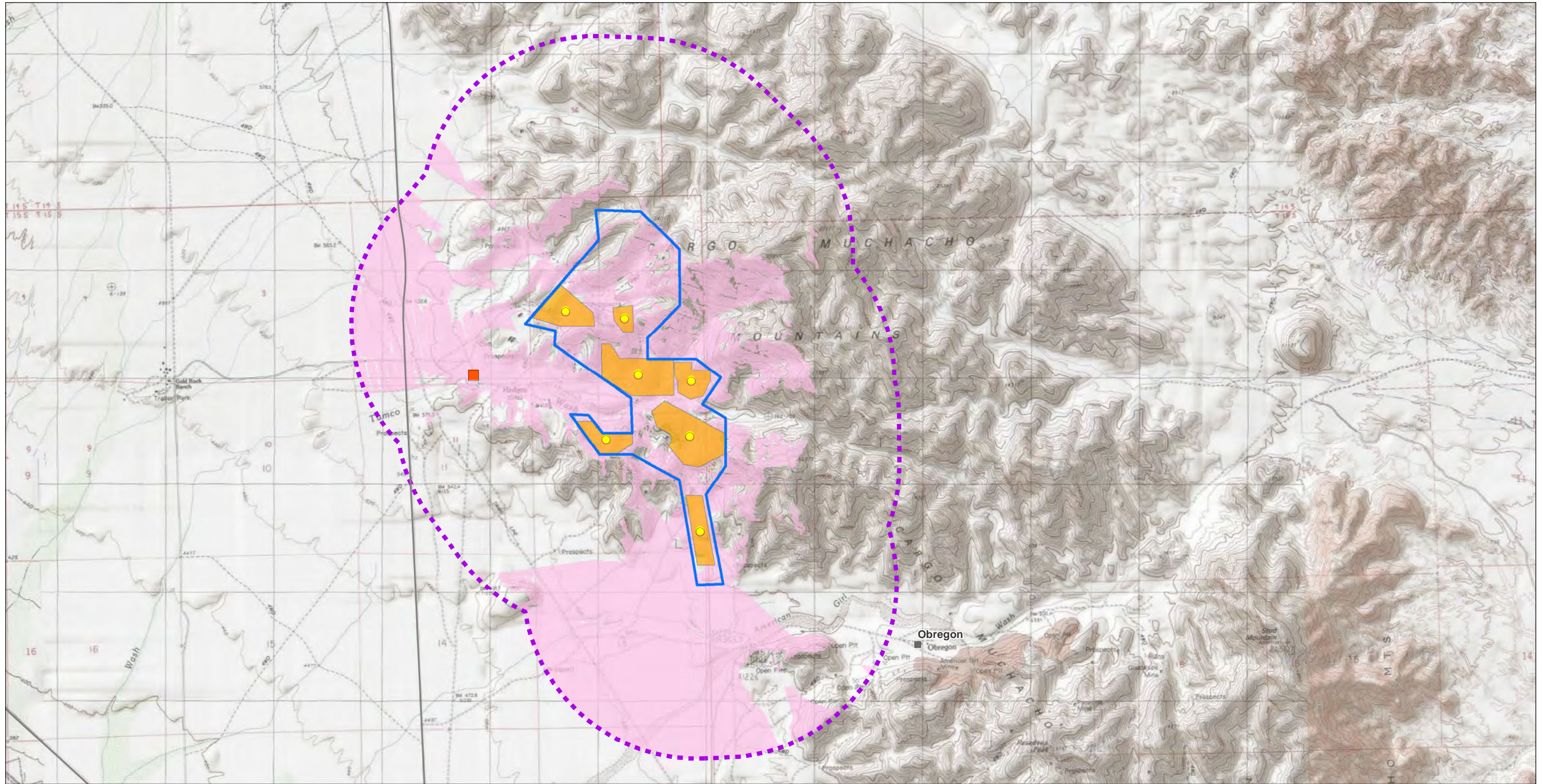
DRAWN BY: CJ	1ST REVIEW: JT	2ND REVIEW: JL
DATE: 3/3/2022		PROJECT NO: 203722070

SMP GOLD CORP.  
ORO CRUZ MINE

**Figure 1**  
**VRM Classes Within the Project Area**

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



V:\2037\Active\203722070\03\_data\gis\_cad\figs\mxd\Views\Figure\_2\_Viewshed.mxd Revised: 2022-03-03 By: chiphanson

- Legend**
- Drill Hole Area Centroids
  - Tumco Historic Mine
  - 1-Mile Buffer
  - Oro Cruz Plan Boundary
  - Drill Hole Areas
  - Indirect Visual APE

1 in = 3,000 feet

SMP GOLD CORP.  
ORO CRUZ MINE

Imperial County, CA  
NAD 1983 UTM Zone 11N

DRAWN BY: CJ	1ST REVIEW: BT	2ND REVIEW: SH
DATE: 3/3/2022		PROJECT NO: 203722070

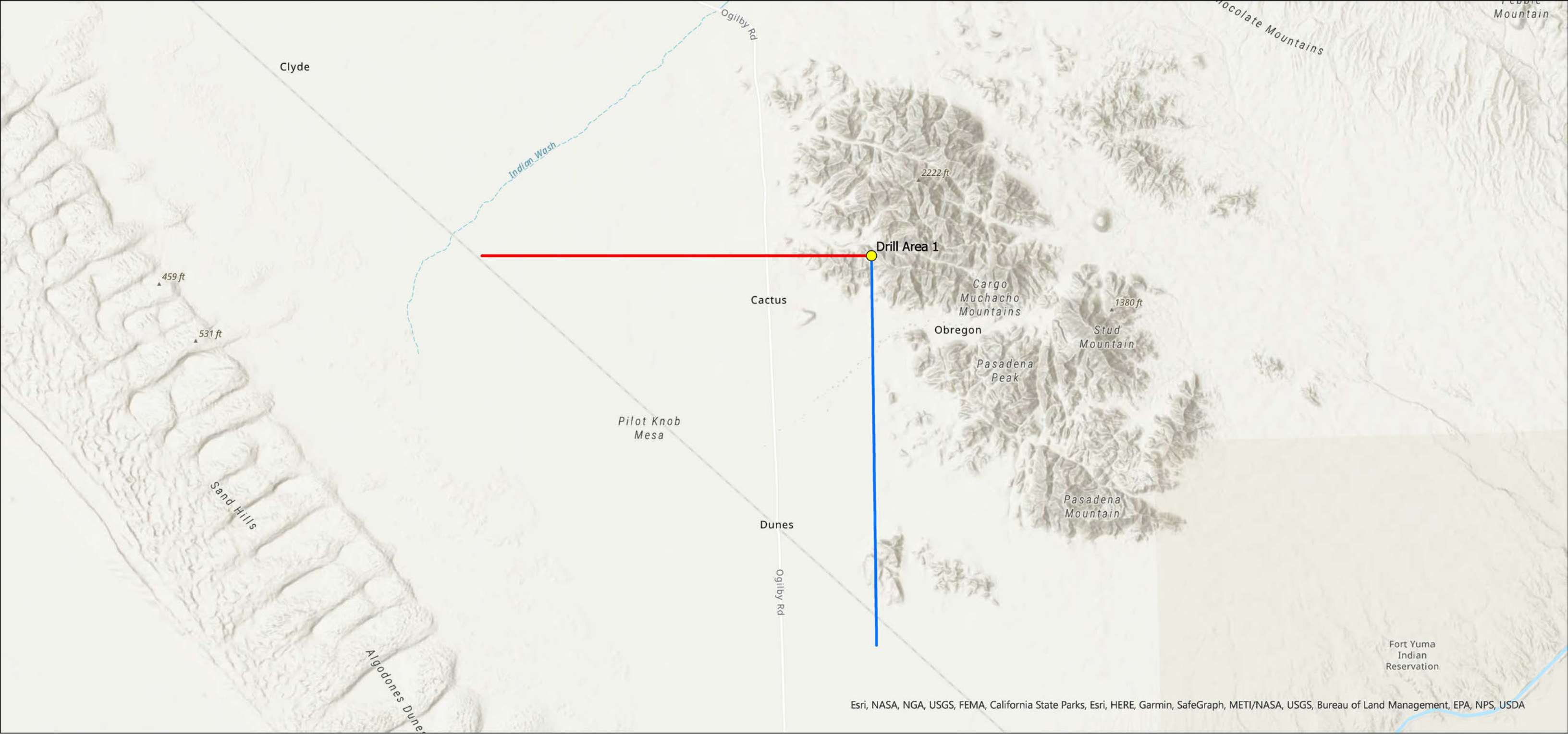
**Figure 2**  
**Viewshed from All Drill Areas**

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

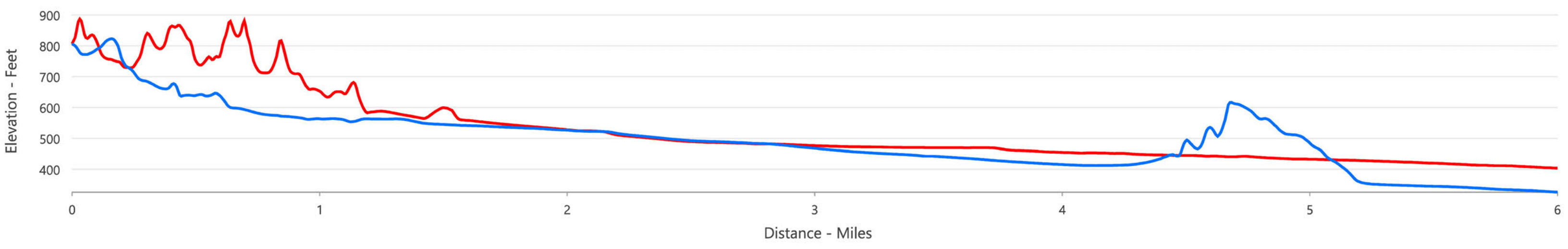
Service Layer Credits: Copyright © 2013 National Geographic Society, iCloud, Source: Esri, Gamma, USGS, NPS

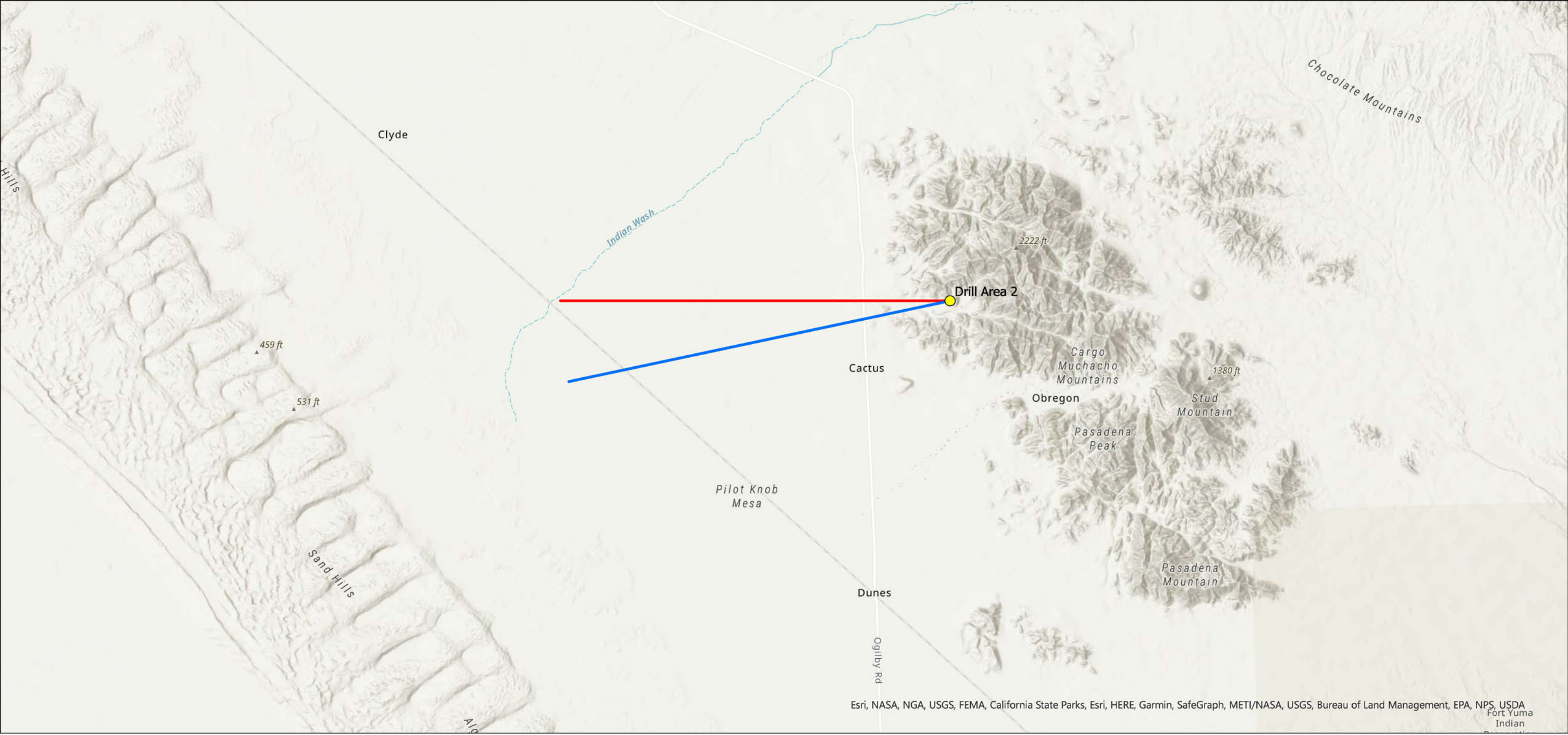
# ATTACHMENT 1





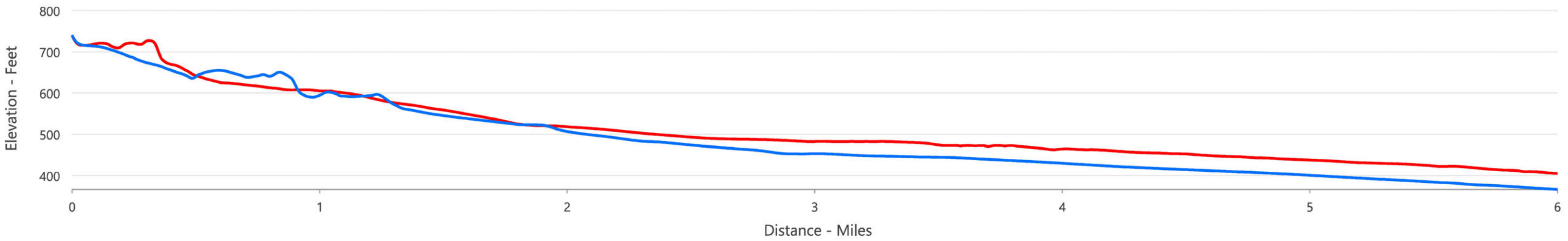
Drill Area 1

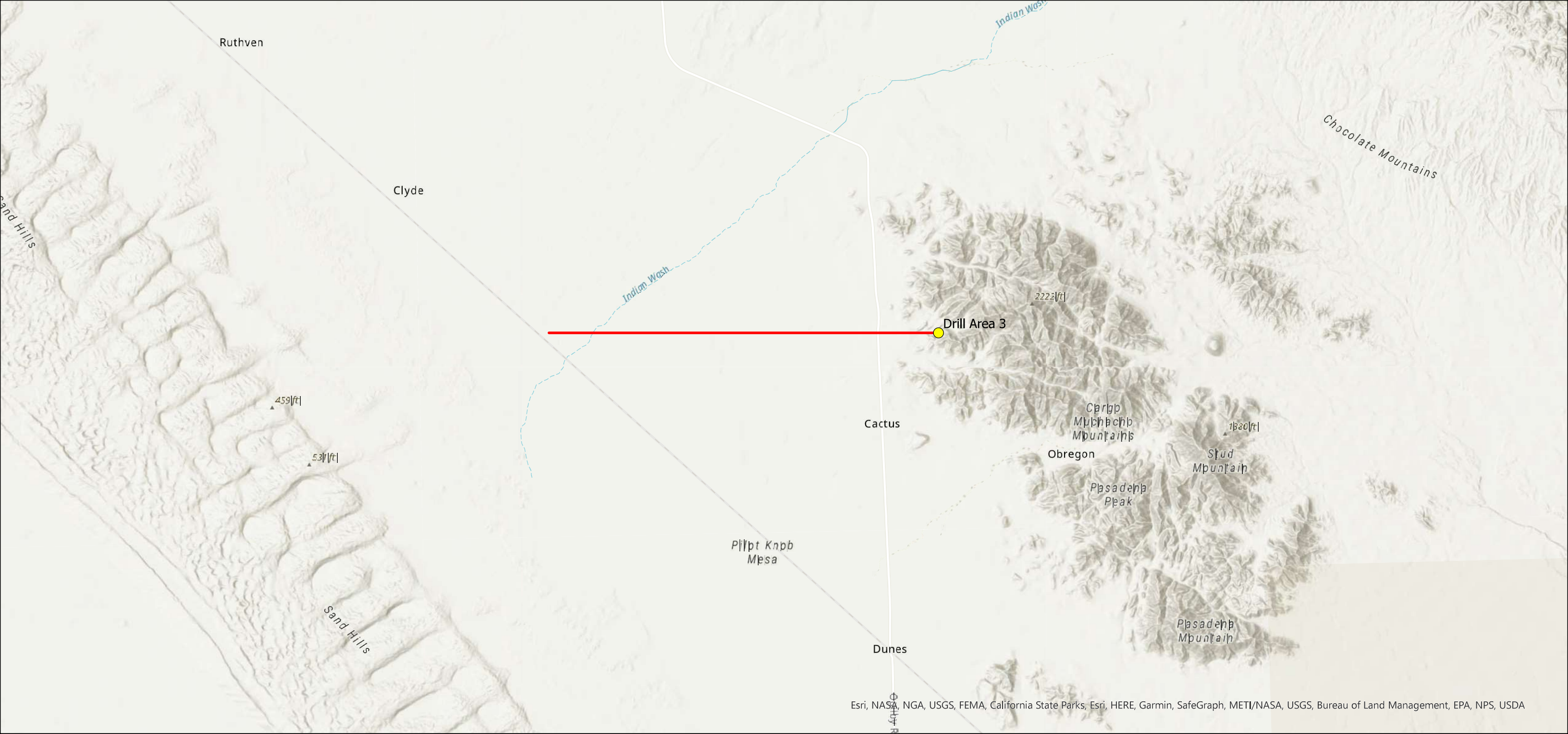




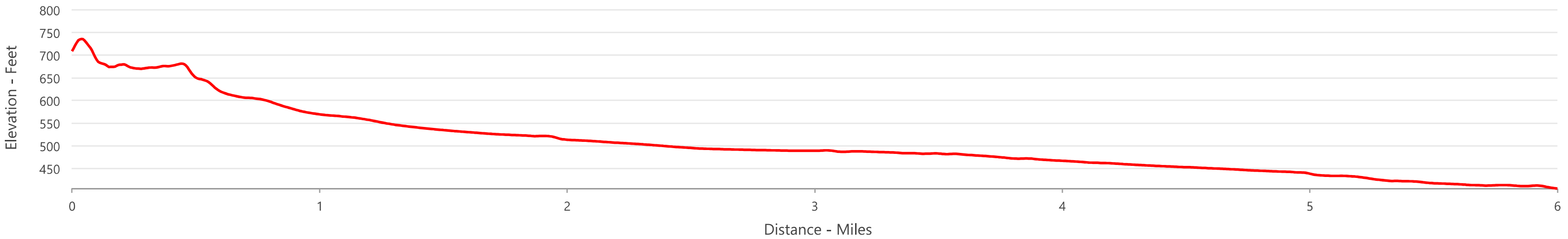
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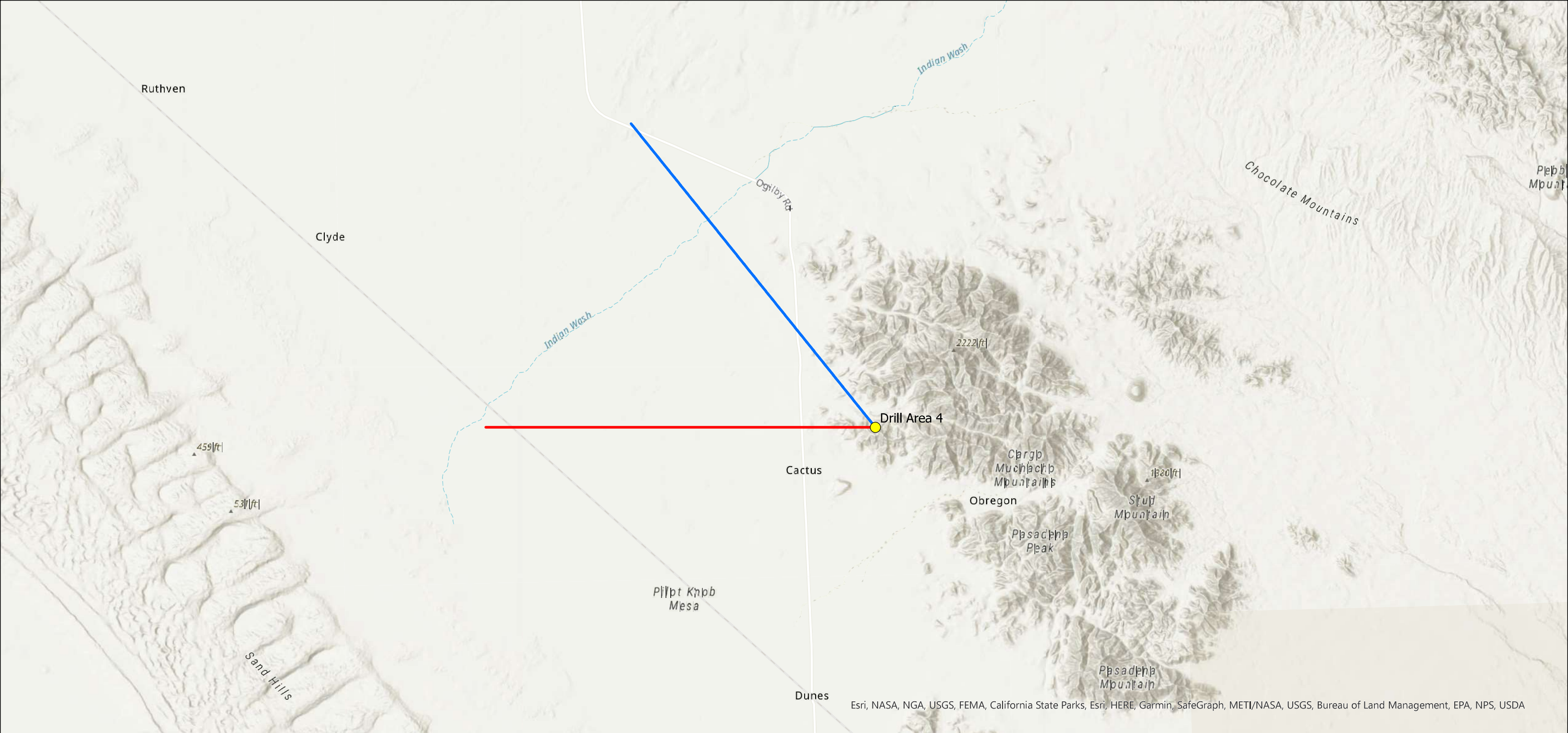
Drill Area 2





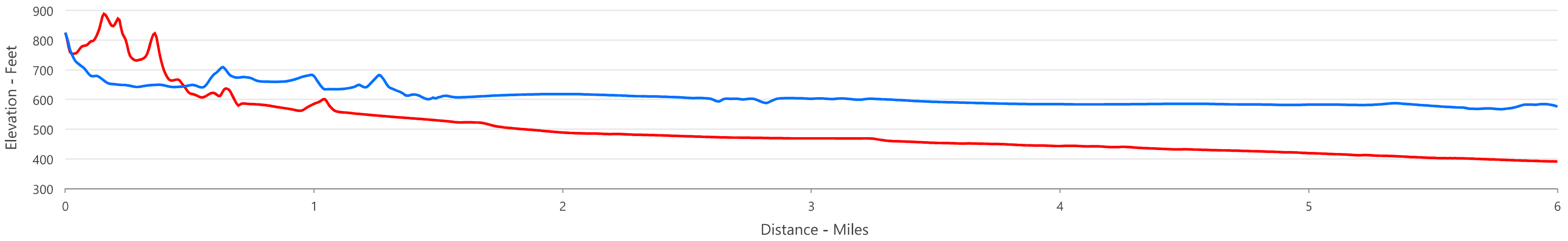
Drill Area 3

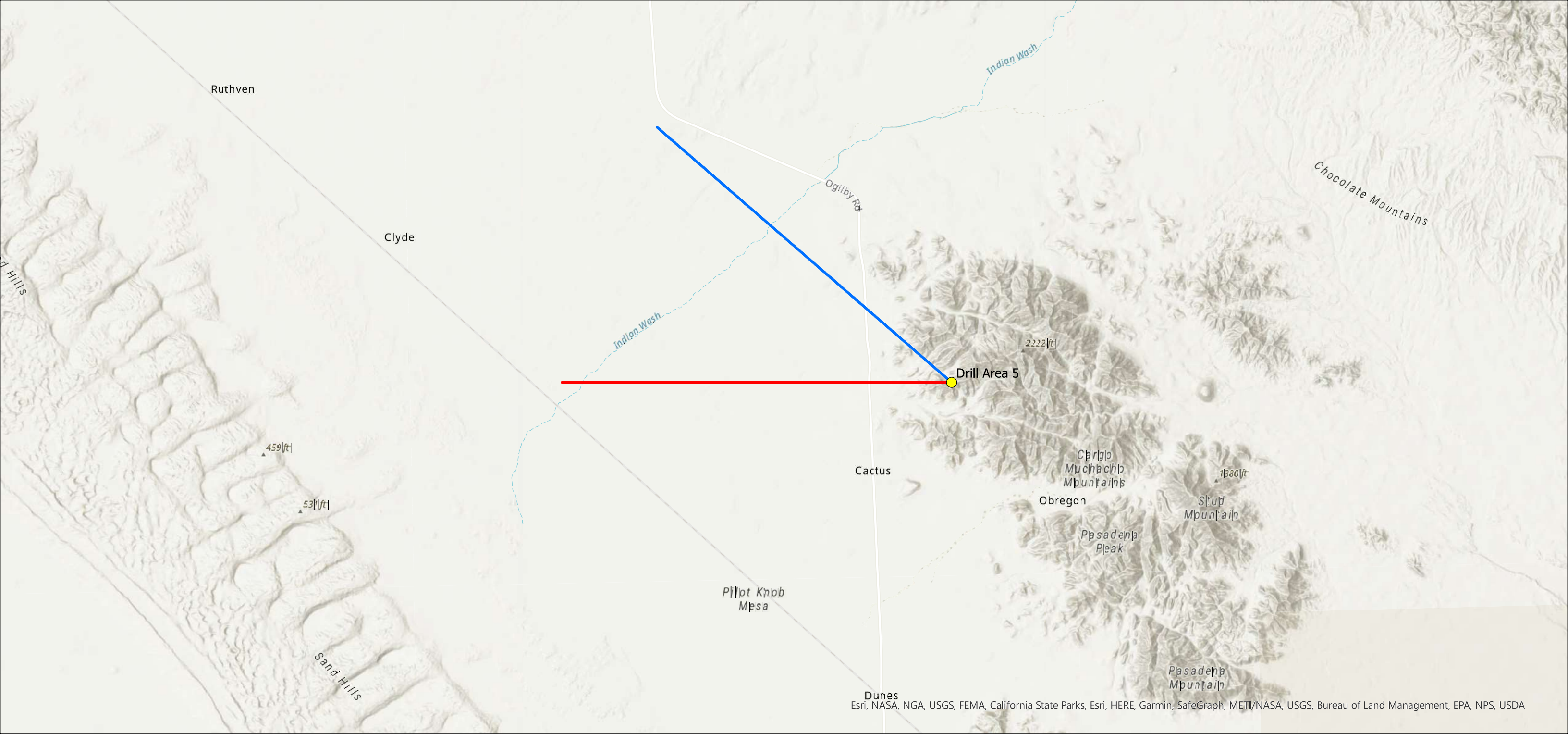




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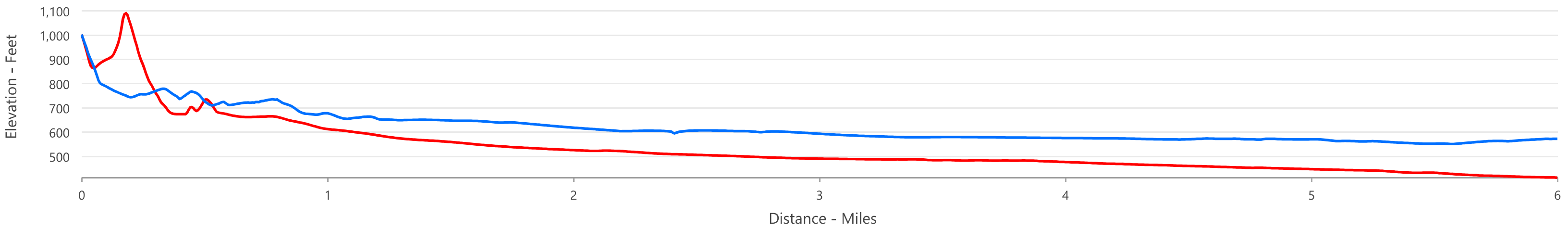
Drill Area 4

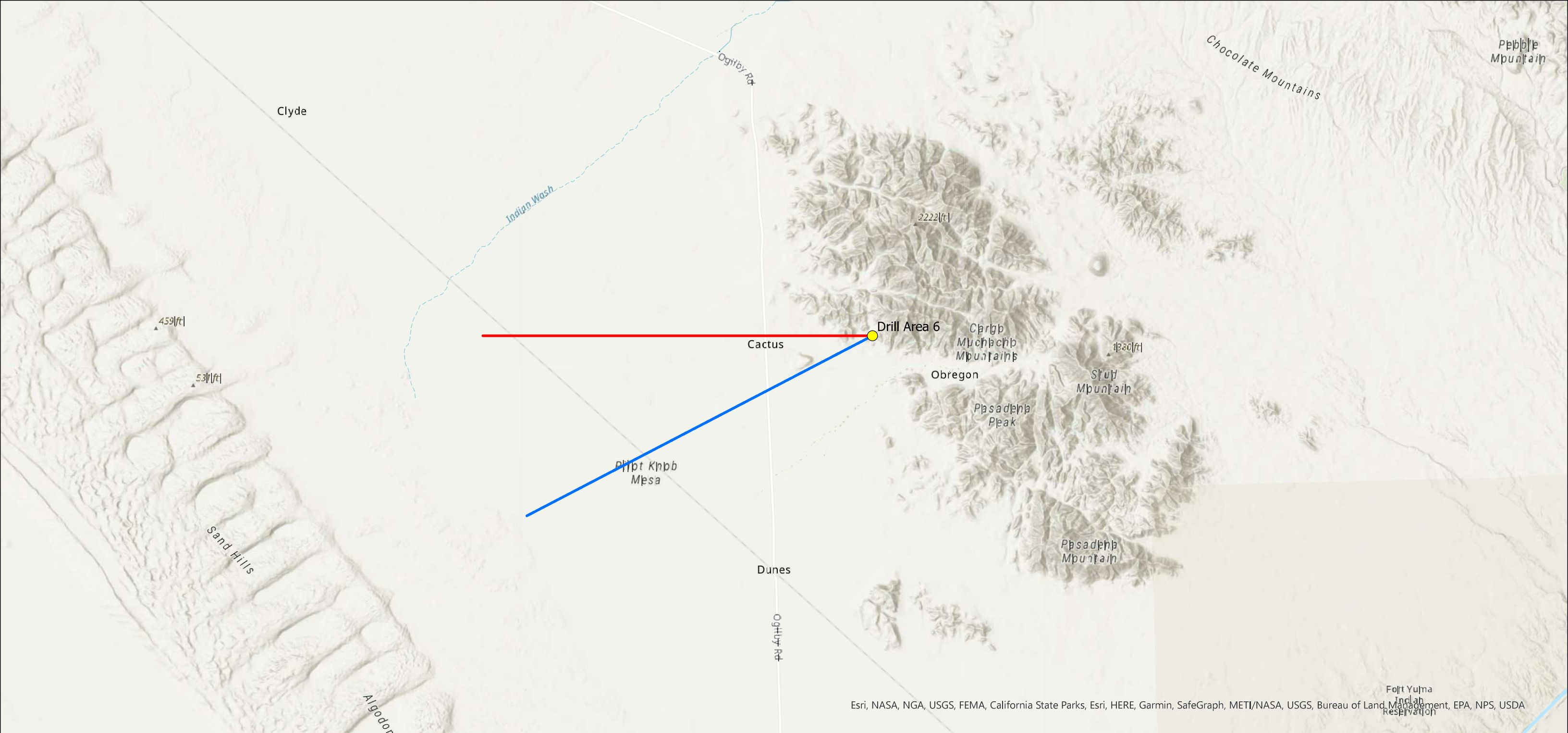




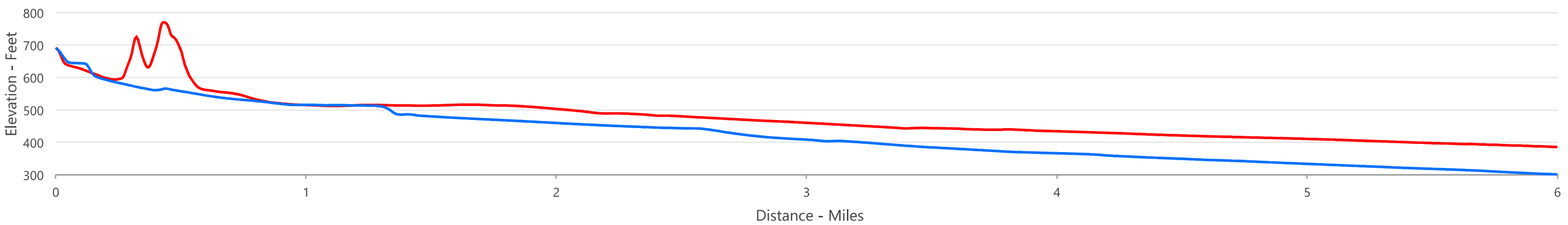
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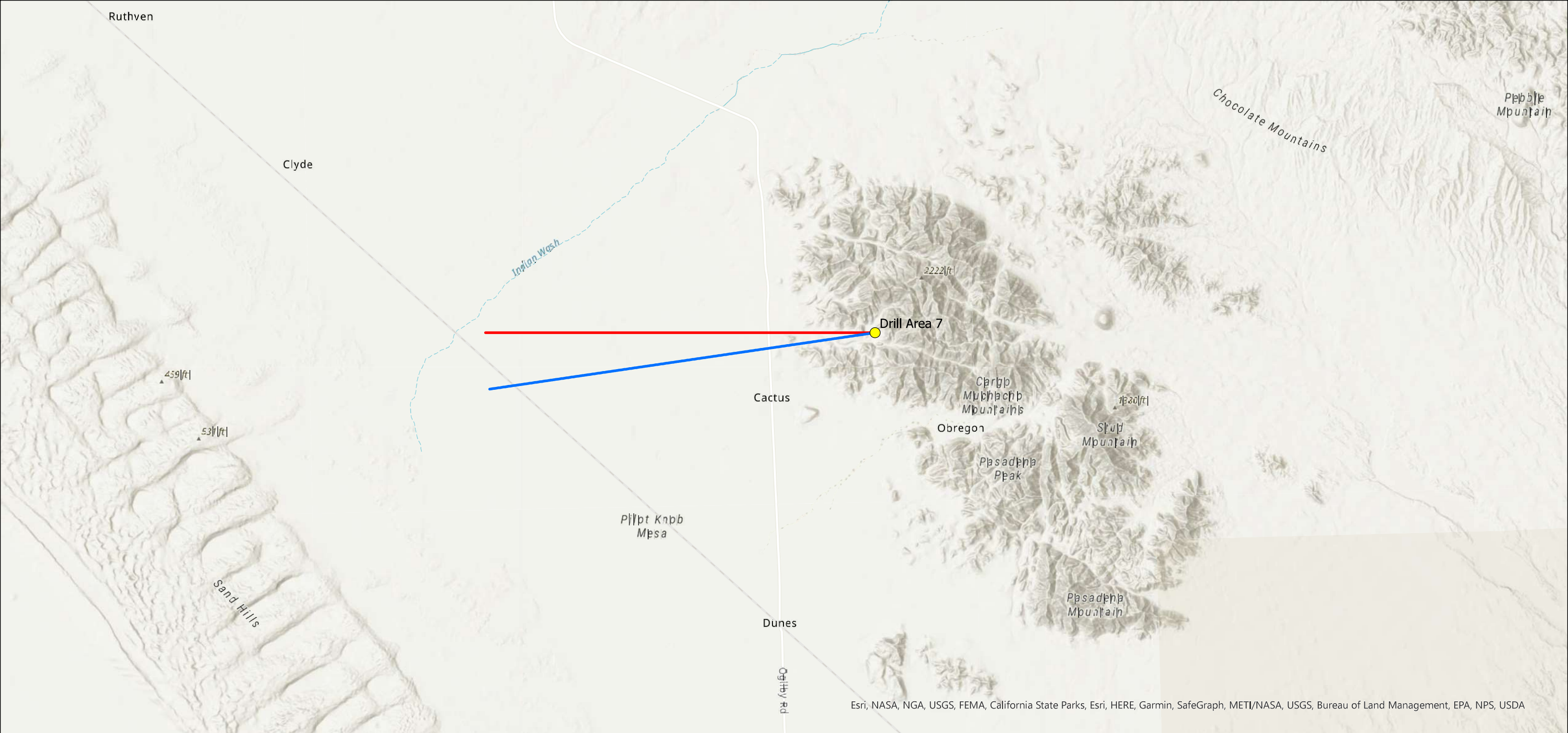
### Drill Area 5



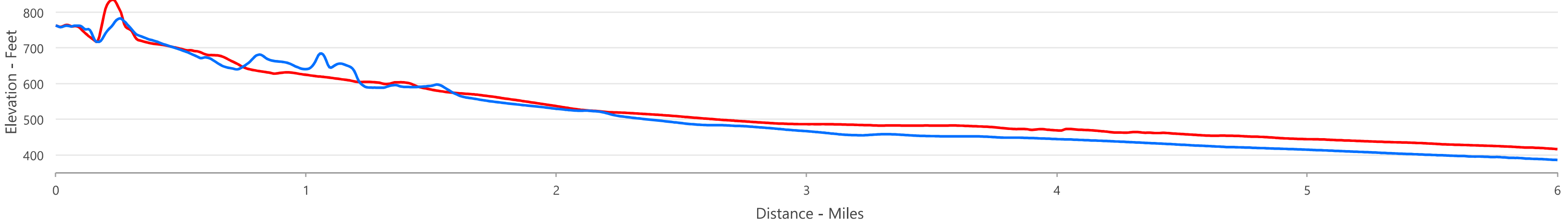


Drill Area 6





Drill Area 7



## **ATTACHMENT 2**



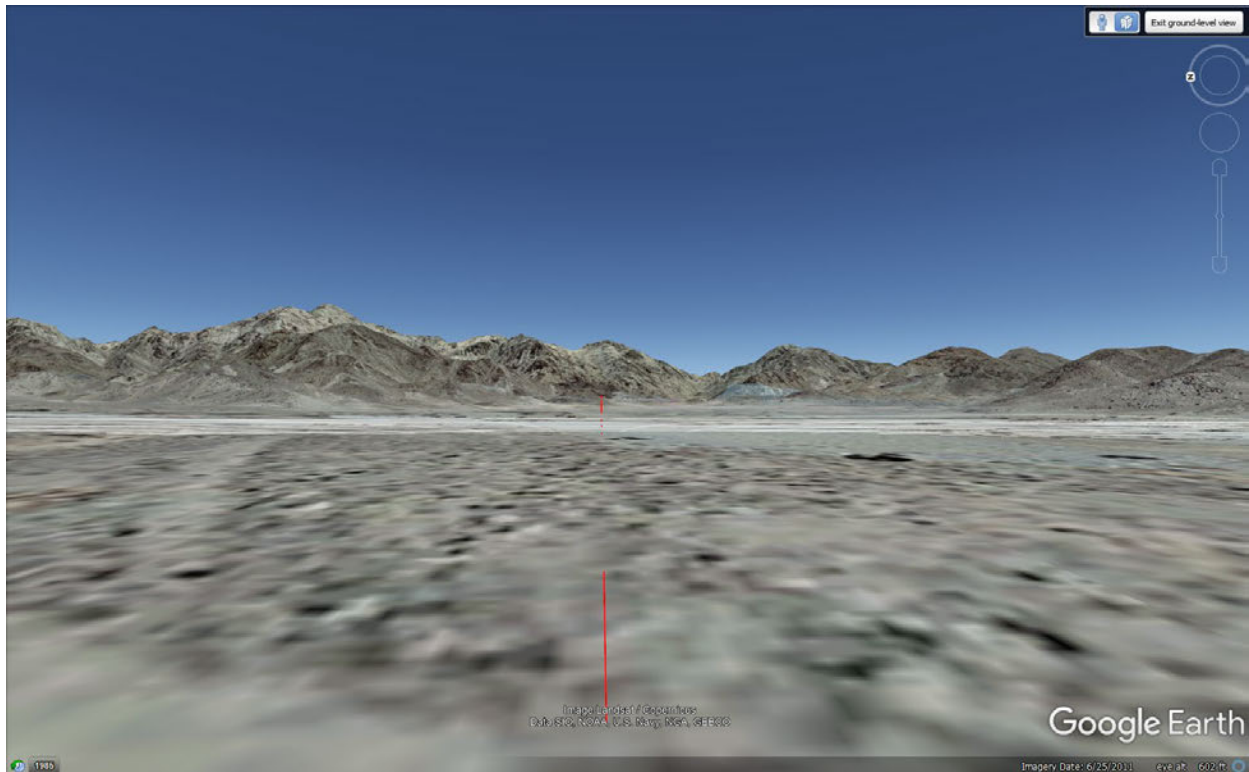
**Attachment 2: Three-Dimensional Photos of Potentially Visible Drill Areas**

Drill Area 2..... 2  
Drill Area 3..... 2  
Drill Area 4..... 3  
Drill Area 5..... 3  
Drill Area 6..... 4

**Photo Legend**

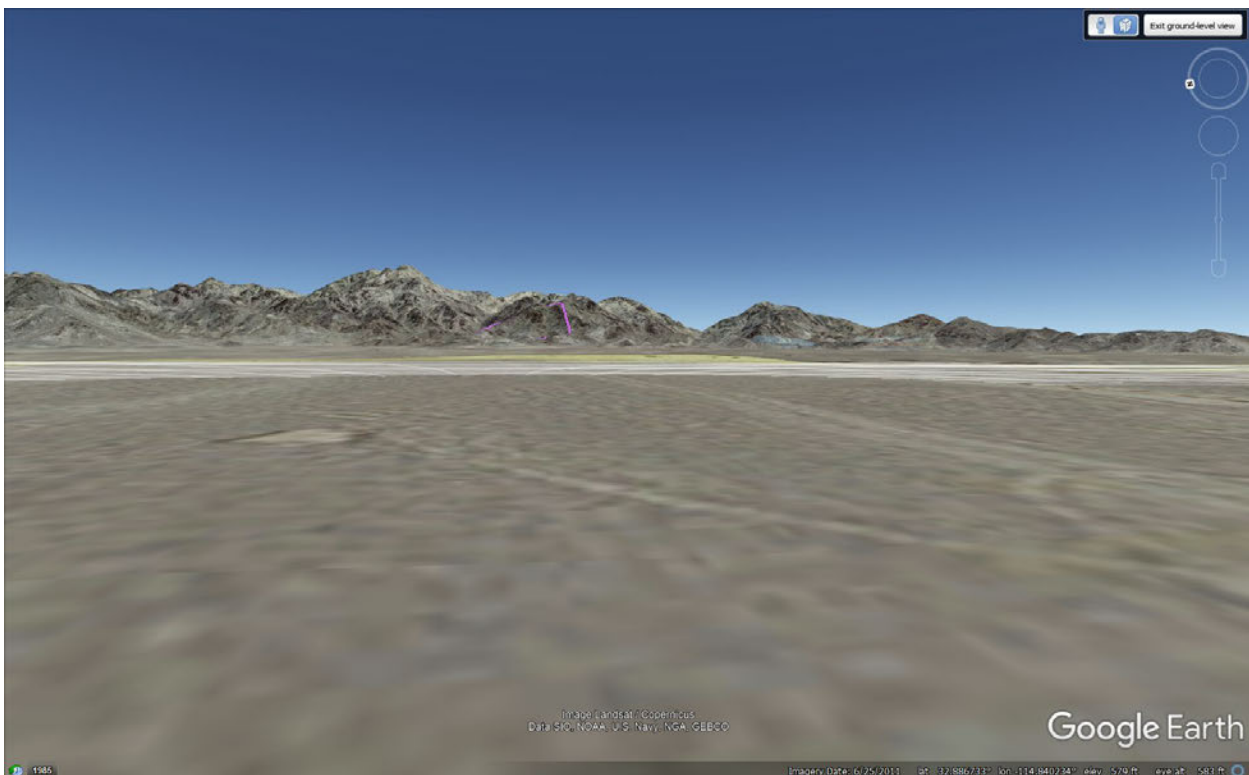
Red, straight lines visible on the photos that follow represent the viewing line facing the Drill Areas from the direction in the elevation profiles noted in the photo captions. These lines are not visible in all photos due to variations in satellite imagery and topography of the area which may cut off the line layer used in Google Earth to capture these photos.

Purple, uneven lines visible on the photos that follow represent the portions of the Drill Area boundaries that are visible from the viewing point facing the Drill Areas. The Drill Area boundaries are not visible in all photos due to variations in the topography that exist in comparison with the Drill Area boundary layer used in Google Earth to capture these photos.



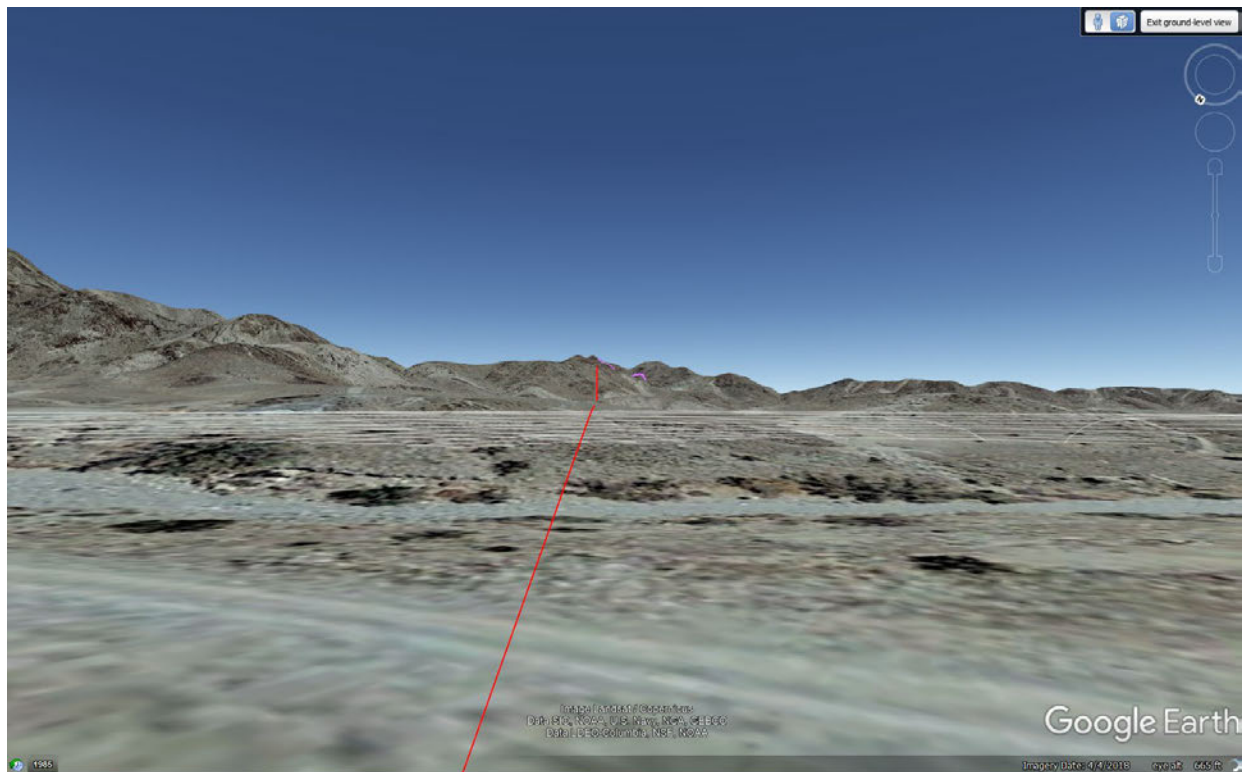
### Drill Area 2

View from the southwest (blue line of the elevation profile in Attachment 1)



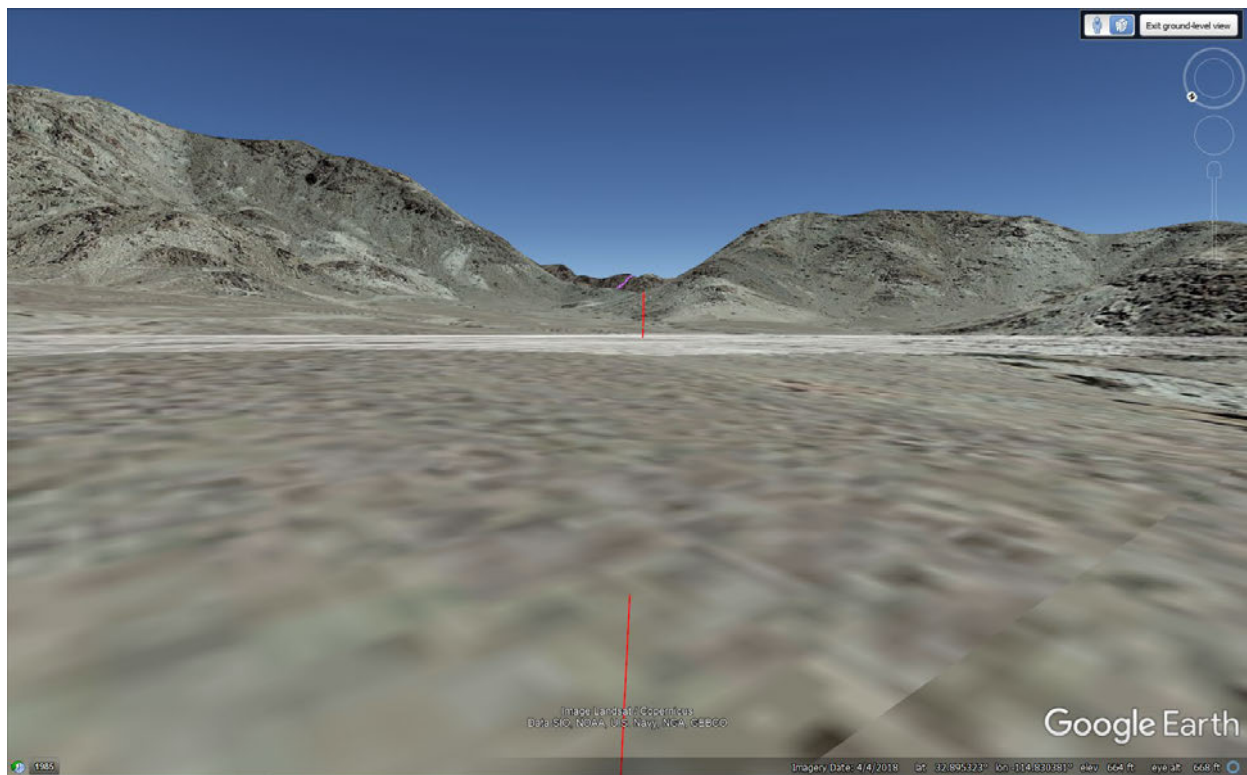
### Drill Area 3

View from the west (red line of the elevation profile in Attachment 1)



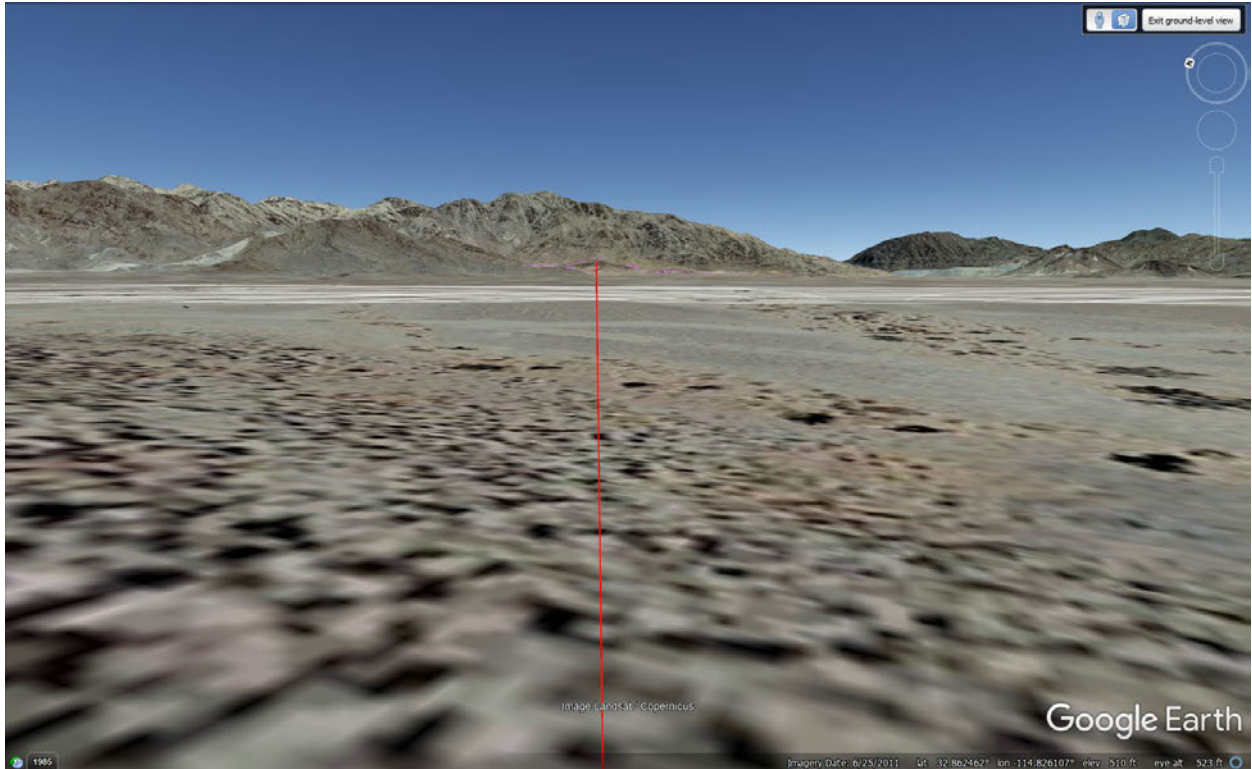
Drill Area 4

View from the northwest (blue line of the elevation profile in Attachment 1)



Drill Area 5

View from the northwest (blue line of the elevation profile in Attachment 1)



### Drill Area 6

View from the southwest (blue line of the elevation profile in Attachment 1)

**BIOLOGICAL RESOURCE TECHNICAL REPORT  
AND ASSESSMENT  
ORO CRUZ EXPLORATION PROJECT  
SMP Gold Corp.**

Prepared for:

Bureau of Land Management, El Centro Field Office

1661 S 4<sup>th</sup> St.

El Centro, CA 92243

Project Number: 2072.03

June 30, 2021



  
WestLand Resources

WestLand Resources, Inc. • 4001 E. Paradise Falls Drive • Tucson, Arizona 85712 • 520•206•9585

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- Appendix C. BLM El Centro Sensitive Species
- Appendix D. California Department of Fish and Wildlife RareFind Report
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## EXECUTIVE SUMMARY

Southern Empire Resources Corp. (SMP) is proposing mineral exploration activities, the Oro Cruz Pit Area Exploration Project, on lands managed by the Bureau of Land Management (BLM) in the Cargo Muchacho Mountains of Imperial County in southeastern California (the Project) (**Figures 1 and 2**). The BLM Exploration Plan of Operations (EPO) consists of an approximately 600-acre area (**Figure 2**). Within the EPO the Project Area consists of seven drill pads and associated access roads, totaling 21.1 acres of surface disturbance (**Figure 2**). The Project Area occurs within the Picacho Area of Critical Environmental Concern (ACEC) as designated under the Desert Renewable Energy Conservation Plan, and thus requires a BLM Plan of Operations. The Project Area has been previously disturbed by mining activities. Current surrounding land uses include prospecting and recreation.

WestLand Resources, Inc. (WestLand) was retained to complete a combined BLM Biological Resource Technical Report (BRTR) to support environmental review of the Project by the BLM and a Biological Resource Assessment (BRA) to support environmental review by Imperial County under the California Environmental Quality Act (CEQA). This combined BRTR/BRA documents desktop and field studies and provides an assessment of the potential to occur for special-status species in the vicinity of the Project.

### Existing Vegetation

Within the Analysis Area, vegetation is sparse in both the upland and xeroriparian habitats. The uplands consist of a very low-density shrub community dominated by creosote (*Larrea tridentata*) and brittlebush (*Encelia farinosa*). In addition, large portions of the Analysis Area consist of disturbed habitats dominated by non-native annual plants. The xeroriparian habitat generally consists of the same sparse shrub community and includes widely spaced upland trees and ocotillo (*Fouquieria splendens*). In summation, vegetation in the Analysis Area is uniformly sparse and consist of very low density shrublands, upland trees and highly disturbed habitats.

A total of 41 plant species were identified during field surveys within the Analysis Area in March 2021. Plant species observations do not represent a complete floristic survey. Three California Native Plant Society vegetation categories were identified during pedestrian surveys and thematically mapped using the Supervised Classification tool in ArcGIS Pro 2.7.

California Native Plant Society vegetation categories observed within the Analysis Area and Project Area (**Figure 5**). These vegetation categories include *Brassica (nigra)* and other mustards semi-natural stands (18 percent of the Analysis Area and 24 percent of the Project Area), *Parkinsonia florida—Olneya tesota* alliance (2 percent of the Analysis Area and 2 percent of the Project Area), and *Larrea tridentata—Encelia farinosa* alliance (79 percent of the Analysis Area and 4 percent of the Project Area).



## Special-Status Plant Species

A screening analysis was conducted to determine the potential for special status plant species to occur in the Analysis Area. The following were analyzed:

1. Plant species designated by the U.S. Fish and Wildlife Service (USFWS) as Endangered, Threatened, Proposed for listing, or Candidate for listing under the Endangered Species Act (ESA), as identified by the Information, Planning and Consultation (IPaC) system.
2. Plant species designated as sensitive per the El Centro Field Office BLM list of California sensitive species.
3. Plant species identified for analysis under the California Environmental Quality Act (CEQA), including Plants designated as special-status by the California Native Plant Society (CNPS).

Three special status plant species, Munz cholla (*Cylindropuntia munzii*), Flat-seeded spurge (*Euphorbia platysperma*), and Pink fairy-duster (*Calliandra erophylla*), were determined to have a possible presence or a high potential to occur in the Analysis Area.

## Existing Wildlife Species

During field survey conducted in March 2021 a total of 26 wildlife species were observed.

A screening analysis was conducted to determine the potential for special status wildlife species to occur in the Analysis Area. The following were analyzed:

1. Species and critical habitat designated by the U.S. Fish and Wildlife Service (USFWS) as Endangered, Threatened, Proposed for listing, or Candidate for listing under the Endangered Species Act (ESA), as identified by the Information, Planning and Consultation (IPaC) system.
2. Species protected under the Bald and Golden Eagle Protection Act (BGEPA).
3. Species designated as sensitive per the El Centro Field Office BLM list of California sensitive species.
4. Species identified for analysis under the CEQA, including California Department of Fish and Wildlife (CDFW) Species of Special Concern; species designated as USFWS Birds of Conservation Concern; CDFW special-status invertebrates; and Species of bat listed as high and medium priority by the Western Bat Working Group.

One ESA listed species, the threatened Mohave Desert tortoise (*Gopherus agassizii*), was determined to be present the Analysis Area. No designated or proposed critical habitat occurs within the Project Area.

Three bats, pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and greater western mastiff bat (*Eumops perotis californicus*), that are listed as BLM Sensitive and State-Ranked in the

California Natural Diversity Database (CNDDDB) were determined to be present in the Analysis Area; and 2 bats, small-footed myotis (*Myotis ciliolabrum*) and cave myotis (*Myotis velifer*), that are also listed as BLM Sensitive and State-Ranked in the CNDDDB were determined to have a possible presence in the Analysis Area.

Two birds, Prairie falcon (*Falco mexicanus*) and Black-tailed gnatcatcher (*Poliptila melanura*) that are State-Ranked in the CNDDDB were determined to have a high potential to occur in the Analysis Area.

One lizard, Colorado Desert fringe-toed lizard (*Uma notata*), that is listed as BLM Sensitive and State-Ranked in the CNDDDB was determined to be present in the Analysis Area.

## I. INTRODUCTION

Southern Empire Resources Corp. (SMP) is proposing mineral exploration activities, the Oro Cruz Pit Area Exploration Project, on lands managed by the Bureau of Land Management (BLM) in the Cargo Muchacho Mountains of Imperial County in southeastern California (the Project) (**Figures 1 and 2**). The BLM Exploration Plan of Operations (EPO) consists of an approximately 600-acre area (**Figure 2**). Within the EPO the Project Area consists of seven drill pads and associated access roads, totaling 21.1 acres of surface disturbance (**Figure 2**). The Project Area occurs within the Picacho Area of Critical Environmental Concern (ACEC) as designated under the Desert Renewable Energy Conservation Plan, and thus requires a BLM Plan of Operations. The Project Area has been previously disturbed by mining activities. Current surrounding land uses include prospecting and recreation.

WestLand Resources, Inc. (WestLand) was retained to complete a combined BLM Biological Resource Technical Report (BRTR) to support environmental review of the Project by the BLM and a Biological Resource Assessment (BRA) to support environmental review by Imperial County under the California Environmental Quality Act (CEQA). This combined BRTR/BRA documents desktop and field studies and provides an assessment of the potential to occur for special-status species in the vicinity of the Project. An assessment of drainage features, including the potential for Waters of the U.S. and Waters of the State are being provided under separate cover.

For the purpose of this report, special-status species are defined as species designated by the U.S. Fish and Wildlife Service (USFWS) as Endangered, Threatened, Proposed for listing, or Candidate for listing under the Endangered Species Act (ESA), species listed under the Bald and Golden Eagle Protection Act (BGEPA), those species designated as sensitive by the BLM El Centro Field Office, and species reviewed to support Imperial County's CEQA process.

The following sections provide a Project description and location (**Section 2**), regulatory overview (**Section 3**), environmental setting (**Section 4**), methods (**Section 5**), results (**Section 6**), and references cited (**Section 7**).

## 2. PROJECT DESCRIPTION AND LOCATION

Within the Analysis Area, the disturbance occurs on seven drill areas and associated access roads (**Figure 2**). Within these areas, the Project entails 21.1 acres of surface disturbance. The Analysis Area is in Imperial County, California and occurs within portions of Township 15 South, Ranges 20 and 21 East. The Project Area is located approximately 7 miles north of Ogilby, California, eight miles northwest of Yuma, Arizona, 45 miles southeast of Blythe, California and 50 miles east of El Centro, California (**Figure 1**). To evaluate the special-status species potential to occur, a broader Analysis Area consisting of the drill exploration areas and access roads and a 500-foot buffer around these was established (**Figure 2**). Additionally, a 2-mile buffer around the drill areas and associated access roads where surface disturbance would occur was established as the Raptor Survey Area (**Figure 3**).

### **3. REGULATORY OVERVIEW**

#### **3.1. ENDANGERED SPECIES ACT**

The USFWS and the National Marine Fisheries Service (NMFS) are the agencies responsible for implementing the federal Endangered Species Act (ESA) of 1973 (16 USC Section 1531 et seq.). Under the ESA, threatened and endangered species on the federal list and their habitats (50 CFR Subsection 17.11, 17.12) are protected from “take” (i.e., activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) as well as any attempt to engage in any such conduct, unless a Section 10 permit is granted to an individual or a Section 7 consultation and a Biological Opinion with incidental take provisions are provided to a lead federal agency. Pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present within the study area and vicinity and determine whether the proposed project will have potential impacts upon such species.

#### **3.2. BALD AND GOLDEN EAGLE PROTECTION ACT**

The BGEPA (16 U.S.C. 668-668c), enacted in 1940, and amended several times since, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

#### **3.3. MIGRATORY BIRD TREATY ACT**

Most bird species, especially those that are breeding, migrating, or of limited distribution, are protected under federal and/or State regulations. Under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Subsection 703-712) and USFWS regulations (50 CFR § 10.14), migratory bird species, their nests, and their eggs are protected from injury or death as a result of activities specifically directed at migratory birds. The USFWS recently proposed to revoke the existing regulations governing the implementation of the MBTA (86 FR 87: 24573-24581), effectively returning the interpretation of the prohibitions of the MBTA and enforcement discretion of the USFWS to the uncertainty associated with the split decisions among Federal Circuit Courts regarding the scope of the MBTA’s take prohibition.

#### **3.4. CALIFORNIA ENDANGERED SPECIES ACT**

The California Endangered Species Act (CESA) prohibits the take of State-listed threatened and endangered species. Under the CESA, the California Department of Fish and Wildlife (CDFW) is responsible for maintaining a list of rare, threatened, and endangered species designated under State law (California Fish and Game Code 2070-2079). The CDFW also maintains lists of candidate species, species of special concern, and fully protected species. Candidate species are those taxa which have

been formally recognized by the CDFW and are under review for addition to the State threatened and endangered list. Species of special concern are those taxa, which are considered sensitive, and this list serves as a “watch list.” Pursuant to the requirements of the CESA, agencies reviewing proposed projects within their jurisdictions must determine whether any State-listed species have the potential to occur within a proposed project site and if the proposed project would have potential impacts upon such species. Project-related impacts to species on the CESA’s rare, threatened, and endangered list would be considered significant and require mitigation. The CDFW can authorize take if an incidental take permit is issued by the Secretary of the Interior or Commerce in compliance with the ESA, or if the director of the CDFW issues a permit under Section 2081 in those cases where it is demonstrated that the impacts are minimized and fully mitigated.

### **3.5. CALIFORNIA FISH AND GAME CODE**

The California Fish and Game Code defines take (Section 86) and prohibits taking of a species listed as threatened or endangered under the CESA (California Fish and Game Code Section 2080), or otherwise fully protected (California Fish and Game Code Sections §3511, §4700, §5050, and §5515). Section 2081(b) and (c) of the CESA allows the CDFW to issue an incidental take permit for a State listed threatened and endangered species if specific criteria outlined in Title 14 California Code of Regulations (CCR), Sections 783.4(a), (b) and California Fish and Game Code Section 2081(b) are met. The California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code. Section 3503.5 states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird. Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA. The CDFW protects plants designated as endangered or rare under Fish and Game Code Section 1900.

## **4. ENVIRONMENTAL SETTING**

### **4.1. PHYSIOGRAPHIC, CLIMATE AND SURFACE WATER**

The Analysis Area consists of rugged, eroding, rocky slopes composed of quartzites and schists that have been intruded by granitic rocks. In places there are andesite and dioritic dikes (Jennings et al. 1977). Climate within the Analysis Area is characterized by hot dry conditions in the summer months and dry mild winters. Average rainfall is 3.5 inches per year, occurring primarily during late winter (February and March) and the monsoon season (July to September). Average high temperature of the hottest (August) month is 105°F and average low temperature of the coldest month (December) is 66°F (Weather Underground 2021). No surface water features occur within the Analysis Area.

## 4.2. SOILS

Soils in the Analysis Area developed from weathered granitic rock and schistose rock substrates. The soils consist of extremely gravelly sands or gravelly loams with up to 90 percent coarse fragments. Soils within the Analysis Area are of two general types based on substrate and topographic position: residual soil material weathered in place on slopes and ridges; and deeper alluvial soils transported by water and gravity to toe slopes, washes, and outwash fans. Hill slopes in the Analysis Area are steep and almost entirely covered in large, weathered rock (BLM & P.M. De Dycker & Associates, Inc. 1994). The soils within the Analysis Area also contain large areas of disturbance from previous mining and reclamation activities.

## 4.3. VEGETATION

Vegetation in the Analysis Area is low desert scrub typical of the high temperature region of southeastern California. In general, vegetation is sparse in both the upland and xeroriparian habitats. The uplands consist of a very low-density shrub community dominated by creosote (*Larrea tridentata*) and brittlebush (*Encelia farinose*) (**Appendix E Photo 12**). In addition, large portions of the Analysis Area consist of disturbed habitats dominated by non-native annual plants (**Appendix E Photo 11**). The xeroriparian habitat generally consists of the same sparse shrub community and includes widely spaced upland trees and ocotillo (*Fouquieria splendens*) (**Appendix E Photo 18**). In summation, vegetation in the Analysis area is uniformly sparse and consists of very low density shrublands, upland trees and highly disturbed habitats (**Appendix E Photos 11, 12 and 18**).

Three California Native Plant Society vegetation categories were identified during pedestrian surveys and thematically mapped using the Supervised Classification tool in ArcGIS Pro 2.7.

California Native Plant Society vegetation categories observed within the Analysis Area are described below:

### *Brassica (nigra) and other mustards semi-natural stands*

*Brassica (nigra)* and other mustards semi-natural stands vegetation category occupies approximately 18 percent of the Analysis Area and 24 percent of the Project Area (**Figure 5**). This vegetation category corresponds with disturbed and barren areas. Although the named dominant species, black mustard (*Brassica nigra*), was not observed, Saharan mustard (*Brassica tournefortii*), a closely related non-native mustard was often present in both naturally disturbed areas including wash scour and human-disturbed areas such as roads, camp sites, and rock waste piles. This natural community is not classified as sensitive by the CDFW (2020).

### *Parkinsonia florida—Olneya tesota alliance*

*Parkinsonia florida—Olneya tesota* alliance occupies approximately 2 percent of the Analysis Area and 2 percent of the Project Area (**Figure 5**). The vegetation category is primarily restricted to xeroriparian

areas including washes, drainages, and narrow canyons. Besides the named alliance's dominant plants, blue palo verde (*Parkinsonia florida*) and ironwood (*Olneya tesota*), other commonly occurring plants include sweetbush (*Bebbia juncea*), lance leaved ditaxis (*Ditaxis lanceolata*), desert lavender (*Hyptis emoryi*), ocotillo, and Anderson's desert thorn (*Lycium andersonii*). This natural community is classified as sensitive by the CDFW (2020).

#### *Larrea tridentata* — *Encelia farinosa* alliance

*Larrea tridentata* — *Encelia farinosa* alliance occupies approximately 79 percent of the Analysis Area and 74 percent of the Project Area and occurs in a variety of topographic settings (**Figure 5**). Besides the named alliance's dominant plants, creosote (*Larrea tridentata*) and brittlebush (*Encelia farinosa*), other commonly occurring plants include ocotillo, beavertail prickly pear (*Opuntia basilaris*), and burrobush (*Ambrosia dumosa*). This natural community is classified as sensitive by the CDFW (2020).

### 4.4. EXISTING CONDITIONS (OR LAND USE)

Off-road vehicle use, recreational vehicle camping, and other outdoor activities have added to the disturbances in the Analysis Area. Previous mining disturbance and underground mine features occur throughout the Analysis Area.

## 5. METHODS

In order to determine the potential to occur of special-status species two complementary methods were utilized: 1) Desktop screening and vegetation habitat mapping, and 2) Field survey.

### 5.1. DESKTOP SCREENING AND VEGETATION HABITAT MAPPING

#### 5.1.1. Desktop Screening

A desktop screening analysis was completed to evaluate the potential for special-status species or their critical habitat to occur within the Analysis Area. For this assessment, special-status species are defined as:

- 1) Species and critical habitat designated by the U.S. Fish and Wildlife Service (USFWS) as Endangered, Threatened, Proposed for listing, or Candidate for listing under the Endangered Species Act (ESA), as identified by the Information, Planning and Consultation (IPaC) system (**Appendix B**).
- 2) Species protected under the Bald and Golden Eagle Protection Act (BGEPA) (**Appendix B**).
- 3) Species designated as sensitive per the El Centro Field Office BLM list of California sensitive species (**Appendix C**).
- 4) California Environmental Quality Act (CEQA) species including CDFW Species of Special Concern; Plants designated as special-status by the California Native Plant Society (CNPS); USFWS Birds of Conservation Concern; CDFW special-status invertebrates; and Species of bat listed as high and medium priority by the Western Bat Working Group (**Appendix D**).

Special-status species were identified for the Analysis Area using a series of online databases and review of previous permitting efforts in the Project Area (Bureau of Land Management 2011, 2018, BLM & P.M. De Dycker & Associates, Inc. 1994). The IPaC system was used to create a list of ESA species and critical habitat likely to occur in the vicinity of the Analysis Area (**Appendix B**). WestLand reviewed California-specific special-status species that are documented to occur in the vicinity of the Project Area from the CDFW and CNPS using the BIOS and Rarefind tools (**Appendix D**). The BLM El Centro Field Office sensitive species list was also included in this screening (**Appendix C**). Previous permitting efforts in the Project Area include the American Girl Final Environmental Impact Statement (EIS), and American Girl East Mine Asphalt Batch Plant Environmental Assessment (EA) (BLM 2011, Bureau of Land Management 2018, BLM & P.M. De Dycker & Associates, Inc. 1994, Tetra Tech 2011).

In order to accommodate both the BLM's BRTR and the California Environmental Protection Agency (CalEPA) BRA requirements, two discrete potential to occur methods were used. The first potential to occur method pertained to all ESA listed, BGEPA listed and BLM sensitive species. The second potential to occur method pertained to the CEQA species only. Under the first method (ESA listed, BGEPA listed and BLM sensitive species) potential of occurrence were defined as follows:

**Present:** The species has been observed to occur within the Analysis Area, the Analysis Area is within the known range and distribution of the species, and habitat characteristics required by the species are present.

**Possible:** There are no known records of the species within the Analysis Area, but the known, current distribution of the species includes the Analysis Area and the required habitat characteristics of the species appear to be present in the Analysis Area. Given the uncertainty associated with species identification and accuracy of the location of observations from eBird and other citizen science databases, observations associated with citizen science databases are evidence that a species is possible within the Analysis Area.

**Unlikely:** The known, current distribution of the species does not include the Analysis Area, but the distribution of the species is close enough such that the Analysis Area may be within the dispersal or foraging distance of the species, and they may show up as transients. The habitat characteristics required by the species may be present in the Analysis Area.

**None:** The Analysis Area is outside of the known distribution of the species or the habitat characteristics required by the species are not present.

Under the second method species evaluated for the CEQA process potential to occur was evaluated using the categories below.

**No potential of occurrence:** The Analysis Area is outside of the known distribution of the species or the habitat characteristics required by the species are not present.



**Low potential of occurrence:** The known, current distribution of the species does not include the Analysis Area, but the distribution of the species is close enough such that the Analysis Area may be within the dispersal or foraging distance of the species, and they may show up as transients. The habitat characteristics required by the species may be present in the Analysis Area.

**Moderate potential of occurrence:** There are no known records of the species within the Analysis Area, but the known, current distribution of the species includes the Analysis Area and the required habitat characteristics of the species appear to be present in the Analysis Area.

**High potential of occurrence:** The species has been observed to occur within the Analysis Area, the Analysis Area is within the known range and distribution of the species, and habitat characteristics required by the species are present.

### 5.1.2. Vegetation Habitat Mapping

Vegetation habitat mapping was conducted using the Supervised Classification tool in ArcGIS Pro 2.7 to provide site-specific vegetation mapping and to estimate the type and extent of vegetation habitat within the Analysis Area. Vegetation habitat mapping was then validated during the field survey and a total plant species list was created. Habitat mapping followed the recommended CNPS methods and nomenclature. In addition, mapping was used to identify California Sensitive Natural Communities (CDFW 2020).

Field surveys were conducted to provide an overview of the environmental conditions within the analysis Area. This overview consisted of: 1) Vegetation mapping validation; 2) Diurnal raptor surveys; 3) Habitat suitability assessments for Colorado desert fringe-toed lizard (*Uma notata*), western burrowing owl (*Athene cunicularia*), flat-tailed horned lizard (*Phrynos omamcalii*), and bat species; and 4) creation of a vertebrate wildlife and plant species list. In addition, previous Mojave Desert tortoise (*Gopherus agassizii*) surveys conducted within the Project Area were utilized to assess habitat suitability for this species (**Appendix A**). Survey methods applied by Stantec followed protocol *Preparing For Any Action That May Occur Within the Range Of The Mojave Tortoise* as developed by USFWS (2017) which consisted of 100 percent coverage of proposed drill areas. Based on conversations with the BLM and input from the USFWS, tortoise surveys conducted for SMP by Stantec biologists in January 2021 fulfill the survey obligations for this species (**Appendix A**).

Diurnal raptor surveys followed the USFWS recommended golden eagle nest survey protocol and included the selection of appropriate observation points (**Appendix E Photos 4, 5, 6 and 7**). This survey followed the recommendations outlined in the USFWS Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations dated February 2010 (Pagel, Whittington, and Allen 2010). These methods relied on well-placed observation posts and walking transects which provided unobstructed viewing of any potential nest locations. Each observation point or walking transect included a broad panorama of the surrounding habitat and was established in locations distant

enough from any potential nest sites to effectively observe the behavior of the adults (if present) without disturbing nesting behavior.

Habitat assessments for Colorado desert fringe-toed lizard, western burrowing owl, and flat-tailed horned lizard consisted of onsite evaluation of suitable habitat within the Analysis Area. These three species are listed as BLM sensitive species and CEQA species and have ranges which overlap the Analysis Area.

Bat species habitat was evaluated by revisiting high value underground mine roosting habitat within the Analysis Area identified by the BLM in previous survey efforts. Previous survey efforts detected 20 high value bat roosts in underground mines within the Analysis Area (**Figure 4**). WestLand conducted external habitat assessments of these mines to evaluate the habitat potential of each mine feature (**Appendix E Photos 15 and 16**). In addition, the Analysis Area was evaluated for bat roosting habitat including cliff, crevice, and vegetation roosts and foraging habitat.

## 6. RESULTS

### 6.1. PLANT SPECIES

A total of 41 plant species were identified during field surveys within the Analysis Area (**Table 1**). Three CNPS vegetation categories were identified during pedestrian surveys and thematically mapped using the Supervised Classification tool in ArcGIS Pro 2.7 (**Figure 5**) (see discussion in Sec. 4.3). In general, plant cover in the Analysis Area is particularly sparse.

### 6.2. WILDLIFE SPECIES

During the field survey a total of 26 wildlife species were observed (**Table 2**). Five of these species were detected during the raptor surveys and two during evaluation of bat roosting habitat. These detections included two occupied prairie falcon (*Falco mexicanus*) eyries (nesting sites), a suspected red-tailed hawk (*Buteo jamaicensis*) nest, and an unoccupied stick nest (**Figure 3**). A single prairie falcon (*Falco mexicanus*) eyrie was located within the Project Area and the second within the Analysis Area (**Figure 3**). The suspected red-tailed hawk and unoccupied stick nest occurred outside of the Analysis Area but within the raptor survey area (**Figure 3**). Black-tailed gnatcatchers (*Poliottila melanura*) were observed in the Analysis Area.

**Table 1. Plant species observed in the Analysis Area during the field survey.** This list represents species observed during the field survey and does not represent a complete floristic survey.

Common Name	Scientific Name	Common Name	Scientific Name
<b>PLANTS</b>		<b>PLANTS</b>	
PERENNIALS		ironwood	<i>Olneya tesota</i>
burrobush	<i>Ambrosia dumosa</i>	beavertail pricklypear	<i>Opuntia basilaris</i>
burrobush	<i>Ambrosia salsola</i>	blue paloverde	<i>Parkinsonia florida</i>
western milkweed	<i>Asclepias albicans</i>	Schott's pygmycedar	<i>Peucephyllum schottii</i>
sweetbush	<i>Bebbia juncea</i>	velvet turtleback	<i>Psathyrotes ramosissima</i>
Paloverde	<i>Cercidium floridum</i>	desert globemallow	<i>Sphaeralcea ambigua</i>
pink fairyduster	<i>Cylindropuntia erophylla</i>	Mesquite	<i>Prosopis juliflora</i>
hairy prairie clover	<i>Dalea mollis</i>	Tamarisk*	<i>Tamarix pentandra</i>
narrowleaf silverbush	<i>Ditaxis lanceolata</i>	American threefold	<b><i>Trixis californica</i></b>
Inciensio	<i>Encelia farinose</i>	<b>ANNUALS</b>	
rough jointfir	<i>Ephedra aspera</i>	sixweeks threeawn	<i>Aristida adscensionis</i>
desert trumpet	<i>Eriogonum inflatum</i>	Asian mustard*	<i>Brassica tournefortii</i>
California fagonbush	<i>Fagonia laevis</i>	brittle spineflower	<i>Chorizanthe brevicornu</i>
California barrel cactus	<i>Ferocactus cylindraceus</i>	devil's spineflower	<i>Chorizanthe rigida</i>
ocotillo	<i>Fouquieria splendens</i>	pygmy poppy	<i>Eschscholzia minutiflora</i>
paleface	<i>Hibiscus denudatus</i>	Arizona lupine	<i>Lupinus arizonicus</i>
desert lavender	<i>Hyptis emoryi</i>	Mojave desertstar	<i>Monoptilon bellioides</i>
creosote	<i>Larrea tridentata</i>	desert palafox	<i>Palafoxia arida var. arida</i>
water jacket	<i>Lycium andersonii</i>	clefthead phacelia	<i>Phacelia crenulata</i>
Parry's false prairie-clover	<i>Marina parryi</i>	desert Indianwheat	<i>Plantago ovata</i>
desert wishbone-bush	<i>Mirabilis laevis</i>	yellowdome	<i>Trichoptilium incisum</i>
desert tobacco	<i>Nicotiana obtusifolia</i>	*non-native	

**Table 2. Wildlife species observed in the Analysis Area.** This list represents the species observed during the field survey and does not represent a complete list of wildlife occurring within the Analysis Area.

Common Name	Scientific Name	Common Name	Scientific Name
Black-throated sparrow	<i>Amphispiza bilineata</i>	canyon towhee	<i>Meloxone fusca</i>
verdin	<i>Auriparus flaviceps</i>	northern mockingbird	<i>Mimus polyglottos</i>
great horned owl	<i>Bubo virginianus</i>	Unknown Myotis	<i>Myotis spp.</i>
red-tailed hawk	<i>Buteo jamaicensis</i>	neotoma	<i>Neotoma spp.</i>
Costa's hummingbird	<i>Calypte costae</i>	ground squirrel	<i>Osteospermophilus spp.</i>
turkey vulture	<i>Cathartes aura</i>	Black-tailed gnatcatcher	<i>Polioptila melanura</i>
common raven	<i>Corvus corax</i>	rock wren	<i>Salpinctes obsoletus</i>
ladder-backed woodpecker	<i>Dryobates scalaris</i>	Say's phoebe	<i>Sayornis saya</i>
burro	<i>Equus asinus</i>	squirrel	<i>Scuridate spp.</i>
prairie falcon	<i>Falco mexicanus</i>	northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
house finch	<i>Haemorhous mexicanus</i>	cottontail	<i>Sylvilagus spp.</i>
loggerhead shrike	<i>Lanius ludovicianus</i>	side-blotched lizard	<i>Uta spp.</i>
California leaf-nosed bat	<i>Macrotus californicus</i>	fox	<i>Vulpes spp.</i>

During the field survey the Analysis Area was evaluated for habitat suitability for Colorado Desert Fringed-toed lizard, Western burrowing owl, and flat-tailed horned lizard (**Figure 6**). No habitat suitable for flat-tailed horned lizard was observed within the Analysis Area. Several small areas on the western and southern extremes of the Analysis Area include isolated sandy patches that may provide marginal habitat for Colorado Desert fringe-toed lizard (**Figure 6 and Appendix E Photos 13 and 14**). Areas of flat topography on the southern and western edges of the Analysis Area provide potentially suitable western burrowing owl habitat (**Figure 6 and Appendix E Photos 11 and 12**).

### 6.2.1. Bats

Bat surveys consisted of an external evaluation of all the high value bat roost locations provided by BLM. The BLM did not provide species specific use or roost types within these mine features. Bat surveys within these mines conducted for previous permitting efforts in the Project Area indicate that these mine features were occupied by a suite of species including California leaf-nosed bat (*Macrotus californicus*), Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*) and an unknown Myotis species, likely cave myotis (*Myotis velifer*) (BLM 2011, Bureau of Land Management 2018, BLM & P.M. De Dycker & Associates, Inc. 1994, Tetra Tech 2011). Our external evaluation of these 20 mines detected bat guano and urine staining visible from the mine opening without entry. Guano and staining associated with California leaf-nosed bat activity was observed at five of the mine features. Identified California leaf-nosed bat guano consisted of 1 to 2 centimeter black to yellow streaking on the sides and roof of the mine (Mixan, Diamond, and Gwinn 2016). Two mine features contained guano and urine staining consistent with California leaf-nosed bat and an unknown Myotis species. Guano associated with an unknown Myotis species was observed at a single mine feature (**Figure 4**). Myotis guano consisted of pellets 1 to 3 millimeters long (Adams 2003). Myotis guano was most often detected at the mine openings on the angle-iron bat compatible gates. Bat activity could not be ascertained from external evaluations alone in the remaining 12 mine features and bat activity is unknown (**Figure 4**).

## 6.3. SPECIES HISTORICAL OCCURRENCE WITHIN THE ANALYSIS AREA

Historical occurrence data indicate that six special-status species have been detected within or adjacent to the Analysis Area (**Figure 7**). Two of these species were observed during the field survey (California leaf-nosed bat and pink fairy duster [*Cylindropuntia erophylla*]) (**Tables 1 and 2**). Suitable habitat was detected for three species (Townsend's big-eared bat, pallid bat, and western mastiff bat [*Eumops perotis*]). The Mojave Desert tortoise has been documented within and adjacent to the Analysis Area (BLM 2011, 2018, BLM & P.M. De Dycker & Associates, Inc. 1994) (**Appendix A**). Stantec conducted Mojave Desert tortoise surveys in the Project Area from January 8 to 15, 2021. Within the Project Area a total of eight suitable tortoise burrows were detected (**Appendix A**). Of these eight burrows all but one was in good condition. Scat or recent tracks were observed at three of the detected tortoise burrows and a single scat was detected not associated with a burrow (**Figure 7**).

#### 6.4. POTENTIAL FOR SPECIAL-STATUS SPECIES TO OCCUR

WestLand identified special-status species using the sources described above and evaluated the potential for these special-status species to occur in the Analysis Area. The results of the desktop screening, vegetation mapping, and field survey were utilized to assess each special-status species potential to occur (**Tables 3, 4, 5, and 6**). The following sections provide potential to occur for ESA listed species (**Section 6.5**); BGEPA listed species (**Section 6.6**); BLM sensitive species (**Section 6.7**); and CEQA species (**Section 6.8**).

#### 6.5. ESA LISTED SPECIES

One ESA listed species, the threatened Mohave Desert tortoise, has a potential to occur of **Present** within the Analysis Area (**Table 3**). No designated or proposed critical habitat occurs within the Analysis Area (**Appendix B**).

#### 6.6. BGEPA LISTED SPECIES

The bald eagle has a potential to occur of **None** and golden eagle (*Aquila chrysaetos*) has an **Unlikely** potential to occur as the habitat within the Analysis Area is unsuitable and the habitat within the 2-mile raptor survey buffer (**Figure 3**) was marginal.

#### 6.7. BLM SENSITIVE SPECIES

The potential to occur for BLM Sensitive Species for the El Centro Field Office was evaluated through the desktop screening, field survey, and vegetation mapping. Species with a potential to occur of **None** are summarized in **Appendix F** and all others are in **Table 5**. This approach was utilized to reduce table volume. In total, the potential to occur was evaluated for 55 BLM sensitive species. Of those 55, 35 had a potential to occur of **None** (**Appendix F**). Of the remaining 20 species (**Table 5**); ten species had a potential to occur of **Unlikely**, five **Possible** and only five species had a potential to occur of **Present**. Four of the five species with a potential to occur of **Present** were bat species and the fifth was the Mojave Desert tortoise (**Table 5**).

#### 6.8. SPECIES EVALUATED FOR THE CEQA PROCESS POTENTIAL

In total, the potential to occur within the Analysis Area was evaluated for 31 species for the CEQA process (**Table 6**). Of the 31 species evaluated nine had **No Potential of Occurrence**. Of the remaining 22 species, ten had a **Low Potential of Occurrence**, four had a **Moderate Potential of Occurrence** and eight had a **High Potential of Occurrence**. The species with a High Potential of Occurrence consisted of a single plant, two birds, four bats, and the Mojave Desert tortoise.

**Table 3. ESA Listed Species**

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Gopherus agassizii</i>  Mojave Desert Tortoise	Threatened, populations north and west of the Colorado River (USFWS 1980, USFWS 1990), critical habitat (USFWS 1980, USFWS 1994); Similarity of appearance (threatened) (USFWS 1990).	Inhabits valleys, bajadas and hills with sandy loam or rocky soils in Mojave desertscrub and Lower Colorado River Valley subdivision of the Sonoran Desert. To escape extreme temperatures, excavates burrows under vegetation or rocks. Will also use natural or manmade caves. Typically associated with areas of creosote bush, areas with other sclerophyll shrubs and with small cacti or areas with Joshua trees. Forages on grasses, forbs and succulents (AGFD 2010a). In the contact zone between the species (i.e., the Black Mountains), <i>G. morafkai</i> generally is found in foothills, hillside slopes and more mountainous terrain than <i>G. agassizii</i> that is typically found on alluvial fans and valley bottoms (Edwards et al. 2015).  Elevation: Range-wide, from below sea level in Death Valley to 5,000 ft in elevation (AGFD 2010a).	Occurs in the Mojave Desert of Arizona, California, Nevada and Utah (Edwards et al. 2015, Murphy et al. 2011).	This species occurs through the Mojave Desert in Southeastern California (Boarman 2002)	<b>Present.</b> The Analysis Area is within the range and contains potentially appropriate habitat. Surveys were conducted for the desert tortoise for the Project Area by Stantec in 2020 and detected tortoise use ( <b>Appendix A</b> ).

**Table 4. BGEPA Listed Species**

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Aquila chrysaetos</i> Golden eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	<p>Range-wide, breeds in a wide variety of open habitats, with nests typically on cliffs, and avoids heavily forested areas (Katzner et al. 2020). In Arizona, prefers pinyon-juniper woodlands and Sonoran desertscrub (Driscoll 2005). Constructs large nests on cliff ledges, rock outcrops, tall trees or, rarely, transmission towers (Driscoll 2005). Golden eagles are known to forage within 4.4 miles of the nest (Tesky 1994a), generally in open habitats where prey is available (Katzner et al. 2020). Primarily feeds on small mammals (greater than 80 percent of prey items) but also consumes birds, reptiles and fish (Katzner et al. 2020). In the western U.S. average territory size ranges from 22 to 55 square miles (AGFD 2002b). In California, typically occupy rolling foothills, mountain areas, sage-juniper flats and deserts (CDFW 1990).</p> <p>Elevation: In California, near sea level up to 11,500 ft (CDFW 1990).</p>	<p>This species is a short to medium-distance partial migrant with a Holarctic distribution (Katzner et al. 2020). In North America, primarily breeds in western portion of the continent from Alaska to central Mexico. Northern most populations are typically migratory. Year-round and non-breeding populations occur from central Saskatchewan to British Columbia, Canada and south throughout its range and sparsely in the eastern U.S. (Katzner et al. 2020).</p>	<p>Uncommon permanent resident and migrant throughout California, except center of Central Valley (CDFW 1990). Perhaps more common in northern and southern California (CDFW 1990).</p>	<p><b>Unlikely.</b> The Analysis Area occurs within the know range of the species, however, no historical records for this species occur within the Analysis Area and the habitat within the Raptor survey area was searched and no evidence of Golden Eagle nesting was detected. No golden eagle nests are known to occur within 4.4 miles of the Analysis Area (Diamond 2016) and thus it is unlikely this species would utilize the Analysis Area as foraging habitat. No historical records of this species occur within or adjacent to the Analysis Area (<b>Figure 7 and Appendix D</b>).</p>

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Haliaeetus leucocephalus</i> Bald Eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	<p>Breeding is concentrated in coastal areas, along rivers, lakes or reservoirs. Typically breeds in forested areas with edge habitat within 1.3 miles of aquatic habitats suitable for foraging. Prefers areas of shallow water and shorelines for fishing and hunting wide variety of waterfowl, and small aquatic and terrestrial mammals. Fish are preferred prey, but carrion is used extensively whenever encountered. Nests away from human disturbance in large trees and rarely on cliff ledges or on the ground when trees are absent. Winters primarily in coastal areas or along major river systems with adequate prey availability and large trees for perching (Buehler 2020). In California, more common at lower elevations (CDFW 1999).</p> <p>Elevation: In California, nesting most commonly found about 1,000 to 6,000 ft but can occur from near seal level to over 7,000 ft (Jurek 1988).</p>	<p>Migratory behavior varies among populations and age groups (Buehler 2020). Breeds south of the tundra throughout Canada and the U.S., excluding Hawaii. Additionally, small breeding populations occur in Baja California, Sonora and Chihuahua, Mexico (Buehler 2020). Winter range appears to be expanding as populations increase in size. Most populations are year-round residents with only the northern most populations in Alaska, U.S. and Canada withdrawing southward or to coastal areas (Fink 2018).</p>	<p>Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties (CDFW 1999). Half of the wintering population is in the Klamath Basin (CDFW 1999). Not found in the high Sierra Nevada (CDFW 1999). Largest numbers found in Big Bear Lake, Cachuma Lake, Lake Mathews, Nacimiento Reservoir, San Antonio Reservoir, and along the Colorado River (CDFW 1999). Local winter migrant at a few inland waters in southern California (CDFW 1999).</p>	<p><b>None. The Analysis Area occurs greater than the known foraging distance (1.3 miles from aquatic habitats) for this species. In addition, no suitable large nesting trees or cliffs occur within the Analysis Area.</b> No historical records of this species occur within or adjacent to the Analysis Area (<b>Figure 7 and Appendix D</b>).</p>



**Table 5. BLM El Centro Field Office Sensitive species**

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<b>AMPHIBIANS</b>				
<i>Scaphiopus couchii</i> Couch's spadefoot toad	Occurs in arid and semi-arid habitats of the southwest, along desert washes, desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats (CDFW 2000). Can also be found in cultivated croplands. Requires friable soils for burrowing often beneath desert plants, logs, and other debris. Reproduces in temporary pools and potholes with water present for at least 10-12 days (CDFW 2000).  Elevation: In California, from 690 to 1,120 ft (CDFW 2000).	Found in southeastern California along the Arizona border in Imperial, Riverside, and San Bernadino counties (CDFW 2000).	Southeastern California along the Arizona border (CDFW 2000).	<b>Unlikely.</b> The Analysis is within the known range of the species. However, there are no occurrence records for this species within the California Natural Diversity Database in these quadrangles (CDFW 2021).

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<b>BIRDS</b>				
<p><i>Athene cunicularia hypugaea</i></p> <p>Western burrowing owl</p>	<p>This species inhabits flat or gently-sloping treeless and sparsely vegetated areas in deserts and grasslands (Poulin et al. 2011). In California, open, dry grassland and desert habitats, and in grass, forb and open shrub states of pinyon-juniper and ponderosa pine habitats. Areas with burrows and unobstructed perches are favored (Martin 2005). Largely reliant on burrows dug by mammals but, on rare occasion, will dig their own holes (Klute et al. 2003, Poulin et al. 2011). Northern populations are migratory, and habitat used migratory and winter period is similar to that used for breeding but with some evidence of increased reliance on agricultural areas (Klute et al. 2003, Poulin et al. 2011).</p> <p>Elevation: In California, up to 5,300 ft (CDFW 1999).</p>	<p>This species is a partial migrant, with northern populations being primarily migratory (Poulin et al. 2011). In southwestern states, individuals appear to make yearly decisions to remain on their breeding grounds or migrate, likely based on environmental conditions (Ogonowski and Conway 2009, Poulin et al. 2011). The hypugaea subspecies breeds in Alberta, British Columbia, Manitoba and Saskatchewan, Canada and 19 U.S. states including Arizona, California, Colorado, Idaho, Iowa, Kansas, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming (Klute et al. 2003). The breeding range extends southward into the Mexican states of Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Nuevo Leon, San Luis Potosí, Sinaloa, Sonora, Tamaulipas and Zacatecas (Poulin et al. 2011). Winters primarily in Arizona, California, Louisiana, New Mexico and Texas U.S., and southward through Mexico, excluding the Yucatan Peninsula, to Guatemala and Honduras, with rare reports as far south as Panama (Klute et al. 2003, Poulin et al. 2011).</p>	<p>In California, year-round resident throughout much of the state and on larger offshore islands (CDFW 1999).</p>	<p><b>Unlikely.</b> The Analysis Area is within the known range of this species and potentially suitable habitat is present. No historical occurrence records are known from the Analysis Area (Appendix D). In addition, no Ebird observations have been made for this species within or adjacent to the Analysis Area (eBird 2021). No observation of this species or potential burrows were recorded during the field survey. However, potentially suitable habitat occurs on the western and southern ends of the Analysis Area outside of the Project Area (<b>Figure 6 and Appendix E Photos 11 and 12</b>).</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<p><i>Melanerpes uropygialis</i></p> <p>Gila woodpecker</p>	<p>This species utilizes desert riparian and desert wash habitats, and orchard-vineyard and urban areas particularly in shade trees and date palm groves County (CDFW 1990). Utilizes areas with cottonwood and other desert riparian trees, shade trees, and date palms in California County (CDFW 1990). Also uses saguaros where available (CDFW 1990).</p>	<p>Found in southeast California, southwest Nevada, southern Arizona, southwest New Mexico and south into Mexico (Corman 2005a).</p>	<p>Resident in southern California along the Colorado River, and locally near Brawley, Imperial County (CDFW 1990).</p>	<p><b>Unlikely.</b> Low potential of occurrence. because the majority of the Analysis Area does not contain appropriate habitat. We assessed all washes within the Analysis Area for woodpecker suitability and all washes were characterized by sparse ironwood, ocotillo, and low density of blue palo verde. There is one occurrence record for this species within the California Natural Diversity Database in these quadrangles (CDFW 2020) in an unnamed wash south of Indian Wash about 2.25 miles West of the Cargo Mountains from March 2002. We inspected this wash (<b>Appendix E Photo 17</b>) and the washes within the Analysis Area varied widely from the occurrence site. The washes in the Analysis Area are dissimilar to the occurrence site as represented in <b>Appendix E Photo 18</b>.</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Oreothlypis luciae</i> Lucy's warbler	Frequents open to dense thickets of mesquite and other trees and shrubs in desert wash and desert riparian habitat (Corman 2005b). Cover includes mesquite, salt cedar, palo verde, ironwood, and other riparian trees and shrubs (CDFW 1990). Nest in hidden areas including natural cavity, woodpecker holes, and behind loose bark, in old verdin nest or in a bank (CDFW 1990c).	Mainly breeds in the southwest U.S. and migrates to the Pacific slope of Mexico for the winter (Corman 2005b). Recently arrived in New Mexico. Winters almost exclusively in Mexico (Shuford and Gardali 2008a).	Currently numerous locally along the Lower Colorado River and small populations west to the Borrego Valley in San Diego County and north through the Mojave Desert to Furnace Creek Ranch in Death Valley National Park in Inyo County (Shuford and Gardali 2008a). Rare fall (August-February) migrant and winter visitor in California away from breeding habitats (Shuford and Gardali 2008a). In Lower Colorado River valley, occur in mesquite and other woodland in washes including Milpitas Wash in Imperial County, McCoy and Big washes in Riverside County, and Vidal and Chemehuevi washes in San Bernardino County (Shuford and Gardali 2008a).	<b>Unlikely.</b> While the Analysis Area occurs within the known range of this species the low density xeroriparian washes within the analysis area provide marginal habitat.
<b>MAMMALS</b>				
<i>Antrozous pallidus</i> Pallid bat	Inhabits a wide variety of habitats including grasslands, shrublands, woodlands, and forest from sea level to mixed conifer forests (CDFW 1990c). Most common in open, dry habitats with rocky areas for roosting. Day roosts in caves, crevices, mines, and occasionally in hollow trees and buildings (CDFW 1990c). Night roosts may be in more open sites including porches and buildings (CDFW 1990c).  Elevation: 1,900 to 6,560 ft (NatureServe 2021a).	Ranges throughout western North America, from British Columbia's southern interior, south to Queretaro and Jalisco, and east to Texas. Isolated population in Cuba (WBWG 2018). Most abundant in xeric ecosystems, including the Great Basin, Mojave, and Sonoran Deserts (WBWG 2018).	Locally common at low elevations in California. Occurs throughout California except for the high Sierra Nevada to Kern County and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County (CDFW 1990c).	<b>Present.</b> Historical records for this species occur within the analysis Area and suitable roosting and foraging habitat exists within the Analysis Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<p><i>Corynorhinus townsendii</i></p> <p>Townsend's big-eared bat</p>	<p>Forages in edge habitats along streams and adjacent to or within a variety of wooded habitats. Roosts in cliffs, caves, mines, tunnels, and buildings. Has a large home range and foraging distances (up to 93 miles) (Sherwin and Piaggio 2005).</p> <p>Elevation: Below 10,830 ft (Hammerson 2014).</p>	<p>Occurs from southern British Columbia, Canada and south through all western U.S. states eastward to the Black Hills of South Dakota and the Edwards Plateau in Texas. Isolated populations also exist in Oklahoma, Kansas, Arkansas, Missouri, Illinois, Indiana, Ohio, Kentucky, Virginia, and West Virginia. Range extends to the Isthmus of Tehuantepec, Mexico (Hammerson 2014).</p>	<p>Found throughout California but details of its distribution are not well known (CDFW 2000b).</p>	<p><b>Present.</b> Historical records for this species occur within the analysis Area and suitable roosting and foraging habitat exists within the Analysis Area.</p>
<p><i>Eumops perotis californicus</i></p> <p>Greater western mastiff bat</p>	<p>This species is found in areas with cliffs, which are used for roosting, in desert scrub, chaparral, oak woodland, ponderosa pine belt, mixed conifer forests and high elevation meadows (Siders and Pierson 2005). Maternity roosts occur in exfoliating rock slabs, crevices in boulders and buildings (Siders and Pierson 2005). The morphology of this species prevents it from drinking from water sources less than 98 ft in length and the availability of water limits its distribution across the landscape (AGFD 2014b). In Arizona, this species is a year-round resident that occurs in rocky canyons with abundant roosting crevices. Forages widely from roost sites in lower and upper Sonoran desertscrub near cliffs (AGFD 2014b) and has been captured more than 18 miles from roost sites (Siders and Pierson 2005).</p> <p>Elevation: In Arizona, 240–8,475 ft (AGFD 2014b). Foraging up to 10,000 ft in California (WBWG 2018).</p>	<p>Occurs in Arizona, California, Nevada, New Mexico, Texas and Utah, U.S. and the Mexican states of Baja California, Chihuahua, Coahuila, Durango, Sinaloa, Sonora and Zacatecas (AGFD 2014b, Hammerson 1994, Siders and Pierson 2005).</p>	<p>Found in southeastern San Joaquin Valley and Coastal Ranges from Monterey County southward through southern California, from the coast eastward to the Colorado Desert (CDFW 1990).</p>	<p><b>Present.</b> Historical records for this species occur within the analysis Area and suitable roosting and foraging habitat exists within the Analysis Area.</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<p><i>Macrotus californicus</i></p> <p>California leaf-nosed bat</p>	<p>Typically forages along washes within 6.2 miles of their roost sites (Brown 2005). Primarily consumes insects but also consumes fruits (AGFD 2014a, Brown 2005). In Arizona, this species is a year-round resident of Sonoran Desertscrub. Consumes primarily insects taken on the wing or gleaned from vegetation, but have also been reported to feed on fruits, including those of cacti. Roost sites have large areas of ceiling and flying space, and include abandoned underground mines, caves, and rock shelters (AGFD 2014a).</p> <p>Elevation: In Arizona, below 4,000 ft (AGFD 2014a). In California, records are below 2,000 ft (CDFW 1990a).</p>	<p>Occurs in Arizona, California, Nevada and Utah, U.S. and the Mexican states of Baja California, Baja California Sur, Chihuahua, Sinaloa, Sonora and Tamaulipas (AGFD 2014a, Hammerson 2015a). (CDFW 1990a).</p>	<p>Found from Riverside, Imperial, San Diego, and San Bernardino counties. Historically occurred from Los Angeles to Sand Diego. Fairly common in some areas along the Colorado River (CDFW 1990a).</p>	<p><b>Present.</b> Historical records for this species occur within the analysis Area and suitable roosting and foraging habitat exists within the Analysis Area. In addition, sign associated with this species was detected within the Analysis Area.</p>
<p><i>Myotis ciliolabrum</i></p> <p>Small-footed myotis</p>	<p>Occur in a variety of habitat but primarily found in relatively arid wooded and brushy uplands near water (CDFW 1990d), chaparral, riparian zones, and western coniferous forests (WBWG 2018). Roost caves, buildings, mines, crevices, and occasionally under bridges or bark. Night roost in buildings and caves (CDFW 1990d).</p> <p>Elevation: In California, sea level to at least 8,900 ft (CDFW 1990d).</p>	<p>Found across the western half of North American from British Columbia, Alberta, and Saskatchewan in Canada, throughout most of the U.S. west of the 100<sup>th</sup> Meridian, and into central Mexico (WBWG 2018).</p>	<p>Common in arid uplands in California and occurs from Contra Costa County south to the Mexican border in the coastal region. Also found on the west and east sides of the Sierra Nevada, and in the Great Basin and desert habitats from Modoc to Kern and San Bernardino counties (CDFW 1990d).</p>	<p><b>Possible.</b> The analysis Area occurs within the range of this species and suitable roosting and foraging habitat exists within the Analysis Area.</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Myotis velifer</i> Cave myotis	Forages in desertscrub vegetation and is tolerant of high temperatures and low humidity. Roosts in caves, tunnels, abandoned underground mines, buildings and under bridges within a few miles of water. In Arizona, hibernation roosts are in wet mine tunnels above 6,000 ft (AGFD 2002a). In California, utilize desert scrub, desert succulent shrub, desert wash, and desert riparian.(CDFW 1990b).  Elevation: 300–8,800 ft (AGFD 2002a).	Occurs in Arizona, California, Kansas, Nevada, New Mexico, Oklahoma, Texas and Utah, U.S. Range extends southward through Mexico to Honduras (AGFD 2002a, Hammerson 2015b).	Restricted in California to lowlands of the Colorado River and adjacent mountain ranges, in San Bernardino, Riverside and Imperial counties, although more common farther east (CFDW 1990b).	<b>Possible.</b> An observation record for this species occurs adjacent to the Analysis Area and the Analysis Area contains suitable mine roosting habitat.
<i>Myotis yumanensis</i> Yuma myotis	Inhabits riparian, scrublands, desert, forest near permanent sources of water including rivers, and streams but also uses tinajas (WBWG 2018). Optimal habitats in California in areas with open forest and woodland with sources of water (CDFW 1990e). Roosts in bridges, buildings, cliff crevices, caves, mines, and trees (WBWG 2018). Have been observed roosting in abandoned swallow nests (CDFW 1990e).  Elevation: In California, seal level to 11,000 ft considered uncommon to rare above 8,000 ft (CDFW 1990e).	Found across the western third of North America from British Columbia, Canada, to Baja California and southern Mexico. In the U.S. it occurs in all the Pacific coastal states, as far east as western Montana to the north, and as far east as western Oklahoma south (WBWG 2018).	Common and widespread in California but uncommon in the Mojave and Colorado desert regions, except for the mountain ranges bordering the Colorado River Valley (CDFW 1990e).	<b>Unlikely.</b> No permanent water sources occur within or adjacent to the analysis Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Ovis canadensis nelsoni</i>  Desert bighorn sheep (aka. Nelson bighorn sheep)	Inhabits alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, and montane riparian (CDFW 1990). Uses rocky, steep terrain for reproduction and escape, prefers open areas of low-growing vegetation for feeding and requires adequate sources of water (CDFW 1990).	Historical range extended from northeastern California, Oregon, northern Nevada, and southwestern Idaho southward through the deserts of the southwestern U.S. to southern Baja California, northwestern Sonora Mexico, southern Arizona, southern New Mexico, Chihuahua Mexico and western Texas (Hammerson 2011).	Uncommon in California. There are three subspecies: California bighorn sheep ( <i>O. c. californiana</i> ), peninsular bighorn sheep ( <i>O. c. cremnobates</i> ), and Nelson bighorn sheep aka. desert bighorn sheep ( <i>O. c. nelsoni</i> ) (CDFW 1990). The desert bighorn sheep occur in desert mountain ranges from White Mountains of Mono and Inyo counties south to the San Bernardino Mountains and southeastward to the Mexican border with an isolated population occurs in the San Gabriel Mountains (CDFW 1990).	<b>Unlikely.</b> No historical occurrence records exist within the Analysis Area and no evidence of this species was observed during the field survey.
<b>PLANTS</b>				
<i>Croton wigginsii</i>  Wiggin's croton	Perennial shrub that blooms March through May. Inhabits desert dunes and Sonoran desert scrub in sandy areas (CNPS 2021g).  Elevation: 165 to 330 ft (CNPS 2021g).	Occurs in California, Arizona, Baja California and Sonora Mexico (CNPS 2021g).	Found in Imperial County (CNPS 2021g).	<b>Unlikely.</b> While no records of this species occur within the Analysis Area a small area of suitable sandy habitat in Sonoran desert scrub vegetation occurs on the western edge of the Analysis Area outside of the Project Area ( <b>Appendix E Photos 13 and 14</b> ).
<i>Cylindropuntia munzii</i>  Munz cholla	Perennial stem succulent that blooms in May. Occurs on sandy or gravelly soils in Sonoran desert scrub (CNPS 2021d).  Elevation: 500 to 1,970 ft (CNPS 2021d).	Found in California and Baja California (CNPS 2021d).	Located in Imperial and Riverside counties (CNPS 2021d).	<b>Possible.</b> A small area of potential suitable sandy substrate occurs at the western edge of the Analysis Area outside of the Project Area ( <b>Appendix E Photos 13 and 14</b> ).
<i>Euphorbia platysperma</i>  Flat-seeded spurge	Annual herb that blooms February through September. Occurs in desert dunes and sandy areas in Sonoran desert scrub (CNPS 2021a).  Elevation: 215 to 330 ft (CNPS 2021a).	Located in California, Arizona, Baja California and Sonora Mexico (CNPS 2021a).	Found in Imperial, Riverside, San Diego counties and possibly in San Bernardino County (CNPS 2021a).	<b>Possible.</b> A small area of potential suitable sandy substrate occurs at the western edge of the Analysis Area outside of the Project Area ( <b>Appendix E Photos 13 and 14</b> ).



Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Lupinus excubitus</i> <i>var. medius</i>  Mountain Springs bush lupine	Perennial shrub that blooms March through May. Inhabits Pinyon and juniper woodland and Sonoran desert scrub (CNPS 2021c).  Elevation: 1,395 to 4,495 ft (CNPS 2021c).	Occurs in California and Baja California (CNPS 2021c).	Found in Imperial and San Diego counties (CNPS 2021c).	<b>Unlikely.</b> While the Analysis Area includes Sonoran desert scrub habitats no historical records for this species exist within the analysis Area.
<i>Pholisma sonorae</i>  Sand food	Perennial herb (parasitic) that blooms April through June (CNPS 2021f). Inhabits sandy soils, sand dunes and other sandy areas. It is a root parasite of desert shrubs (Arizona Rare Plant Committee 2001, CNPS 2021f). Known hosts include <i>Ambrosia dumosa</i> , <i>Eriogonum deserticola</i> , <i>Pluchea sericea</i> , <i>Tiquilia palmeri</i> and <i>T. plicata</i> (Yatskievych 1994).  Elevation: In California, below 656 ft (CNPS 2021f). In Arizona, below 1,345 ft (AGFD 2004).	Occurs in Arizona and California, U.S. and the Mexican states of Baja California and Sonora (AGFD 2004, CNPS 2021f).	Known only from Imperial County (CNPS 2021f).	<b>Unlikely.</b> Small pockets of suitable sandy soils occur in the western extent of the Analysis Area and the suitable host plant ( <i>Ambrosia dumosa</i> ) occurs within the Analysis Area ( <b>Appendix E Photos 13 and 14</b> ).
<i>Xylorhiza orcuttii</i>  Orcutt's woody-aster	Perennial herb that blooms March through April. Inhabits Sonoran desert scrub (CNPS 2021e).  Elevation: 0 to 2,000 ft (CNPS 2021e).	Occurs in California and Baja California (CNPS 2021e).	Found in Imperial and San Diego counties (CNPS 2021e).	<b>Unlikely.</b> No historical records exist for this species within the Analysis Area. However, suitable Sonoran desert scrub occurs within the analysis Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<b>REPTILES</b>				
<i>Gopherus agassizii</i> <sup>1</sup> Mojave Desert Tortoise	Inhabits valleys, bajadas and hills with sandy loam or rocky soils in Mojave desertscrub and Lower Colorado River Valley subdivision of the Sonoran Desert. To escape extreme temperatures, excavates burrows under vegetation or rocks. Will also use natural or manmade caves. Typically associated with areas of creosote bush, areas with other sclerophyll shrubs and with small cacti or areas with Joshua trees. Forages on grasses, forbs and succulents (AGFD 2010a). In the contact zone between the species (i.e., the Black Mountains), <i>G. morafkai</i> generally is found in foothills, hillside slopes and more mountainous terrain than <i>G. agassizii</i> that is typically found on alluvial fans and valley bottoms (Edwards et al. 2015). In California, found in arid sandy or gravelly locations along riverbanks, washes, sandy dunes, alluvial fans, canyon bottoms, desert oases, rocky hillsides, creosote flats, and hillsides (CHS 2021b)  Elevation: Range-wide, from below sea level in Death Valley to 5,000 ft in elevation (AGFD 2010a). Possibly up to 7,200 ft (CDFW 2000)	Occurs in the Mojave desert of Arizona, California, Nevada and Utah (Edwards et al. 2015, Murphy et al. 2011).	Throughout the Mojave Desert and south along the Colorado River along the east side of the Salton Basin in the Sonoran Desert but absent from the Coachella Valley except from the Boyd Deep Canyon Research Center area (CHS 2021b). Introduced population in Anza-Borrego State Park in San Diego County (CHS 2021b).	<b>Present.</b> Active Tortoise burrows and scat have been detected within the Analysis Area. Records of this species occur within the Analysis Area ( <b>Appendix A</b> ).

<sup>1</sup> Threatened, populations north and west of the Colorado River (USFWS 1980, USFWS 1990), critical habitat (USFWS 1980, USFWS 1994); Similarity of appearance (threatened) (USFWS 1990).

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<p><i>Uma notata</i>  Colorado Desert fringe-toed lizard</p>	<p>Occupies fine, loose, wind-blown sand dunes, dry lakebeds, sandy beaches or riverbanks, desert washes, and sparse desert scrub in the Colorado and Sonoran desert (CDFW 2000). Utilize sparsely-vegetated arid areas and burrows as refugia (CHS 2021a).  Elevation: sea level to 1,600 ft (CHS 2021a).</p>	<p>Occurs in California and Baja California (CHS 2021a).</p>	<p>Found in extreme southeast California in the Colorado Desert from the Salton Sea and Imperial sand hills east to the Colorado River, south to the Colorado River delta and on into northeastern Baja California, and east to Borrego Mountain (CHS 2021a).</p>	<p><b>Possible.</b> A small area of potential suitable sandy substrate occurs at the western edge of the analysis Area outside of the Project Area (<b>Appendix E Photos 13 and 14</b>).</p>

**Table 6. CEQA Special-Status Species**

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<b>BIRDS</b>				
<p><i>Melanerpes uropygialis</i></p> <p>Gila woodpecker</p>	<p>This species utilizes desert riparian and desert wash habitats, and orchard-vineyard and urban areas particularly in shade trees and date palm groves County (CDFW 1990). Utilizes areas with cottonwood and other desert riparian trees, shade trees, and date palms in California County (CDFW 1990). Also uses saguaros where available (CDFW 1990).</p> <p>Elevation: near sea level to 3,940 ft (NatureServe 2021e).</p>	<p>Found in southeast California, southwest Nevada, southern Arizona, southwest New Mexico and south into Mexico (Corman 2005a).</p>	<p>Resident in southern California along the Colorado River, and locally near Brawley, Imperial County (CDFW 1990).</p>	<p><b>Low potential of occurrence.</b> because the majority of the Analysis Area does not contain appropriate habitat. We assessed all washes within the Analysis Area for woodpecker suitability and all washes were characterized by sparse ironwood, ocotillo, and low density of blue palo verde. There is one occurrence record for this species within the California Natural Diversity Database in these quadrangles (CDFW 2021) in an unnamed wash south of Indian Wash about 2.25 miles West of the Cargo Mountains from March 2002. We inspected this wash (<b>Appendix E Photo 17</b>) and the washes within the Analysis Area varied widely from the occurrence site. The washes in the Analysis Area are dissimilar to the occurrence site as represented in <b>Appendix E Photo 18</b>.</p>
<p><i>Taxostoma crissale</i></p> <p>Crissal thrasher</p>	<p>Inhabits dense sagebrush and other shrubs in desert washes and desert riparian areas with juniper and pinyon-juniper. Frequently found in habitats with mesquite, screwbean mesquite, ironwood, catclaw acacia, and arrowweed willow (CDFW 1990).</p> <p>Elevation: up to 5,900 ft (CDFW 1990).</p>	<p>Found throughout southwestern portions of the U.S. from southeastern California east through southern Nevada, southwestern Utah, norther Arizona, and southwestern New Mexico to western Texas and south to south-central Mexico and northeast Baja California (Shuford and Gardali 2008b).</p>	<p>Eastern Mojave Desert of Sand Bernardino and southeaster Inyo counties also resident in Imperial, Coachella, and Borrego valleys (CDFW 1990).</p>	<p><b>Moderate potential of occurrence</b> due to range, appropriate habitat, but no occurrence record or observation during field investigation.</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Taxostoma lecontei</i> Le Conte's thrasher	Utilize open desert wash, desert scrub, alkali desert scrub, desert succulent shrub habitats, and in Joshua tree habitat with scattered shrubs. Frequently use saltbush and cholla (CDFW 2005). Rarely occurs in habitats consisting entirely of creosotebush (NatureServe 2021f).  Elevation: below sea level to 5,250 ft, mostly between 0 to 492 ft(NatureServe 2021f).	Occur throughout southwestern U.S. and northwestern Mexico (NatureServe 2021f, Sheppard 2019).	Found in southern California deserts from southern Mono County south to the Mexican border, and in western and southern San Joaquin Valley. Formerly found north to Fresno County and Kern County (CDFW 2005).	<b>Low potential of occurrence.</b> The low density cholla and creosotebush habitat dominance within the Analysis Area provides marginal habitat.
<i>Falco mexicanus</i> Prairie falcon	Breeds in open habitats, including shrub-step desert, grasslands with or without shrubs, and alpine tundra when cliffs or bluffs are present to provide nesting sites (Steenhof 2013). In Arizona, this species is found nesting in Sonoran desertscrub, in areas with mixed grassland and cold-temperate desertscrub, and pinyon pine-juniper or Madrean evergreen oak woodlands. Occasionally nest in areas of alpine grassland and mixed conifer forests. Open areas for foraging and the availability of nest sites are the primary determinants of the species distribution during the breeding season (Moors 2005). Nests primarily on cliff ledges but also use trees, buildings, electrical towers, and cliffs created by mines or quarries (Steenhof 2013). When food is plentiful, this raptor travels the least possible distance necessary to secure required food supplies but have been known to forage up to 15 miles from the nest (Tesky 1994b). During the fall and winter, increased numbers of individuals occur in open grasslands, creosote-bursage habitats, and agricultural areas (Moors 2005, Steenhof 2013).  Elevation: Breeds 500–9,000 ft (Moors 2005). Elsewhere, up to 11,000 ft (Steenhof 2013).	Not considered a true migrant but undertakes seasonal movements in response to food availability and typically has widely separated nesting, post-nesting and wintering areas (Steenhof 2013). However, populations in California are resident. Breeds from south-central British Columbia and southern Alberta, through the western U.S., including western Texas, and into central Baja California, Chihuahua, Coahuila, central Durango, and San Luis Potosí. Winter range extends west to the Pacific Coast and eastward to Minnesota, northwest Iowa, east-central Missouri, central Oklahoma, and most of Texas. Mexican range expands slightly southward to include Baja California Sur, Zacatecas and possibly even to Oaxaca (Steenhof 2013).	Occurs throughout the state (Moors 2005).	<b>High potential of occurrence.</b> The Analysis Area occurs within suitable habitat in the range of this species and 2 occupied eyries were detected within the analysis Area ( <b>Appendix E Photos 8 and 9</b> ).

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<p><i>Athene cunicularia hypugaea</i></p> <p>Western burrowing owl</p>	<p>This species inhabits flat or gently-sloping treeless and sparsely vegetated areas in deserts and grasslands (Poulin et al. 2011). In Arizona, this species most commonly breeds in grazed grasslands and open disturbed areas such as the edges of agricultural fields, fallow fields, bladed areas, irrigation embankments, airports and golf courses. This species additionally breeds in sparsely vegetated Sonoran or cold-temperate desertscrub (Martin 2005). Areas with burrows and unobstructed perches are favored (Martin 2005). Largely reliant on burrows dug by mammals but, on rare occasion, will dig their own holes (Klute et al. 2003, Poulin et al. 2011). Northern populations are migratory, and habitat used migratory and winter period is similar to that used for breeding but with some evidence of increased reliance on agricultural areas (Klute et al. 2003, Poulin et al. 2011).</p> <p>Elevation: In Arizona, 650–6,140 ft (AGFD 2001).</p>	<p>This species is a partial migrant, with northern populations being primarily migratory (Poulin et al. 2011). In southwestern states, individuals appear to make yearly decisions to remain on their breeding grounds or migrate, likely based on environmental conditions (Ogonowski and Conway 2009, Poulin et al. 2011). The hypugaea subspecies breeds in Alberta, British Columbia, Manitoba and Saskatchewan, Canada and 19 U.S. states including Arizona, California, Colorado, Idaho, Iowa, Kansas, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming (Klute et al. 2003). The breeding range extends southward into the Mexican states of Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Nuevo Leon, San Luis Potosí, Sinaloa, Sonora, Tamaulipas and Zacatecas (Poulin et al. 2011). Winters primarily in Arizona, California, Louisiana, New Mexico and Texas U.S., and southward through Mexico, excluding the Yucatan Peninsula, to Guatemala and Honduras, with rare reports as far south as Panama (Klute et al. 2003, Poulin et al. 2011).</p>	<p>Found nesting throughout the state where favorable habitat is present. Southern populations are primarily resident whereas northern populations are migratory and are on their breeding grounds mid-March through as late as mid-October (Martin 2005).</p>	<p><b>Low potential of occurrence</b> due to range, appropriate habitat, but no historical occurrence records (Appendix D). In addition, no Ebird observations have been made for this species within or adjacent to the Analysis Area (eBird 2021). No observation of this species or potential burrows were recorded during the field survey. However, potentially suitable habitat occurs on the western and southern ends of the Analysis Area outside of the Project Area (<b>Figure 6 and Appendix E Photos 11 and 12</b>).</p>
<p><i>Poliptila melanura</i></p> <p>Black-tailed gnatcatcher</p>	<p>This species is associated with Mojave and Sonoran desert scrub habitats. These habitats include mesquite, creosotebush, ocotillo and various cactus species (Tinant 2006).</p>	<p>Black-tailed gnatcatchers range from southern Nevada to northern Mexico and from southeastern California to southwestern New Mexico (Tinant 2006).</p>	<p>In California this species occurs only in southeastern California within suitable Mojavian and Sonoran desert scrub habitats (Tinant 2006).</p>	<p><b>High potential of occurrence.</b> The analysis Area occurs within suitable habitat within the range of this species and individuals were detected during the field survey.</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<b>INSECTS</b>				
<i>Anomala hardyorum</i> Hardy's dune beetle	Member of the family Scarabaeidae. Most often found on north or east facing dune slip faces (UFWS 2006b).	Endemic to Algodones Dunes in North America (UFWS 2006b).	Known from two populations identified in Algodones Dune system in Imperial County (UFWS 2006b).	<b>No potential of occurrence.</b> No appropriate dune slip faces occur within the analysis Area.
<i>Apiocera warneri</i> Glamis sand fly	Member of the family Apioceridae. Flower-loving flies that are most common in dry, sandy habitats (Yeates and Irwin 1996).	Family is known in the deserts of North America, South America, and Australia (Yeates and Irwin 1996).	Known from southern California (NatureServe 2021b).	<b>Low potential of occurrence.</b> A small area of sandy habitat occurs within the western edge of the Analysis Area outside of the Project Area.
<i>Cyclocephala wandae</i> Wandae dune beetle	Member of the family Scarabaeidae. Habitat information is lacking (UFWS 2006b).	Endemic to Algodones Dunes in North America (UFWS 2006b).	Known only from collections in the Algodones Dunes in Imperial County (UFWS 2006b).	<b>No potential of occurrence.</b> The Analysis Area occurs outside of the known range and suitable dune habitat.
<i>Effertia macroxipha</i> Glamis robberfly	In the genus <i>Effertia</i> . High diversity in arid or semi-arid ecosystems. Tend to perch close to the ground and often remain immobile.	Genus occur throughout the New World.	Known from southern California (Forbes 1988, NatureServe 2021c).	<b>Moderate Potential of occurrence.</b> The Analysis Area occurs within the known range.
<i>Euparagia unidentata</i> Algodones euparagia	In the family Vespidae. Inhabits desert regions (Bohart 1989). Limited habitat information available.	Endemic to Algodones Dunes in North America (Nature Serve 2021d, UFWS 2006b).	Endemic to Algodones Dunes in Imperial County (Nature Serve 2021d, UFWS 2006b).	<b>No potential of occurrence.</b> The Analysis Area occurs outside of the known range and suitable habitat.
<i>Microbembex elegans</i> Algodones elegant sand wasp	In the family Sphecidae. Small sized. Inhabits active slip faces within sand dune systems often found at the base of shrubs where detritus collects (UFWS 2006b).	Species in genus <i>Microbembix</i> are found in North and South America. Endemic to Algodones Dunes in North America (UFWS 2006b).	Known from two populations identified in Algodones Dune system in Imperial County (UFWS 2006b).	<b>No potential of occurrence.</b> The Analysis Area occurs outside of the known range and suitable habitat.
<i>Perdita algodones</i> Algodones perdita	Dune habitats (UFWS 2006b) Limited habitat information available.	Endemic to Algodones Dunes in North America (UFWS 2006b).	Known in the vicinity of Glamis, in Imperial County (UFWS 2006b).	<b>No potential of occurrence.</b> The Analysis Area occurs outside of the known range and suitable habitat.
<i>Perdita frontalis</i> Imperial perdita	All species in <i>Perdita</i> genus nest in sandy or partially sandy soil. Specialize on a variety plant families (Portman, Griswold, and Nell 2016).	Southwestern U.S. and Mexico (Portman, Griswold, and Nell 2016).	Southern California	<b>Low potential of occurrence.</b> A small area of sandy habitat occurs within the western edge of the Analysis Area outside of the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Perdita stephanomeriae</i> A miner bee	All species in Perdita genus nest in sandy or partially sandy soil. Specialize on a variety of plant families (Portman and Griswold 2017, Portman, Griswold, and Nell 2016).	Southwestern U.S. and Mexico (Portman, Griswold, and Nell 2016).	Southern California	<b>Low potential of occurrence.</b> A small area of sandy habitat occurs within the western edge of the Analysis Area outside of the Project Area.
<i>Pseudocotalpa andrewsi</i> Andrew's dune scab beetle	In the family Scarabaeidae. Shining leaf chafer that inhabits drifting sand between dunes (USFW 2006a)	Endemic to Algodones Dunes in North America (UFWS 2006b).	Known from two populations identified in Algodones Dune system in Imperial County (UFWS 2006b).	<b>No potential of occurrence.</b> The Analysis Area occurs outside of suitable dune habitat.
<b>MAMMALS</b>				
<i>Antrozous pallidus</i> Pallid bat	Inhabits a wide variety of habitats including grasslands, shrublands, woodlands, and forest from sea level to mixed conifer forests (CDFW 1990c). Most common in open, dry habitats with rocky areas for roosting. Day roosts in caves, crevices, mines, and occasionally in hollow trees and buildings (CDFW 1990c). Night roots may be in more open sites including porches and buildings (CDFW 1990c).  Elevation: 1,900 to 6,560 ft (NatureServe 2021a).	Ranges throughout western North America, from British Columbia's southern interior, south to Queretaro and Jalisco, and east to Texas. Isolated population in Cuba (WBWG 2018). Most abundant in xeric ecosystems, including the Great Basin, Mojave, and Sonoran Deserts (WBWG 2018).	Locally common at low elevations in California. Occurs throughout California except for the high Sierra Nevada to Kern Count and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County (CDFW 1990c).	<b>High potential of occurrence.</b> This species has been observed within the Analysis Area ( <b>Figure 7</b> ) and suitable crevice and mine roosting habitat occurs within the Analysis Area ( <b>Appendix E Photos 15 and 16</b> ).
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	Forages in edge habitats along streams and adjacent to or within a variety of wooded habitats. Roosts in cliffs, caves, mines, tunnels, and buildings (Diamond and Diamond 2014). Has a large home range and foraging distances (up to 93 miles) (Sherwin and Piaggio 2005).  Elevation: Below 10,830 ft (Hammerson 2014).	Occurs from southern British Columbia, Canada and south through all western U.S. states eastward to the Black Hills of South Dakota and the Edwards Plateau in Texas. Isolated populations also exist in Oklahoma, Kansas, Arkansas, Missouri, Illinois, Indiana, Ohio, Kentucky, Virginia, and West Virginia. Range extends to the Isthmus of Tehuantepec, Mexico (Hammerson 2014).	Found throughout California but details of its distribution are not well known (CDFW 2000b).	<b>High potential of occurrence.</b> This species has been observed within the Analysis Area ( <b>Figure 7</b> ) and suitable mine roosting habitat occurs within the Analysis Area ( <b>Appendix E Photos 15 and 16</b> ).



Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<p><i>Eumops perotis californicus</i></p> <p>Greater western mastiff bat</p>	<p>This species is found in areas with cliffs, which are used for roosting, in desert scrub, chaparral, oak woodland, ponderosa pine belt, mixed conifer forests and high elevation meadows (Siders and Pierson 2005). Maternity roosts occur in exfoliating rock slabs, crevices in boulders and buildings (Siders and Pierson 2005). The morphology of this species prevents it from drinking from water sources less than 98 ft in length and the availability of water limits its distribution across the landscape (AGFD 2014b). In Arizona, this species is a year-round resident that occurs in rocky canyons with abundant roosting crevices. Forages widely from roost sites in lower and upper Sonoran desertscrub near cliffs (AGFD 2014b) and has been captured more than 18 miles from roost sites (Siders and Pierson 2005).</p> <p>Elevation: In Arizona, 240–8,475 ft (AGFD 2014b). Foraging up to 10,000 ft in California (WBWG 2018).</p>	<p>Occurs in Arizona, California, Nevada, New Mexico, Texas and Utah, U.S. and the Mexican states of Baja California, Chihuahua, Coahuila, Durango, Sinaloa, Sonora and Zacatecas (AGFD 2014b, Hammerson 1994, Siders and Pierson 2005).</p>	<p>Found in southeastern San Joaquin Valley and Coastal Ranges from Monterey County southward through southern California, from the coast eastward to the Colorado Desert (CDFW 1990).</p>	<p><b>High potential of occurrence.</b> This species has been observed within the Analysis Area (<b>Figure 7</b>) and suitable rock slabs and crevice roosting habitat occurs within the Analysis Area.</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<p><i>Macrotus californicus</i></p> <p>California leaf-nosed bat</p>	<p>Typically forages along washes within 6.2 miles of their roost sites (Brown 2005). Primarily consumes insects but also consumes fruits (AGFD 2014a, Brown 2005). In Arizona, this species is a year-round resident of Sonoran Desertscrub. Consumes primarily insects taken on the wing or gleaned from vegetation, but have also been reported to feed on fruits, including those of cacti. Roost sites have large areas of ceiling and flying space, and include abandoned underground mines, caves, and rock shelters (AGFD 2014a).</p> <p>Elevation: In Arizona, below 4,000 ft (AGFD 2014a). In California, records are below 2,000 ft (CDFW 1990a).</p>	<p>Occurs in Arizona, California, Nevada and Utah, U.S. and the Mexican states of Baja California, Baja California Sur, Chihuahua, Sinaloa, Sonora and Tamaulipas (AGFD 2014a, Hammerson 2015a). (CDFW 1990a).</p>	<p>Found from Riverside, Imperial, San Diego, and San Bernardino counties. Historically occurred from Los Angeles to San Diego. Fairly common in some areas along the Colorado River (CDFW 1990a).</p>	<p><b>High potential of occurrence.</b> This species has been previously observed within the Analysis Area, and suitable mine roosting habitat occurs within the Analysis Area (<b>Figure 7 and Appendix E Photos 15 and 16</b>). In Addition, during the habitat assessment visit, stringy black guano and urine staining was detected on the sides of mines within the Analysis Area indicating that this species is present.</p>
<p><i>Myotis velifer</i></p> <p>Cave myotis</p>	<p>Forages in desertscrub vegetation and is tolerant of high temperatures and low humidity. Roosts in caves, tunnels, abandoned underground mines, buildings and under bridges within a few miles of water. In Arizona, hibernation roosts are in wet mine tunnels above 6,000 ft (AGFD 2002a). In California, utilize desert scrub, desert succulent shrub, desert wash, and desert riparian.(CDFW 1990b).</p> <p>Elevation: 300–8,800 ft (AGFD 2002a).</p>	<p>Occurs in Arizona, California, Kansas, Nevada, New Mexico, Oklahoma, Texas and Utah, U.S. Range extends southward through Mexico to Honduras (AGFD 2002a, Hammerson 2015b).</p>	<p>Restricted in California to lowlands of the Colorado River and adjacent mountain ranges, in San Bernardino, Riverside and Imperial counties, although more common farther east (CFDW 1990b).</p>	<p><b>Moderate potential of occurrence.</b> An observation record for this species occurs adjacent to the Analysis Area and the Analysis Area contains suitable mine roosting habitat <b>Figure 7 and Appendix E Photos 15 and 16</b>).</p>
<p><i>Nyctinomops femorosaccus</i></p> <p>Pocketed free-tailed bat</p>	<p>Inhabits pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Roosts in rock crevices, caverns, or buildings. Drinks water from sources with open access and large surface areas (CDFW 2000a).</p> <p>Elevation: near sea level to about 7,300 ft (WBWG 2018).</p>	<p>Occurs in western North America from southern California, central Arizona, southern New Mexico, and western Texas, south into Mexico including Baja California (WBWG 2018).</p>	<p>Found in Riverside, San Diego, and Imperial counties. Rare in California (CDFW 2000a).</p>	<p><b>Moderate potential of occurrence.</b> The Analysis Area occurs within the range of this species and suitable rock crevice roosting habitat occurs within the Analysis Area.</p>

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<b>PLANTS</b>				
<i>Astragalus insularis</i> var. <i>harwoodii</i>  Harwood's milk-vetch	Annual herb that blooms January through May. Inhabits sandy or gravely soils in desert dunes and Mohavean desert scrub (CNPS 2021i).  Elevation: 0 to 2,330 ft (CNPS 2021i).	Occurs in Arizona, California, Baja California, Nevada, and Sonora Mexico (CNPS 2021i).	Found in Imperial, Riverside, San Bernardino, and San Diego counties (CNPS 2021i).	<b>No potential of occurrence.</b> No suitable dune habitat in Mohavean desert scrub occurs within the analysis Area and no records for this species occur within the Analysis Area.
<i>Calliandra erophylla</i>  Pink fairy-duster	Perennial deciduous shrub that blooms January through March. Inhabits sandy or rocky soils in Sonoran desert scrub (CNPS 2021j).  Elevations: 393 to 4,925 ft (CNPS 2021j).	Occurs in Arizona, California, Baja California, New Mexico, Texas, Utah, and Sonora Mexico (CNPS 2021j).	Found in Imperial, Riverside, and San Diego counties (CNPS 2021j).	<b>High probability of occurrence.</b> An occurrence record for this species exists within the Analysis Area and the species was observed in very low densities within the Analysis Area ( <b>Figure 7</b> ).
<i>Croton wigginsii</i>  Wiggin's croton	Perennial shrub that blooms March through May. Inhabits desert dunes and Sonoran desert scrub in sandy areas (CNPS 2021g).  Elevation: 165 to 330 ft (CNPS 2021g).	Occurs in California, Arizona, Baja California and Sonora Mexico (CNPS 2021g).	Found in Imperial County (CNPS 2021g).	<b>Low probability of occurrence.</b> While no records of this species occur within the Analysis Area a small area of suitable sandy habitat in Sonoran desert scrub vegetation occurs on the western edge of the analysis Area outside of the Project Area.
<i>Ditaxis claryana</i>  Glandular ditaxis	Perennial herb that blooms October, December, January, February, and March. Inhabits sandy areas in Mojavean desert scrub and Sonoran desert scrub (CNPS 2021h).  Elevation: 0 to 1,525 ft (CNPS 2021h).	Occurs in Arizona, California, and Sonora Mexico (CNPS 2021h).	Found in Imperial, Riverside, and San Bernardino counties (CNPS 2021h).	<b>Low probability of occurrence.</b> While no records of this species occur within the Analysis Area a small area of suitable sandy area in Sonoran desert scrub vegetation occurs on the western edge of the analysis Area outside of the Project Area.
<i>Palafoxia arida</i> var. <i>gigantea</i>  Giant Spanish needle	Annual/perennial herb that blooms January through May. Inhabits desert dunes (CNPS 2021b).  Elevation: 50 to 330 ft (CNPS 2021b).	Occurs in California and Sonora Mexico (CNPS 2021b).	Known only from Imperial County (CNPS 2021b).	<b>No potential of occurrence.</b> No suitable dune habitats exist within the Analysis Area and no records of the species occur within the Analysis Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Pholisma sonorae</i> Sand food	Perennial herb (parasitic) that blooms April through June (CNPS 2021f). Inhabits sandy soils, sand dunes and other sandy areas. It is a root parasite of desert shrubs (Arizona Rare Plant Committee 2001, CNPS 2021f). Known hosts include <i>Ambrosia dumosa</i> , <i>Eriogonum deserticola</i> , <i>Pluchea sericea</i> , <i>Tiquilia palmeri</i> and <i>T. plicata</i> (Yatskievych 1994).  Elevation: In California, below 656 ft (CNPS 2021f). In Arizona, below 1,345 ft (AGFD 2004).	Occurs in Arizona and California, U.S. and the Mexican states of Baja California and Sonora (AGFD 2004, CNPS 2021f).	Known only from Imperial County (CNPS 2021f).	<b>Low potential of occurrence.</b> Small pockets of suitable sandy soils occur in the western extent of the Analysis Area and the suitable host plant ( <i>Ambrosia dumosa</i> ) occurs within the Analysis Area.
<b>REPTILES</b>				
<i>Gopherus agassizii</i> <sup>2</sup> Mojave Desert Tortoise	Inhabits valleys, bajadas and hills with sandy loam or rocky soils in Mojave desertscrub and Lower Colorado River Valley subdivision of the Sonoran Desert. To escape extreme temperatures, excavates burrows under vegetation or rocks. Will also use natural or manmade caves. Typically associated with areas of creosote bush, areas with other sclerophyll shrubs and with small cacti or areas with Joshua trees. Forages on grasses, forbs and succulents (AGFD 2010a). In the contact zone between the species (i.e., the Black Mountains), <i>G. morafkai</i> generally is found in foothills, hillside slopes and more mountainous terrain than <i>G. agassizii</i> that is typically found on alluvial fans and valley bottoms (Edwards et al. 2015).  Elevation: Range-wide, from below sea level in Death Valley to 5,000 ft in elevation (AGFD 2010a).	Occurs in the Mojave desert of Arizona, California, Nevada and Utah (Edwards et al. 2015, Murphy et al. 2011).	More common in southern, central and the extreme northeast portion of state, but occurs throughout the state where suitable habitat exists (AGFD 2011).	<b>High potential of occurrence.</b> Active Tortoise burrows and scat have been detected within the Analysis Area. Records of this species occur within the Analysis Area ( <b>Appendices A and E Photo 19</b> ).

<sup>2</sup> Threatened, populations north and west of the Colorado River (USFWS 1980, USFWS 1990), critical habitat (USFWS 1980, USFWS 1994); Similarity of appearance (threatened) (USFWS 1990).

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur
<i>Phrynosoma mcallii</i> Flat-tailed horned lizard	Inhabits hard packed sandy flats and low dunes in Lower Colorado River desertscrub community, particularly in areas with creosote-white bursage vegetation (USFWS Brennan 2008, 2011).  Elevation: Below 820 ft (AGFD 2010b).	Occurs in Arizona and California, U.S. and the Mexican states of Baja California and Sonora (USFWS 2011).	Found in the extreme southwestern portion of the state in the Yuma Desert (AGFD 2010b, USFWS 2011).	<b>No potential of occurrence.</b> No suitable hard packed sandy flats or low dunes occur within the Analysis Area. No records for this species occur within the Analysis Area.
<i>Uma notata</i> Colorado desert fringe-toed lizard	Occupies fine, loose, wind-blown sand dunes, dry lakebeds, sandy beaches or riverbanks, desert washes, and sparse desert scrub in the Colorado and Sonoran desert (CDFW 2000). Utilize sparsely-vegetated arid areas and burrows as refugia (CHS 2021a).  Elevation: sea level to 1,600 ft (CHS 2021a).	Occurs in California and Baja California (CHS 2021a).	Found in extreme southeast California in the Colorado Desert from the Salton Sea and Imperial sand hills east to the Colorado River, south to the Colorado River delta and on into northeastern Baja California, and east to Borrego Mountain (CHS 2021a).	<b>Low potential of occurrence.</b> A small area of potential suitable sandy substrate occurs at the western edge of the Analysis Area outside of the Project Area ( <b>Figure 6 and Appendix E Photos 13 and 14</b> ).

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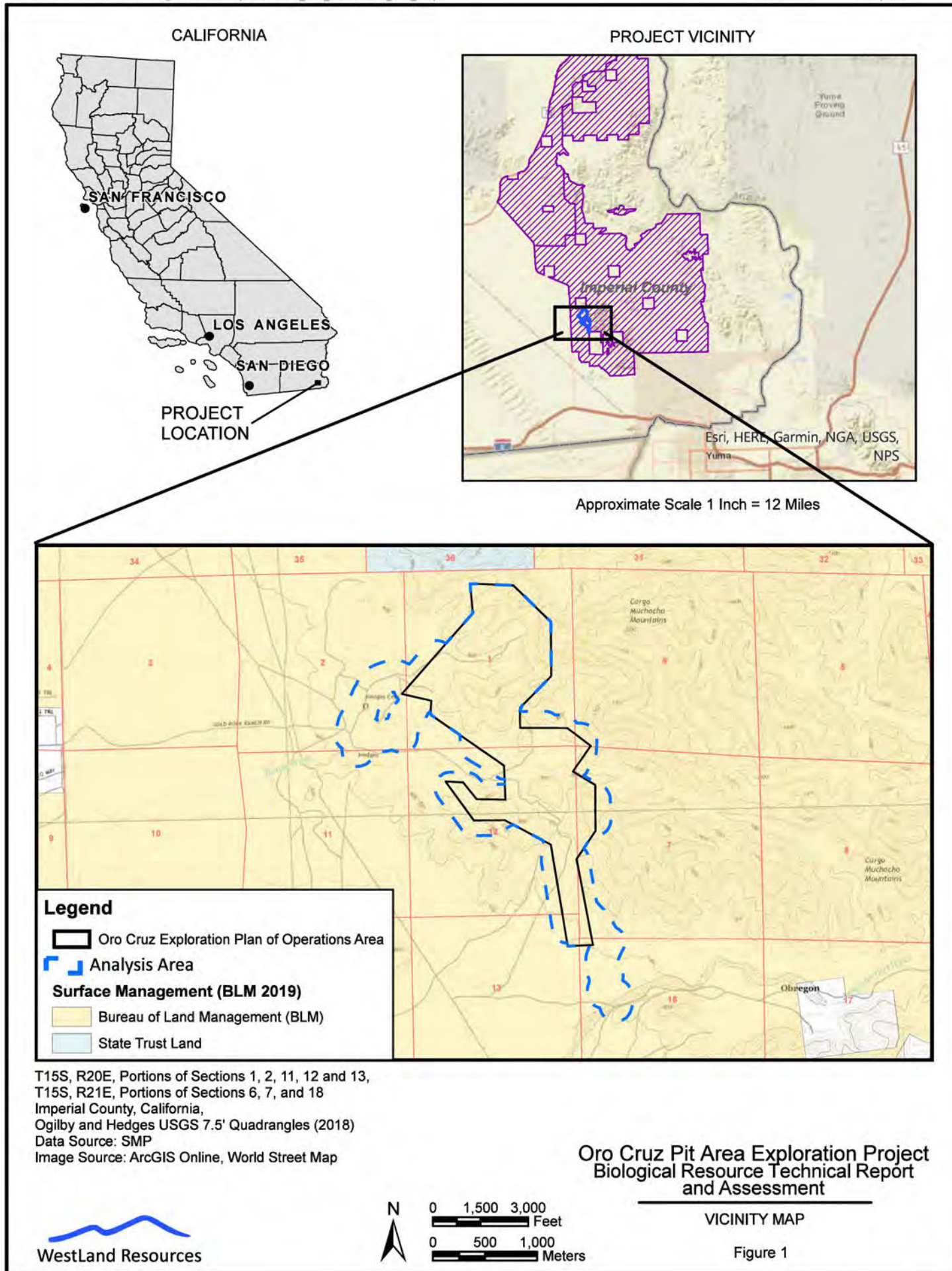
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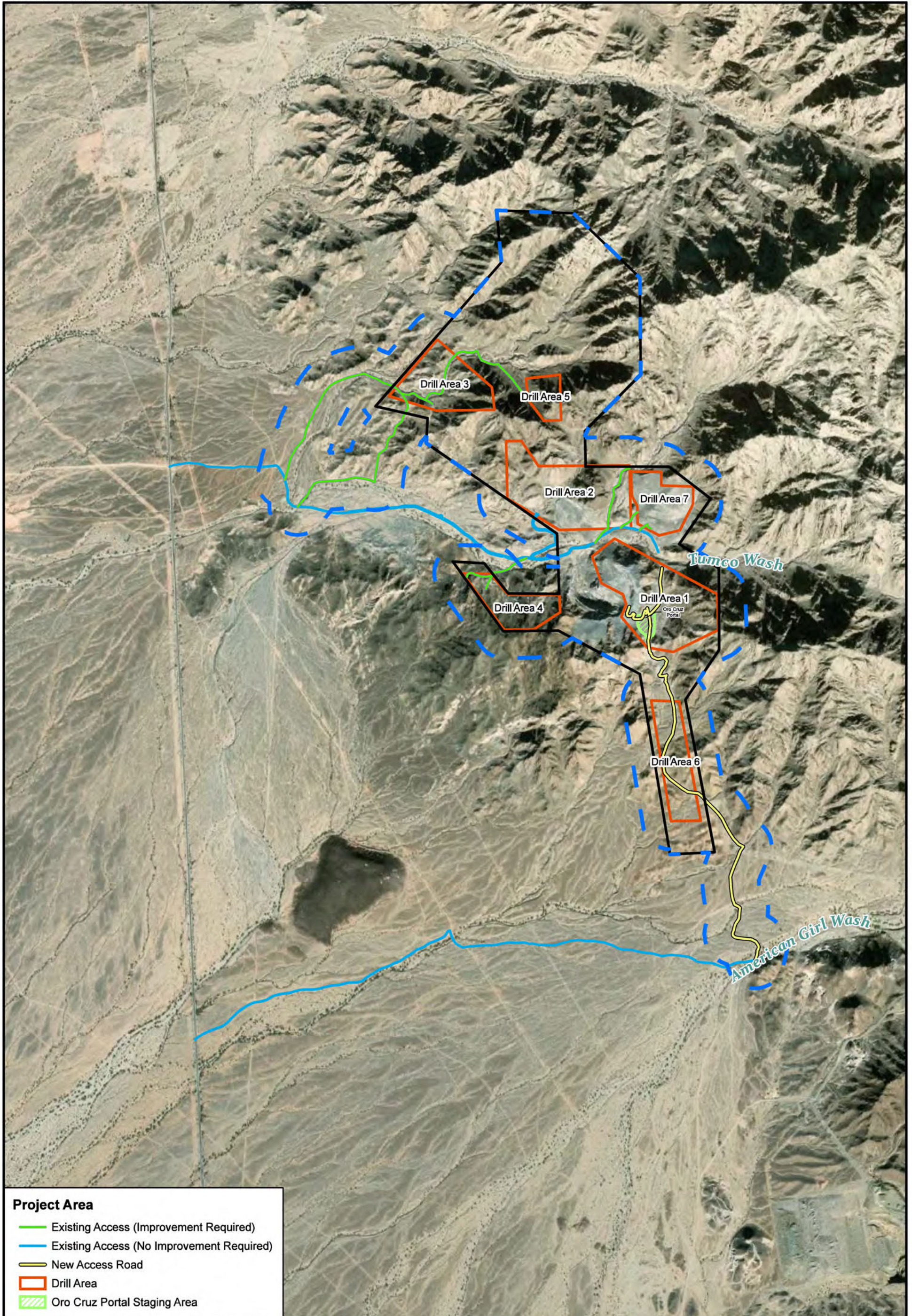
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## **FIGURES**







**Project Area**

- Existing Access (Improvement Required)
- Existing Access (No Improvement Required)
- New Access Road
- Drill Area
- Oro Cruz Portal Staging Area

T15S, R20E, Portions of Sections 1, 2, 11, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California,  
 Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2018



**Legend**

- Oro Cruz Exploration Plan of Operations Area
- Analysis Area

N

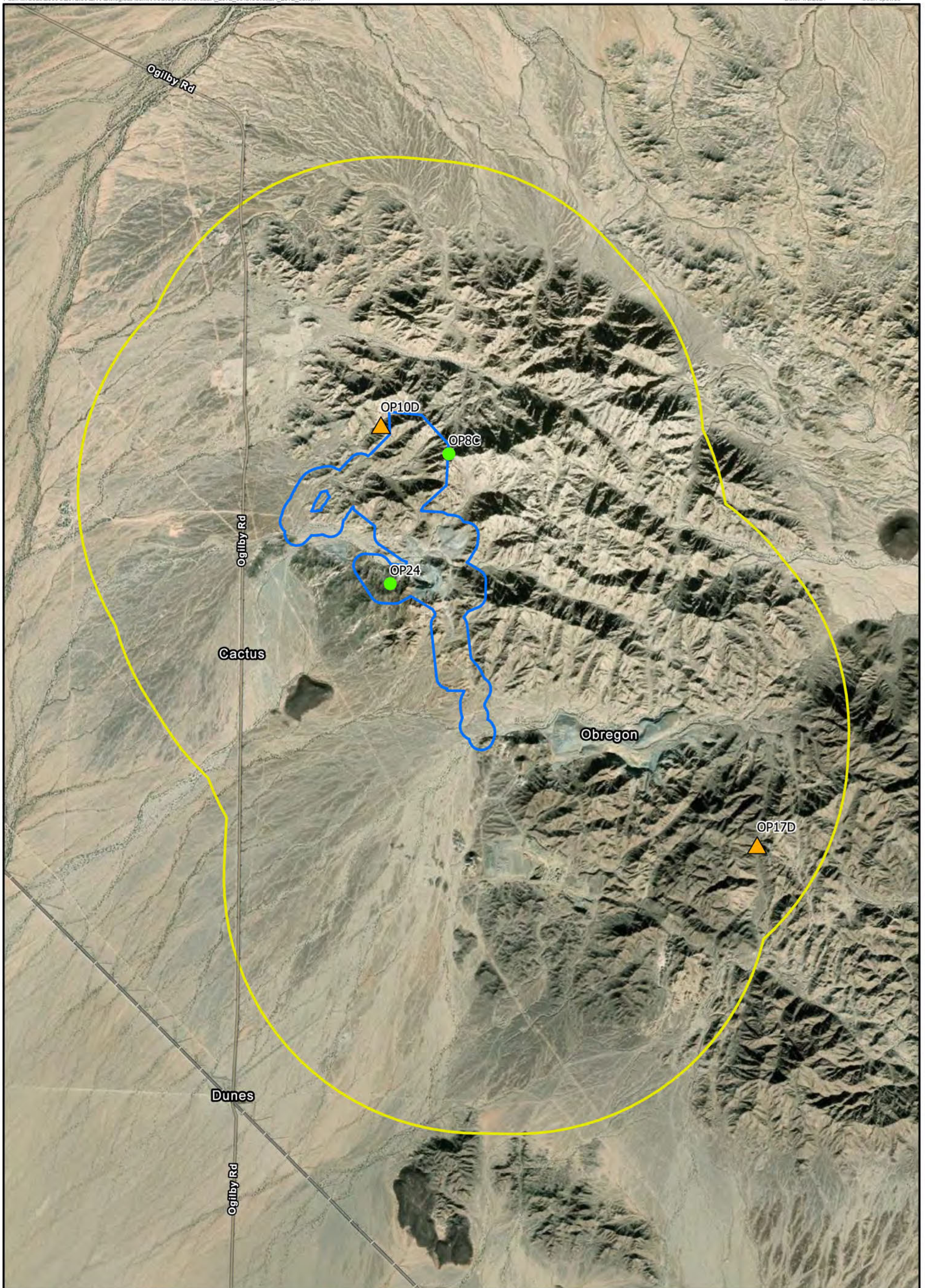
0 800 1,600  
 Feet

0 400 800  
 Meters

Oro Cruz Pit Area Exploration Project  
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ANALYSIS AREA  
 Figure 2



T14S, R20E, Portions of Sections 24-27, and 34-36,  
 T14S, R21E, Portions of Sections 19, and 29-32,  
 T15S, R20E, Portions of Sections 1-3, 10-15, 23-26, 35, and 36,  
 T15S, R21E, Portions of Sections 4-9, 16-21, and 28-32,  
 Imperial County, California,  
 Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2019

**Legend**

- ▭ Oro Cruz Raptor Survey Area
- ▭ Analysis Area

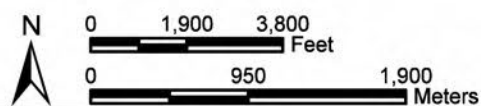
**Sightings**

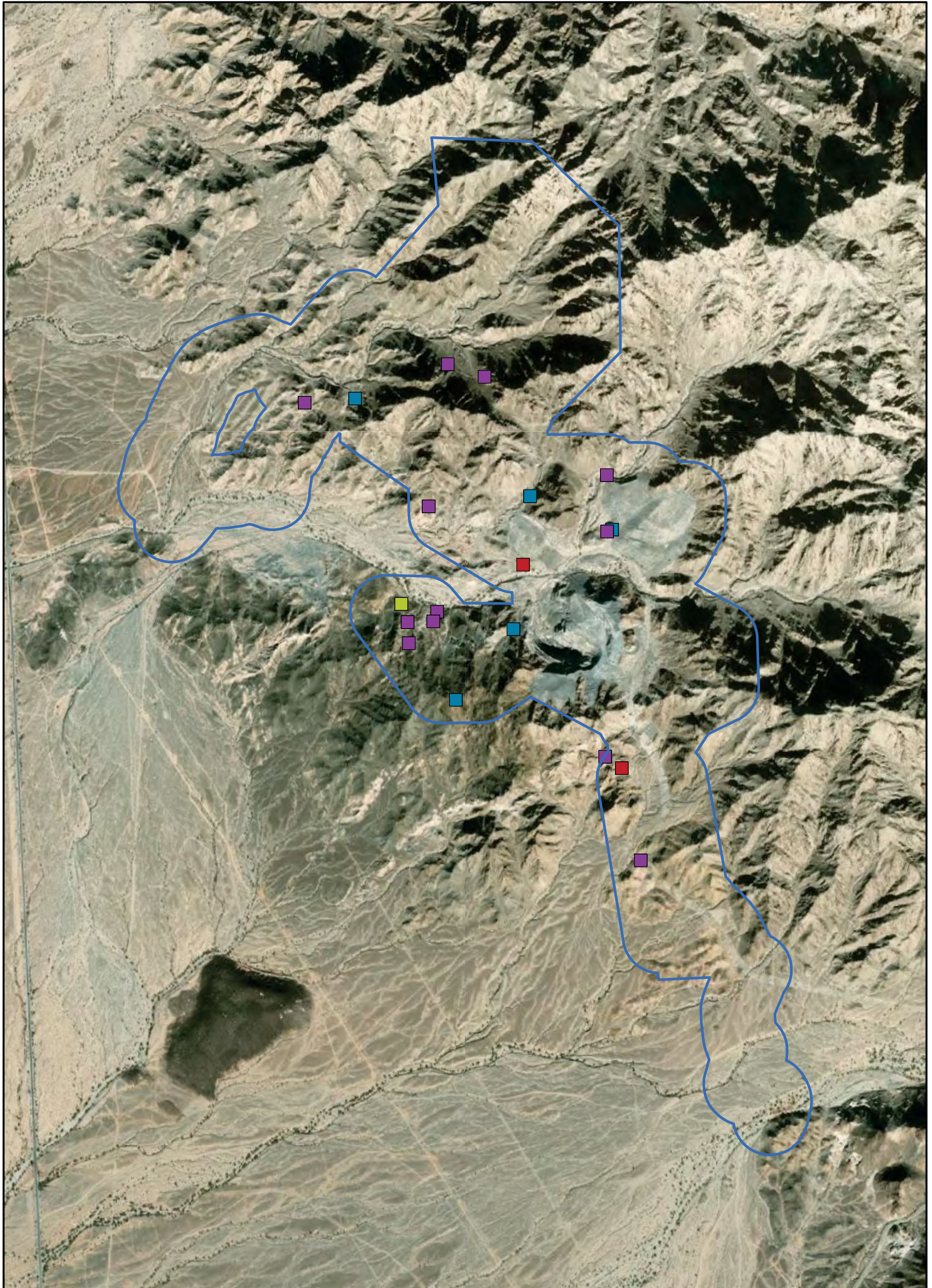
**Type**

- Eyrie
- ▲ Likely nest

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**RAPTOR SURVEY AREA**  
 Figure 3





T15S, R20E, Portions of Sections 1, 2, 11, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California,  
 Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2019

**Legend**

Analysis Area

**Bat Species Observed**

California leaf-nosed bat

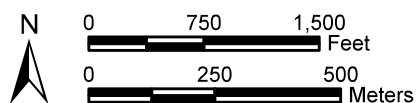
Myotis species

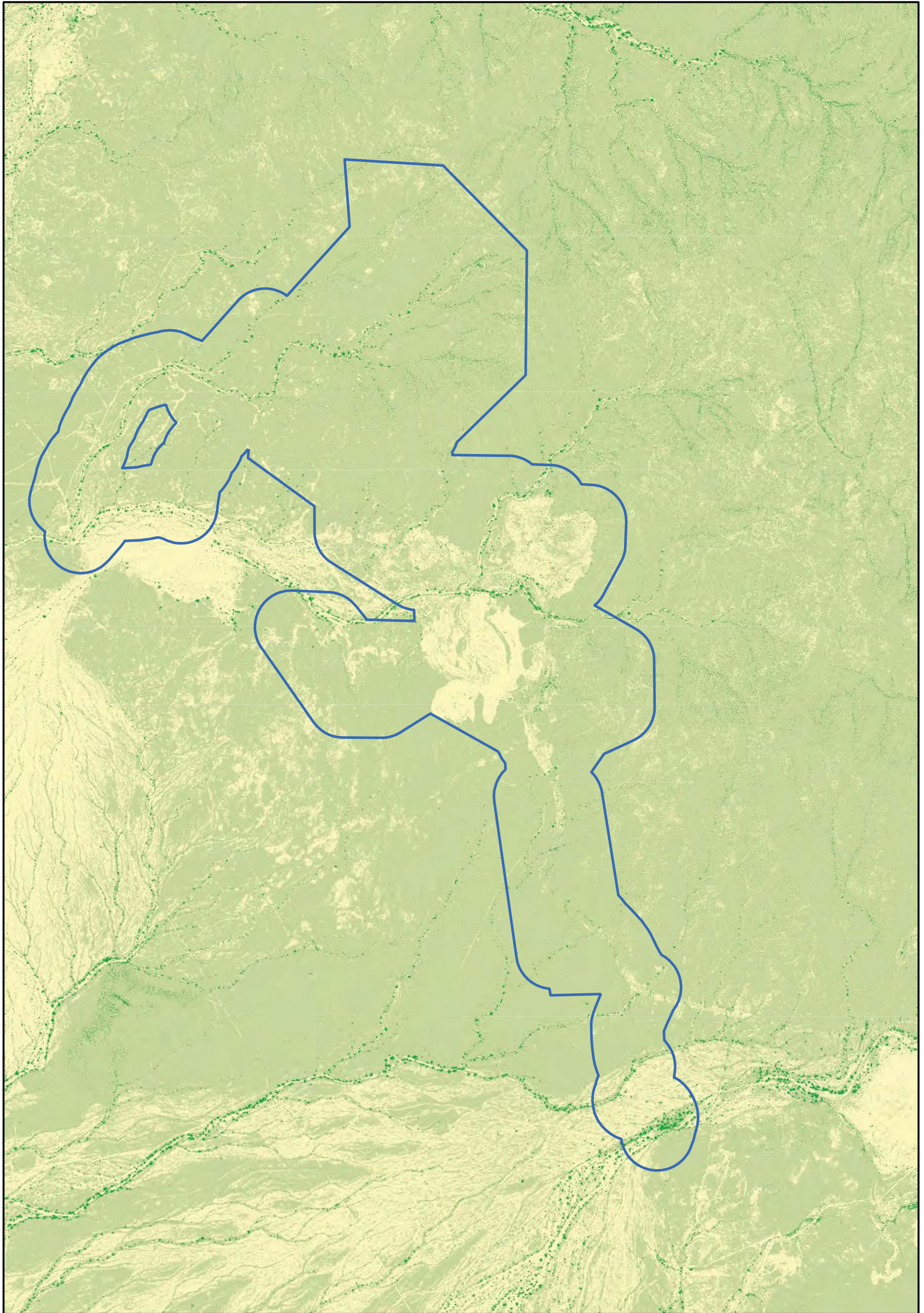
Myotis species/California leaf-nosed bat

unknown

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BAT HABITAT ASSESSMENT  
 Figure 4





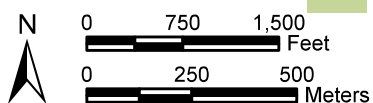
T15S, R20E, Portions of Sections 1, 2, 11, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California,  
 Imperial County, California,  
 Data Source: SMP  
 Image Source: Supervised Classification from NAIP 2020

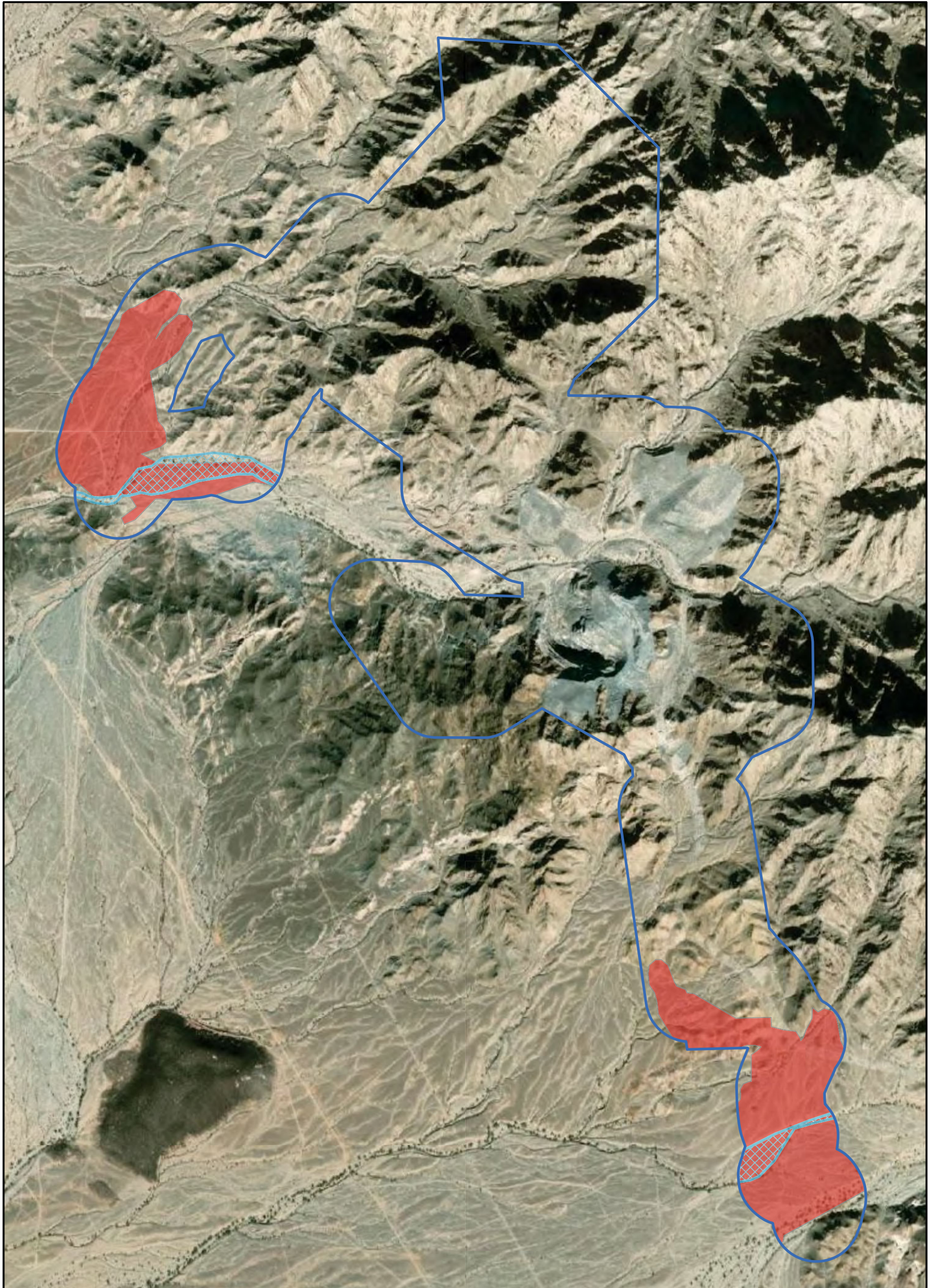
**Legend**

- Analysis Area
- Brassica (nigra) and other mustards semi-natural stands
- Parkinsonia florida—Olneya tesota alliance
- Larrea tridentata — Encelia farinosa alliance

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VEGETATION CLASSIFICATION  
 Figure 5





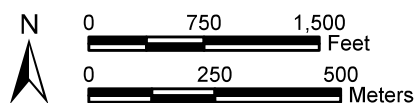
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 T14S, R21E, Portions of Sections 19, and 29-32,  
 T15S, R20E, Portions of Sections 1-3, 10-15, 23-26, 35, and 36,  
 T15S, R21E, Portions of Sections 4-9, 16-21, and 28-32,  
 Imperial County, California,  
 Data Source: SMP  
 Image Source: ArcGIS Online, World Imagery, 2019

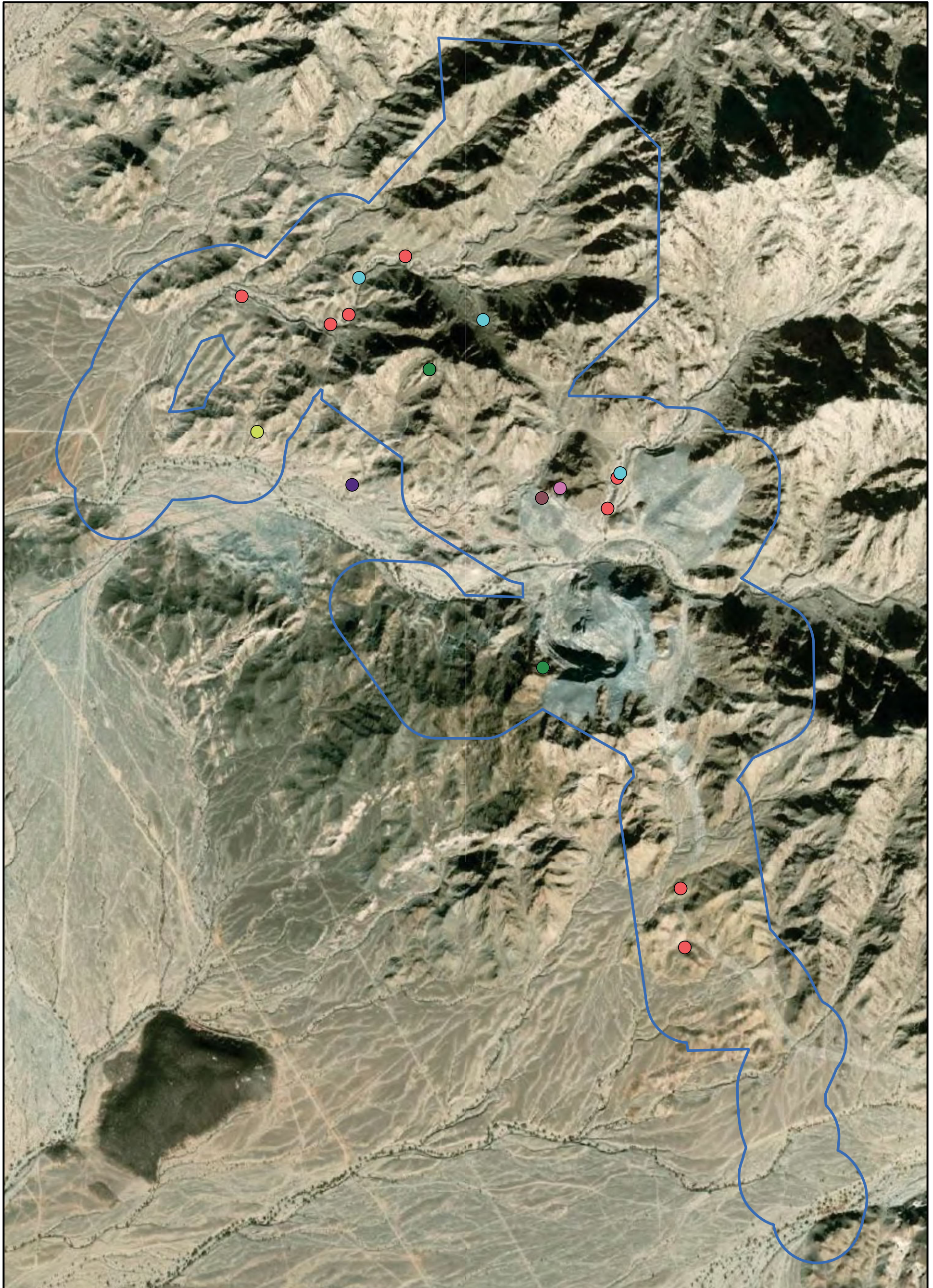
**Legend**

- Analysis Area
- Species**
- Fringe-toed lizard habitat
- Burrowing owl habitat

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WESTERN BURROWING OWLAND  
 COLORADO DESERT FRINGE-TOED LIZARD  
 HABITAT ASSESSMENT Figure 6





T15S, R20E, Portions of Sections 1, 2, 11, 12 and 13,  
 T15S, R21E, Portions of Sections 6, 7, and 18  
 Imperial County, California,  
 Ogilby and Hedges USGS 7.5' Quadrangles (2018)  
 Data Source: SMP & Stantec  
 CDFW (<https://apps.wildlife.ca.gov/>)  
 CNPS (<https://apps.wildlife.ca.gov/>)  
 Image Source: ArcGIS Online, World Imagery, 2019

**Legend**

Analysis Area

**Occurrences**

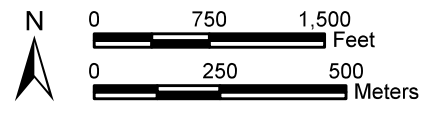
- California leaf-nosed bat
- Pallid bat

- Tortoise Burrow
- Tortoise Scat
- Townsend's big-eared bat
- pink fairy-duster
- western mastiff bat

**Oro Cruz Pit Area Exploration Project  
 Biological Resource Technical Report  
 and Assessment**

SPECIAL-STATUS SPECIES HISTORICAL  
 OCCURRENCE WITHIN THE ANALYSIS AREA

Figure 7



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## **APPENDIX A**

### **Tortoise Survey**

# DESERT TORTOISE SURVEY REPORT ORO CRUZ PROJECT

*Prepared for:*

**Southern Empire Resources Corp. / SMP Gold Corp.**  
789 West Pender Street, Suite 420  
Vancouver, British Columbia V6C 1H2

*Prepared by:*



**Stantec Consulting Services Inc.**  
321 North Mall Drive, Suite I-202  
St. George, Utah 84790

And

6995 Sierra Center Parkway  
Reno, Nevada 89511

Stantec Project Number 203722086

February 16, 2021



## Sign-off Sheet and Signatures of Environmental Professionals


This document entitled Desert Tortoise Survey Report, Oro Cruz Project was prepared by Stantec Consulting Services Inc. (Stantec) for the account of Southern Empire Resources Corp/SMP Gold Corp. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

All information, conclusions, and recommendations provided by Stantec in this document regarding the Desert Tortoise Report have been prepared by and/or under the supervision of and reviewed by the professionals whose signatures appear below.

Prepared by: \_\_\_\_\_  
Greg Sharp  
Environmental Scientist.

A handwritten signature in black ink, appearing to read "Greg Sharp", written over a horizontal line.

Approved by: \_\_\_\_\_  
Benjamin H. Veach,  
Principal

A handwritten signature in blue ink, appearing to read "Benjamin H. Veach", written over a horizontal line.

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### ACRONYMS AND ABBREVIATIONS

<b>BLM</b>	Bureau of Land Management
<b>GIS</b>	Geographic Information System
<b>GPS</b>	Global Positioning System
<b>NEPA</b>	National Environmental Policy Act
<b>Project</b>	Oro Cruz Drilling Plan Project
<b>Stantec</b>	Stantec Consulting Services Inc.
<b>USFWS</b>	United States Fish and Wildlife Service

## 1.0 SUMMARY

Stantec Consulting Services Inc. (Stantec) completed a desert tortoise survey of the Oro Cruz Drilling Plan Project (Project), located in Imperial County, California in the historic mining area of Tumco (**Figure 1**). The survey was conducted January 8 through 15, 2021.

The Project consists of seven planned drill exploration areas and associated access roads (Action Area, **Figure 2**). The total acres of surveys conducted in the drill exploration areas was 119.74 and the total miles of access road surveyed was 9.75. Areas of vertical, solid rock; highly-disturbed ground; or mine pits, within the drill areas, were considered unsuitable habitat for desert tortoise and not surveyed. Unsuitable habitat totaled 98.59 acres.

The following items of note were identified during this survey:

### Drill Area 1 and associated access

No tortoise or tortoise sign was found in the drill area or associated accesses.

### Drill Area 2 and associated access

Two tortoise burrows were found, one with scat at the entrance, indicating this is likely an active borrow. Both burrows were in good condition.

### Drill Area 3 and associated access

Four tortoise burrows and a piece of scat were found in the drill area. One burrow had tortoise tracks in the front of it and another had scat. All of the burrows are considered active or good condition.

### Drill Area 4 and associated access

No tortoise or tortoise sign was found in the drill area or associated accesses.

### Drill Area 5 and associated access

One piece of tortoise scat was found in the drill area; however, no burrows were located.

### Drill Area 6 and associated access

Two tortoise burrows were found in the drill area. One was in good condition; the other was deteriorated but had the correct shape.

### Drill Area 7 and associated access

This drill area was highly disturbed and consisted of unsuitable habitat. Access roads were surveyed, and no tortoise or tortoise sign was found.

The preceding summary is intended for informational purposes only. Reading of the full body of this report is recommended.

## 2.0 INTRODUCTION

### 2.1 ACTION AREA DESCRIPTION

Stantec Consulting Services Inc. (Stantec) completed a desert tortoise survey of the Oro Cruz Drilling Plan Project (Project), located in Imperial County, California in the historic mining area of Tumco (**Figure 1**). The survey was conducted January 8 through 15, 2021.

The Project consists of seven planned drill exploration areas (218.33 acres) and associated access roads (9.75 miles) (Action Area, **Figure 2**). The Action Area is located within the Cargo Muchacho Mountains which consists of very rugged, eroding, rocky slopes. Mining has occurred in this area since the early 1800s. The most recent mining activity was in the mid to late 1990s. As such, much of the area has been disturbed from mining activities. Off-road vehicle use, recreational vehicle camping, and other outdoor activities have added to the disturbances in the area. Vegetation in the Project is low desert scrub typical of the high temperature region of southeast California.

The Action Area is within Bureau of Land Management (BLM) classified Category 3 desert tortoise habitat, lower quality habitat, and on the edge of tortoise's general distribution in southern California (BLM, 1994). In these areas, the tortoises occur in relatively low numbers. The Action Area is approximately 6.8 miles from United States Fish and Wildlife Service (USFWS)-designated critical habitat and is 2,750 feet south of the designated Colorado Desert Recovery unit (**Figure 1**).

A total of 119.74 acres were surveyed in the seven drill areas and 9.75 miles of access roads were surveyed. There were 98.59 acres within the seven drill areas that were determined to be unsuitable habitat and were not surveyed. These areas consisted of steep vertical cliffs; highly disturbed ground; or mine pits.

### 2.2 PERSONNEL QUALIFICATIONS

#### **Greg Sharp – B.S. Degree, Fisheries and Wildlife Biology**

Mr. Sharp has utilized numerous survey techniques to assess the presence of Threatened, Endangered, Candidate, and Sensitive plant and animal species throughout the western states on private, BLM, and United States Forest Service lands. Mr. Sharp is a certified desert tortoise biologist and has been doing biological surveys in Utah, Nevada, and California for over 20 years. Mr. Sharp has completed tortoise surveys in conjunction with the National Environmental Policy Act (NEPA) process for many large projects in the southwest and in the greater southwestern Utah area.

#### **Seth Topham – B.S. Degree, Natural Resources**

Mr. Topham has more than 15 years of experience working as a natural resource biologist/certified desert tortoise biologist in many areas of the western United States. He also has more than 10 years of experience in providing Geographical Information System (GIS) support for various natural resource projects. Mr. Topham has utilized many survey techniques to assess the presence and/or monitor the status of plant and animal species, including many listed as Threatened, Endangered, Candidate, or otherwise considered Sensitive. Mr. Topham has completed numerous tortoise surveys in conjunction with the NEPA process for many large projects in the southwest and in the greater southwestern Utah area.



## 3.0 METHODS

### 3.1 TORTOISE SURVEYS

Stantec biologists conducted desert tortoise surveys in the Action Area following the USFWS protocol *Preparing For Any Action That May Occur Within The Range Of The Mojave Desert Tortoise (Gopherus agassizii)* (USFWS, 2019). As required by the protocol, biologists walked parallel transects spaced 10 meters apart to achieve 100 percent coverage of the areas surveyed. The Action Area transects were mapped in GIS and uploaded to Collector, a global positioning system (GPS) application for field data collection, prior to the survey. The Collector application was used to locate and follow the established transect lines in the field. During the survey, special attention was given to the identification of desert tortoise and desert tortoise sign (e.g., burrows, scat, carcasses, etc.). Vegetation and other wildlife species were also identified during the survey. Survey information was recorded on established data sheets.

## 4.0 RESULTS

### 4.1 HABITAT

The Action Area is located within the Cargo Muchacho Mountains which consists of very rugged, eroding, rocky slopes. The Action Area is located along the western side of the mountains at an elevation ranging from 500 to 800 feet. Mining has occurred in this area since the early 1800s. The most recent mining activity was in the mid to late 1990s. As such, much of the area has been disturbed from mining activities. Other significant human activity in the area consists of off-road vehicle driving, recreational vehicle camping, and other outdoor activities. Vegetation in the Action Area is typical low desert scrub found in southeast California. Habitat in the Action Area consists of four types: steep slopes, bajadas, desert pavement areas and washes.

Vegetation cover is low but varies from almost zero on the steep rocky slopes and desert pavement to fairly dense in some of the washes and bajadas. Vegetation on the slopes and uplands consists of scattered creosote bush (*Larrea tridentata*), ocotillo (*Fouquieria splendens*), Incienso (*Encelia farinose*) and scattered native grasses. Areas at the beginning of the bajadas and base of steep slopes offered foraging, shade and burrowing areas for desert tortoises. The deep cut washes concentrate rain fall and allow a greater variety of larger shrubs, trees, and ground cover. Dominant vegetation in these washes consisted of ironwood (*Olneya tesota*), mesquite (*Prosopis juliflora*), palo verde (*Cercidium floridum*), and tamarisk (*Tamarix pentandra*). The washes in the area would supply needed forage and shade for the desert tortoise. The wash banks supply areas for caliche caves and burrows. Dominant vegetation in these washes consisted of ironwood, creosote bush, mesquite, palo verde, and tamarisk. A complete list of plants found in the survey area is included in **Appendix A**.

Soils in the Action Area developed from weathered granitic rock and schistose rock substrates. The soils consist of gravelly sands with large amounts of cobble, rock, and boulders. Hill slopes in the Action Area are steep and almost entirely covered in large, weathered rock. Alluvial fans and washes in the area contained the deeper soils and would be considered suitable for tortoise burrowing.

#### 4.1.1 Physical and Biological Features of Critical Desert Tortoise Habitat Described for the Action Area

Although the Action Area is within BLM category III habitat, the area is outside of USFWS designated Critical Habitat (**Figure 1**) but per protocol, the habitat is described below using the physical and biological features for Designated Desert Tortoise Critical Habitat (USFWS 2019).

1. The Action Area provides areas of sufficient space for movement and for tortoise to reside in the area. However, large sections of the Action Area are made up of steep rocky slopes, past mining disturbances and mining pits that would preclude the tortoise from using these areas.
2. The washes, bajadas, and upland areas do support native plant forage for the desert tortoise. Most of the forage species would be found in the washes or bajadas, were soils are better and water would promote plant growth.
3. Suitable burrowing, nesting, and overwintering substrate is restricted in the Action Area to the deep cut washes where soils are deeper and consist of a sandy gravel mixture. Caliche

caves and other shelter sites are also found in these washes. Other deep shelter sites can be found at the base of the rocky steep slopes.

4. Vegetation density is generally low in the Action Area. Shrubs grow large enough to provide shade and shelter but are sparse. The washes in the Action Area do supply a denser tree and shrub cover that provides shade and shelter.
5. The Action Area is being disturbed from an increase in human activities related to recreational use of the area. Also, past mining activities have disturbed much of the Action Area.

## 4.2 TORTOISE SURVEY

The Action Area is located within 2,750 feet of the Colorado Desert Recovery Unit for the desert tortoise (**Figure 1**). Stantec completed desert tortoise surveys following the USFWS protocol- *Preparing For Any Action That May Occur Within The Range Of The Mojave Desert Tortoise (Gopherus agassizii)* (USFWS 2019). The survey was conducted January 8 through 15, 2021. The survey methods for small projects and linear projects were followed as the Action Area size was less than 500 acres and had linear access routes. The primary purpose of these surveys was to provide information on whether desert tortoises are likely to be present. Small project and linear project surveys can be completed any time of year as they are used to determine if desert tortoises are present in the area based on sign rather than live animals.

As required by the protocol, biologists walked parallel transects spaced 10 meters apart to achieve 100 percent coverage of the area surveyed. Stantec used the datasheet included in the protocol to record all evidence that indicates desert tortoises may be present (e.g., scat, burrows, carcasses, courtship rings, drinking depressions, etc. in addition to live tortoises) (**Appendix B**). The Action Area transects were mapped in GIS and uploaded to the Collector application using a handheld GPS device. The application was used to locate and follow the established transect lines in the field. Temperatures ranged from the mid 40's in the mornings, with afternoon highs ranging in the 70's. Below are the survey findings in the Action Area:

### Drill Area 1 and associated access

Drill Area 1 (**Figure 2**) was located almost entirely in the rocky steep slope habitat with approximately half of the area being an open pit (Photos 1-2, 27-28, **Appendix C**). The area was 57.74 acres with 18.28 acres being surveyed as tortoise habitat.

No tortoise or tortoise sign was found in the drill area or associated accesses.

### Drill Area 2 and associated access

Drill Area 2 (**Figure 2**) was located with approximately half of the area being tortoise habitat and the other half was steep and solid rock. (Photos 3-4, 23, 25, 29, **Appendix C**). The area was 54.84 acres with 34.03 acres being surveyed as tortoise habitat.

Two tortoise burrows were found, one had scat at the entrance (Photos 5, 24, **Appendix C**). All burrows were in good condition (Datasheets, **Appendix B**).

#### Drill Area 3 and associated access

Drill Area 3 (**Figure 2**) had a large wash that went down the middle of the area with the eastern portion of the area having steep and solid rock. (Photo 6, **Appendix C**). The area was 30.98 acres with 25.90 acres being surveyed as tortoise habitat.

Four tortoise burrows and a piece of scat were found in the drill area (Photos 7-10, **Appendix C**). One burrow had tortoise tracks in the front of it and another had scat. All are considered active or good condition (Datasheets, **Appendix B**).

#### Drill Area 4 and associated access

Drill Area 4 (**Figure 2**) was located almost entirely in the rocky steep slope habitat (Photos 11-12, 26, **Appendix C**). The area was 20.07 acres with 13.12 acres being surveyed as tortoise habitat.

No tortoise or tortoise sign was found in the drill area or associated accesses.

#### Drill Area 5 and associated access

Drill Area 5 (**Figure 2**) was located almost entirely in the rocky steep slope habitat (Photo 13, **Appendix C**). The area was 9.24 acres with 3.44 acres being surveyed as tortoise habitat.

One piece of tortoise scat was found in the drill area (Datasheets, **Appendix B**, Photo 14, **Appendix C**).

#### Drill Area 6 and associated access

Drill Area 6 (**Figure 2**) was located in an old, reclaimed haul route and included some rocky hills and bajada areas (Photo 15, **Appendix C**). The area was 24.98 acres with 100 percent being surveyed as tortoise habitat.

Two tortoise burrows were found in this drill area (Photo 16-17, **Appendix C**). One was in good condition the other was deteriorated but had the correct shape (datasheets, **Appendix B**).

#### Drill Area 7 and associated access

Drill Area 7 (**Figure 2**) was located entirely in a mine waste dump area and was not surveyed as tortoise habitat. Access roads were surveyed (Photos 30-31, **Appendix C**).

No tortoise or tortoise sign was found in the associated accesses.

### **4.3 GENERAL WILDLIFE OBSERVATIONS**

During the survey, observations were made of other wildlife species found or their sign (scat or tracks) and included many typical desert species of birds, reptiles, and mammals. A complete list is located in **Appendix A**

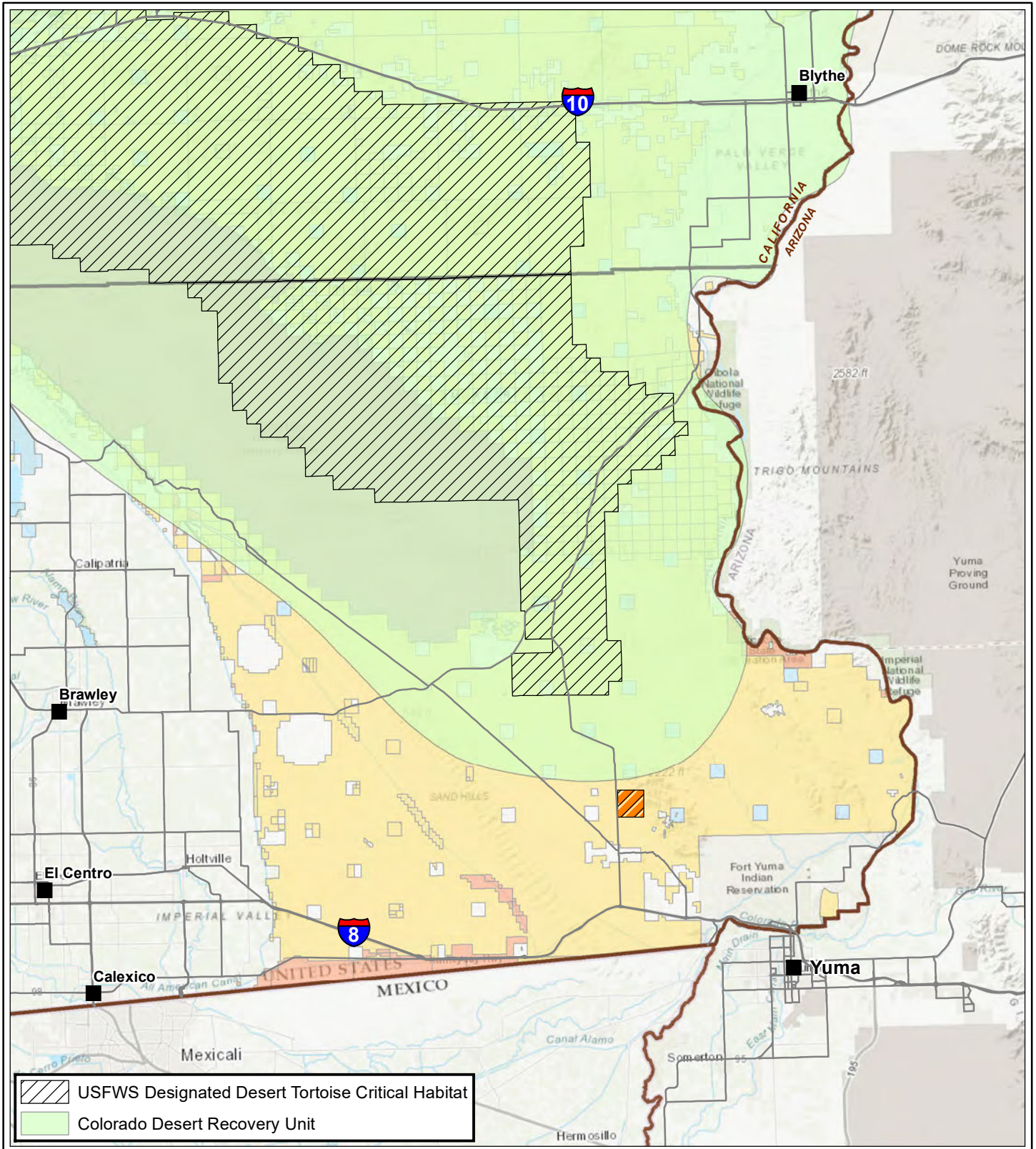




## 5.0 REFERENCES

Bureau of Land Management (BLM). 1994. Oro Cruz Operation of the American Girl Mining Project: Environmental Impact Statement. El Centro Resource Area. El Centro, California.







United States Fish and Wildlife Service (USFWS). 2019. Preparing For Any Action That May Occur Within The Range Of The Mojave Desert Tortoise (*Gopherus agassizii*). Ventura Office. Ventura, California.

## FIGURES



 USFWS Designated Desert Tortoise Critical Habitat  
 Colorado Desert Recovery Unit

**Legend**

-  Project Location
- Land Status**
-  Bureau of Land Management
-  Private
-  State Lands
-  Bureau of Reclamation
-  Department of Defense



0 5 10 Miles

1 in = 10 miles

Imperial County, CA  
NAD 1983 UTM Zone 11N

DRAWN BY: JT

1ST REVIEW: CJ

2ND REVIEW: BV

DATE: 2/1/2021

PROJECT NO: 203722086

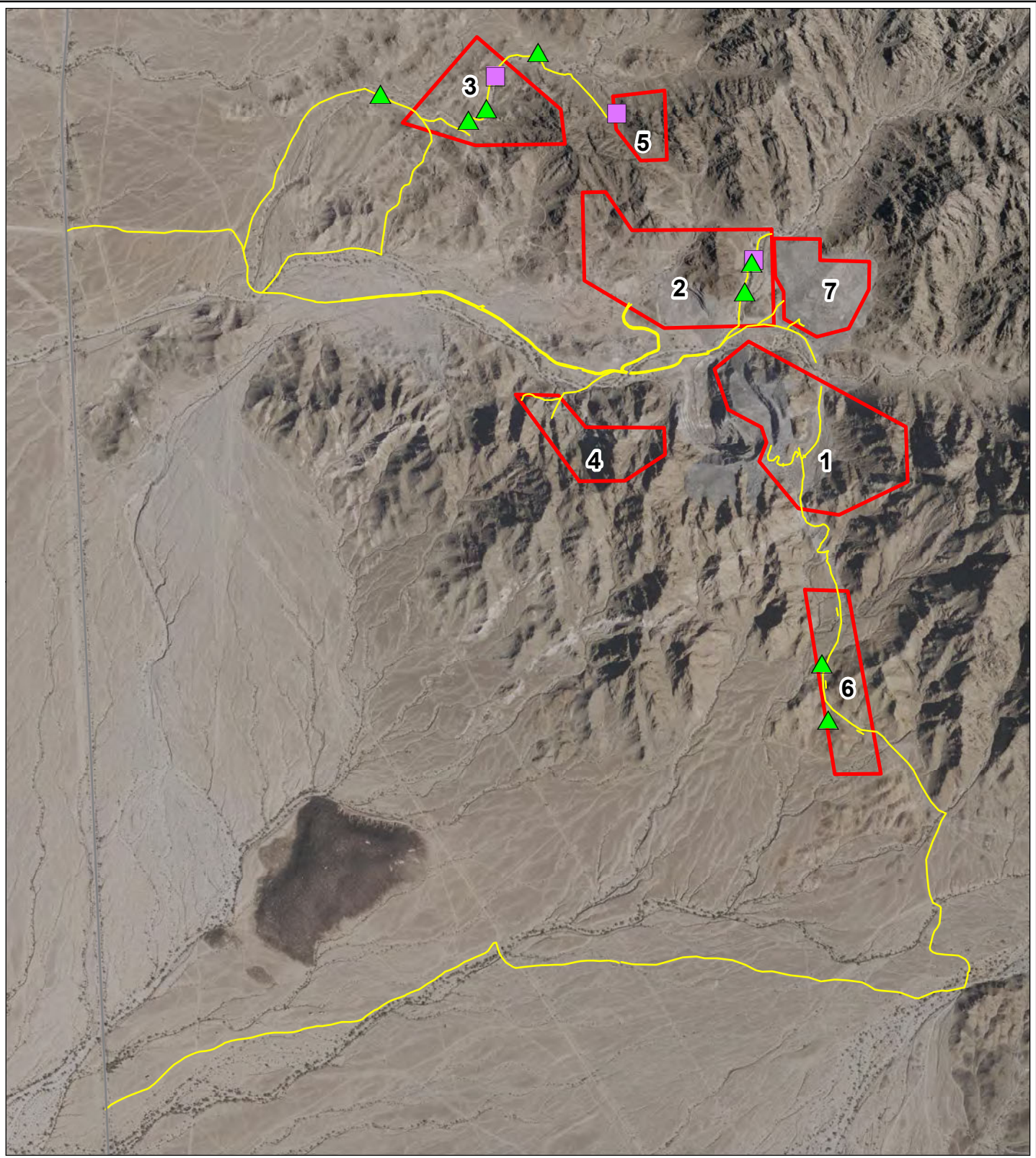
Southern Empire Resources  
SMP Gold Corp.  
Oro Cruz Project Tortoise Survey

**Figure 1  
Project Location**

V:\2037\Active\203722086\03\_data\gis\_cad\gimaps\Figure\_1\_Project\_Location\_v2\_8x11P.mxd Revised: 2021-02-01 By: chjohnson

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, incrementP Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeBCO, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapbox, and the GIS User Community

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



V:\2037\Active\203722086\03\_data\gis\_cad\fig\mxd\Figure\_2\_Survey\_Results\_Map\_Bk11P.mxd Revised: 2021-02-01 By: chjohnson

<b>Legend</b> Drill Areas Access Roads Tortoise Burrow Tortoise Scat	  1 in = 1,600 feet	 <b>Southern Empire Resources SMP Gold Corp. Oro Cruz Project Tortoise Survey</b>
	Imperial County, CA NAD 1983 UTM Zone 11N	
	DRAWN BY: JT     1ST REVIEW: CJ     2ND REVIEW: BV	
	DATE: 2/1/2021     PROJECT NO: 203722086	
<b>Figure 2 Survey Results</b>		

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Service Layer Credits: Esri, USDA Farm Service Agency

## **APPENDIX A**

### **Plants and Wildlife**

Common Name	Genus	Species
<b>Plants</b>		
catclaw	<i>Acacia</i>	<i>greggii</i>
Burrow bush	<i>Ambrosia</i>	<i>dumosa</i>
devil's lettuce	<i>Amsinckia</i>	<i>tessellata</i>
palo verde	<i>Cercidium</i>	<i>floridum</i>
devil's spine flower	<i>Chorizanthe</i>	<i>rigida</i>
wingnut cryptantha	<i>Cryptantha</i>	<i>pterocarya</i>
inciensio	<i>Encelia</i>	<i>farinosa</i>
desert trumpet	<i>Eriogonum</i>	<i>Inflatum</i>
buckwheat	<i>Eriogonum</i>	<i>deflexum</i>
barrel cactus	<i>Ferocactus</i>	<i>acanthodes</i>
ocotillo	<i>Fouquieria</i>	<i>splendens</i>
hopsage	<i>Grayia</i>	<i>spinosa</i>
range ratany	<i>Krameria</i>	<i>grayi</i>
creosote	<i>Larrea</i>	<i>tridentata</i>
desert pepperweed	<i>Lepidium</i>	<i>fremontii</i>
beaver tail cactus	<i>Opuntia</i>	<i>basilaris</i>
golden cholla	<i>Opuntia</i>	<i>acanthocarpa</i>
desert plantain	<i>Plantago</i>	<i>insularis</i>
mesquite	<i>Prosopis</i>	<i>juliflora</i>
nipple cactus	<i>Mammillaria</i>	<i>acanthocarpa</i>
clump grass	<i>Shismus</i>	<i>arabicus</i>
globemallow	<i>Sphaeralcea</i>	<i>emoryi</i>
<b>Birds</b>		
black-tailed gnatcatcher	<i>Polioptila</i>	<i>melanura</i>
black-throated sparrow	<i>Amphispiza</i>	<i>billineata</i>
Costa's hummingbird	<i>Calypte</i>	<i>costae</i>
Gambel's quail	<i>Callipepla</i>	<i>gambelii</i>
ladder-backed woodpecker	<i>Picoides</i>	<i>scalaris</i>
loggerhead shrike	<i>Lanius</i>	<i>ludovicianus</i>
mourning dove	<i>Zenaida</i>	<i>macroura</i>
peregrine falcon	<i>Falco</i>	<i>peregrinus</i>
phainopepla	<i>Phainopepla</i>	<i>nitens</i>
red-tailed hawk	<i>Buteo</i>	<i>jamaicensis</i>
rock wren	<i>Salpinctes</i>	<i>obsoletus</i>
Say's phoebe	<i>Sayornis</i>	<i>saya</i>
turkey vulture	<i>Cathartes</i>	<i>aura</i>
<b>Mammals</b>		
antelope ground squirrel	<i>Ammospermophilus</i>	<i>leucurus</i>
mule deer	<i>Odocoileus</i>	<i>hemionus</i>
<b>Reptiles</b>		
desert tortoise	<i>Gopherus</i>	<i>agassizii</i>
Side-blotched lizard	<i>Uta</i>	<i>stansburiana</i>

## **APPENDIX B**

### **Datasheets**

# Drill Area 2

Version: October 26, 2018

Date of survey: 17/01/2021 Survey biologist(s): Seán.topham@stantec.com, 435-668-9723 - Greg.sharp2@stantec.com  
(day, month, year) (name, email, and phone number)

Site description: Oro Cruz, 198 Acres, Southwest end of the Cargo Muchacho Mountains  
(project name and size; general location)

County: Imperial County, CA Quad: 011B/HE20ES Location: 704285, 3604260 NAD83 ZU  
(UTM coordinates, lat-long, and/or GRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 37Ac Transect #: ARC-23-117 Transect length: 114

GPS Start-point: 704546, 3640367 231m Start time: 9:12 am/pm  
(easting, northing, elevation in meters)

GPS End-point: 704510, 3640370 End time: 9:20 am/pm  
(easting, northing, elevation in meters)

Start Temp: 65 °C End Temp: 65 °C

### Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(In burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

### Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	<u>704557 3640260</u>	<u>Scat S3</u>	<u>2 pieces</u>
2			
3			
4			
5			
6			
7			
8			



# Drill Area 2

Version: October 26, 2018

Date of survey: 14/01/2021 Survey biologist(s): Seth.topham@stantec.com, 435-668-9723 - Greg.sharp2@stantec.com  
(day, month, year) (name, email, and phone number)

Site description: Oro Cruz, 198 Acres, Southwest end of the Cargo Muchacho Mountains  
(project name and size; general location)

County: Imperial County, CA Quad: 05181/HE02ES Location: 704225, 3607260 NAD83 Z 11  
(UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 54.84 Transect #: 02 Transect length: \_\_\_\_\_

GPS Start-point: 704615, 3640310 230m Start time: 10:06 am/pm  
(easting, northing, elevation in meters)

GPS End-point: 704393, 3639937, 215m End time: 10:33 am/pm  
(easting, northing, elevation in meters)

Start Temp: 26 °C End Temp: 70 °C

### Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥ 180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

### Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	<u>704545 3640252</u>	<u>Burrow</u>	<u>SCAT (S2)</u>
2	<u>704522 3646147</u>	<u>Burrow</u>	<u>NO OTHER SIGN.</u>
3			
4			
5			
6			
7			
8			

DAZ - EAST - ACCESS - SWIM SIDE

PHOTOS SAY EAST Tr.

# Drill Area 3

Version: October 26, 2018

Date of survey: 10/01/2021 Survey biologist(s): Seth.topham@stantec.com, 435-668-9723 - Greg.sharp2@stantec.com  
(day, month, year) (name, email, and phone number)

Site description: Oro Cruz, 198 Acres, Southwest end of the Cargo Muchacho Mountains  
(project name and size; general location)

County: Imperial County, CA Quad: Hodges Location: 703328 3640758  
(UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 2d width Transect #: 703328 Transect length: 3640758  
(UTM coordinates, lat-long, and/or TRS; map datum)

GPS Start-point: 702152 3640376 176m Start time: 0845 am/pm  
(easting, northing, elevation in meters)

GPS End-point: 704075 3640757 233m End time: 1000 am/pm  
(easting, northing, elevation in meters)

Start Temp: 55 °C End Temp: 68 °C

### Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

None

### Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	<u>703647 3640908</u>	<u>scat</u>	<u>1 piece, S 2 cand.</u>
2			
3			
4			
5			
6			
7			
8			

# Drill Area 3

Version: October 26, 2018

Date of survey: 10/01/2021 Survey biologist(s): Seth.topham@stantec.com 435-668-9723 - Greg.sharp2@stantec.com  
(day, month, year) (name, email, and phone number)

Site description: Oro Cruz, 198 Acres, Southwest end of the Cargo Muchacho Mountains  
(project name and size; general location)

County: Imperial County, CA Quad: HODGES Location: 702152, 3640376 NA083 Z11  
(UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 2000 width transect #: TUNED N transect length: \_\_\_\_\_

GPS Start-point: 704075, 3640752 233 m Start time: 8:53 am/pm  
(easting, northing, elevation in meters)

GPS End-point: 702152, 3640376 176 m End time: 10:30 am/pm  
(easting, northing, elevation in meters)

Start Temp: 55 °F End Temp: 60 °C

### Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

### Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	<u>703793 3640944</u>	<u>Burrow</u>	<u>TRACKS</u>
2	<u>703612 3640793</u>	<u>Burrow</u>	<u>SCAT</u>
3	<u>703548 3640754</u>	<u>Burrow</u>	<u>SCAT</u>
4	<u>703238 3640854</u>	<u>Burrow</u>	<u>GOOD CONDITION</u>
5			
6			
7			
8			

# Drill Area 5

Version: October 26, 2018

Date of survey: 11/01/2021 Survey biologist(s): Seth.topham@stantec.com, 435-668-9723 - Greg.sharp2@stantec.com  
(day, month, year) (name, email, and phone number)  
 Site description: Oro Cruz, 198 Acres, Southwest end of the Cargo Muchacho Mountains  
(project name and size; general location)  
 County: Imperial County, CA Quad: Hodges Location: 703328 3640758  
(UTM coordinates, lat-long, and/or TRS; map datum)  
 Circle one: 100% coverage or Sampling Area size to be surveyed: 31 Transect #: 075-2N-17 Transect length: 17  
 GPS Start-point: 704077 3640834 Start time: 1944 am/pm  
(easting, northing, elevation in meters)  
 GPS End-point: 704075 3640715 End time: 1700 am/pm  
(easting, northing, elevation in meters)  
 Start Temp: 55 °C End Temp: 75 °C

### Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

### Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	704077 3640776	Scat	52 cont., 1 piece
2			
3			
4			
5			
6			
7			
8			

# Drill Area 6

Version: October 26, 2018

Date of survey: 11/01/2021 Survey biologist(s): Seth.topham@stantec.com, 435-668-9723 Greg.sharp2@stantec.com  
(day, month, year) (name, email, and phone number)  
 Site description: Oro Cruz, 198 Acres, Southwest end of the Cargo Muchacho Mountains  
(project name and size; general location)  
 County: Imperial County, CA Quad: Gilby Location: 704864 3638784  
(UTM coordinates, lat-long, and/or TRS, map datum)  
 Circle one: 100% coverage or Sampling Area size to be surveyed: 25 Transect #: D126-N5-84 Transect length: 1658  
 GPS Start-point: 704817 3638601 Start time: 1355 am/pm  
(easting, northing, elevation in meters)  
 GPS End-point: 704817 3639092 End time: 1420 am/pm  
(easting, northing, elevation in meters)  
 Start Temp: 70 °C End Temp: 70 °C

### Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

MUNK

### Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	<u>704816 3638601</u>	<u>Burrow</u>	<u>No OTHER SIGN</u>
2			
3			
4			
5			
6			
7			
8			

# Drill Area 6

Version: October 26, 2018

Date of survey: 11/01/2021 Survey biologist(s): Seth.topham@stantec.com, 435-668-9723 - Greg.sharp2@stantec.com  
(day, month, year) (name, email, and phone number)

Site description: Oro Cruz, 198 Acres, Southwest end of the Cargo Muchacho Mountains  
(project name and size, general location)

County: Imperial County, CA Quad: N2E2 Location: 701804, 3038724 NAD 83-21  
(UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 25 Ac Transect #: NS-80 Transect length: 384

GPS Start-point: 704797, 3039095 203 m Start time: 2:23 am/pm

GPS End-point: 704795, 3038724 193 m End time: 7:53 am/pm

Start Temp: 70 °C End Temp: 70 °C

### Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

### Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	<u>704793 3038839</u>	<u>Burrow</u>	<u>SCAT PRESENT</u>
2			
3			
4			
5			
6			
7			
8			

## **APPENDIX C**

### **Photographs**



Photo 1: Drill Area 1, general view of suitable desert tortoise habitat surveyed.



Photo 2: Drill Area 1, general view of un-suitable desert tortoise habitat not surveyed.





Photo 3: Drill Area 2, general view of suitable desert tortoise habitat surveyed.



Photo 4: Drill Area 2, general view of un-suitable desert tortoise habitat not surveyed.



Photo 5: Drill Area 2, desert tortoise scat.



Photo 6: Drill Area 3, general view of suitable desert tortoise habitat surveyed.



Photo 7: Drill Area 3, desert tortoise burrow with old desert tortoise scat and old tracks.



Photo 8: Drill Area 3, desert tortoise burrow with desert tortoise scat.



Photo 9: Drill Area 3, desert tortoise burrow.



Photo 10: Drill Area 3, desert tortoise scat.



Photo 11: Drill Area 4, general view of suitable desert tortoise habitat surveyed.



Photo 12: Drill Area 4, general view of unsuitable desert tortoise habitat not surveyed.



Photo 13: Drill Area 5, general view of suitable desert tortoise habitat surveyed.



Photo 14: Drill Area 5, desert tortoise scat.



Photo 15: Drill Area 6, general view of suitable desert tortoise habitat surveyed.



Photo 16: Drill Area 6, desert tortoise burrow.





Photo 17: Drill Area 6, desert tortoise burrow (desert tortoise scat was present).



Photo 18: Portion of Access Tumco, general view of suitable desert tortoise habitat surveyed.



Photo 19: Access Road Tumco, desert tortoise burrow.



Photo 20: Portion of Access Tumco Gate Fork, general view of suitable desert tortoise habitat surveyed.



Photo 21: Portion of Access Tumco Main, general view of suitable desert tortoise habitat surveyed.



Photo 22: Portion of Access DH6 Main, general view of suitable desert tortoise habitat surveyed.



Photo 23: Portion of Access DH2, general view of suitable desert tortoise habitat surveyed.



Photo 24: Access DH2, desert tortoise burrow with desert tortoise scat.



Photo 25: Access DH2, desert tortoise burrow.



Photo 26: Portion of Access DH4, general view of suitable desert tortoise habitat surveyed.



Photo 27: Portion of Access DH1, general view of suitable desert tortoise habitat surveyed.



Photo 28: Portion of Access DH1 Access Spur, un-suitable desert tortoise habitat.



Photo 29: Portion of Access DH2 Alt Access, general view of suitable desert tortoise habitat surveyed.



Photo 30: Portion of Access DH7 Access East 1, general view.



Photo 31: Portion of Access DH7 East 2, general view of suitable desert tortoise habitat surveyed.



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## **APPENDIX B**

### **IPaC Screening**



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Carlsbad Fish And Wildlife Office  
2177 Salk Avenue - Suite 250  
Carlsbad, CA 92008-7385  
Phone: (760) 431-9440 Fax: (760) 431-5901  
<http://www.fws.gov/carlsbad/>

In Reply Refer To:

March 05, 2021

Consultation Code: 08ECAR00-2021-SLI-0703

Event Code: 08ECAR00-2021-E-01567

Project Name: Oro Cruz

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

<http://>

[www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html).

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Carlsbad Fish And Wildlife Office**

2177 Salk Avenue - Suite 250

Carlsbad, CA 92008-7385

(760) 431-9440

---

## Project Summary

Consultation Code: 08ECAR00-2021-SLI-0703

Event Code: 08ECAR00-2021-E-01567

Project Name: Oro Cruz

Project Type: MINING

Project Description: Mine

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@32.8735665,-114.81136953158614,14z>



Counties: Imperial County, California

---

## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Reptiles

NAME	STATUS
Desert Tortoise <i>Gopherus agassizii</i> Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/4481">https://ecos.fws.gov/ecp/species/4481</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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## **APPENDIX C**

### **BLM El Centro Sensitive Species**

# All BLM CALIFORNIA SPECIAL STATUS PLANTS

Thursday, May 28, 2015

11:00:38 AM

SCIENTIFIC NAME	COMMON NAME	TYPE OF PLANT	FAMILY	FED STATUS	CA STATUS	BLM STATUS	CA RARE PLANT RANK	NNPS STATUS	GLOBAL RANK	STATE RANK	NV STATUS	RECOVERY PLAN?	DATE UPDATED	COMMENTS	ALTURAS	ARCATA	BAKERSFIELD	BARSTOW	BISHOP	EAGLE LAKE	EL CENTRO	HOLLISTER	MOTHER LODGE	NEEDLES	PALM SPRINGS	REDDING	RIDGECREST	SURPRISE	UKIAH		
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	VASC	Nyctaginaceae			BLMS	1B.1		G4G5T2	S1		No	29-Apr-13	Formerly subsp. <i>breviflora</i> (Standl.) Munz.		K															
<i>Abronia villosa</i> var. <i>aurita</i>	chaparral sand-verbena	VASC	Nyctaginaceae			BLMS	1B.1		G5T3T4	S2		No	06-Aug-13	CNDDDB occurrences 2 and 91 are on BLM lands in the Palm Springs Field Office.							S										
<i>Acanthomintha ilicifolia</i>	San Diego thornmint	VASC	Lamiaceae	FT	SE		1B.1		G1	S2		No	12-Mar-15	Status changed from "K" to "S" on 8/6/2013. Naomi Fraga was unable to find the species on BLM lands when trying to collect seeds in 2012. Although there are several CNDDDB occurrences close to BLM lands, none of these actually intersect with BLM lands.																	
<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i>	Cushenberry oxytheca	VASC	Polygonaceae	FE			1B.1		G4?T1	S1		No	06-Aug-13	Formerly <i>Oxytheca parishii</i> var. <i>goodmaniana</i> . Name change based on Reveal, J.L. 2004. Nomenclatural summary of Polygonaceae subfamily Eriogonoideae. Harvard Papers in Botany 9(1):144. A draft Recovery Plan was issued in 1997 but as of 8/6/2013 was not final. Some of the recovery actions in the draft plan have been started and partially implemented.				K													
<i>Acmispon argyraeus</i> var. <i>multicaulis</i>	scrub lotus	VASC	Fabaceae			BLMS	1B.3		G4?T2	S2		No	13-Sep-12	Formerly <i>Lotus argyraeus</i> (Greene) Greene var. <i>multicaulis</i> (Ottley) Isely. Occurs on BLM lands in vicinity of Dinosaur Trackway ACEC. Occurrence there discovered in 2008 acc. Jim Weigand.																	
<i>Acmispon rubriflorus</i>	red-flowered lotus	VASC	Fabaceae			BLMS	1B.1		G1	S1		No	16-Nov-10	Formerly <i>Lotus rubriflorus</i> H.K. Sharsm.																	



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<i>Agave utahensis var. eborispina</i>	ivory-spined agave	VASC	Agavaceae			BLMS	1B.3		G4T3Q	S2		No	08-Dec-10	Added to list on 12/8/2010. Species documented in April 2010 as part of CNPS Rare Plant Treasure Hunt on limestone outcrops in Chicago Canyon, Nopah Range, at a location where it was first discovered in 1978 (CNDDDB Occurrence No. 4). Other older locations are also on BLM lands.				K												
<i>Agrostis blasdalei</i>	Blasdale's bent grass	VASC	Poaceae			BLMS	1B.2		G2	S2		No	29-Apr-13	On Shell Island off of Sea Ranch, Sonoma County, part of the California Coastal National Monument (source: Jim Weigand). Also suspected on the Stornetta Unit because it is known from closeby at Manchester State Beach (Jim Weigand, 2/3/2015).																K
<i>Agrostis hooveri</i>	Hoover's bent grass	VASC	Poaceae			BLMS	1B.2		G2	S2		No	29-Apr-13				K													
<i>Agrostis lacuna-vernalis</i>	vernal pool bent grass	VASC	Poaceae			BLMS	1B.1		G1	S1		No	18-Sep-12	New species added as California Rare Plant Rank 1B.1 on 6-14-2012. Known only from Butterfly Valley and Machine Gun Flats in the Fort Ord National Monument and adjacent Army lands.							K									
<i>Albatrellus caeruleoporus</i>	blue-pored polypore	FUNG	Albatrellaceae			BLMS			G3?	S1		No	16-Nov-10	G and S Heritage Rankings are from Oregon Natural Heritage Information Center 2007.		S														
<i>Albatrellus ellisii</i>	greening goat's foot	FUNG	Albatrellaceae			BLMS			G4	S2S3		No	16-Nov-10	G and S Heritage Rankings are from Oregon Natural Heritage Information Center 2007.		S														
<i>Albatrellus flettii</i>	blue-capped polypore	FUNG	Albatrellaceae			BLMS			None	None		No	16-Nov-10			S														
<i>Allium hickmanii</i>	Hickman's onion	VASC	Alliaceae			BLMS	1B.2		G2	S2		No	29-Apr-13	Fort Ord. Added based on 9/9/08 email from Bruce Delgado								K								
<i>Allium jepsonii</i>	Jepson's onion	VASC	Alliaceae			BLMS	1B.2		G1	S1		No	15-Nov-10										K			S				
<i>Allium munzii</i>	Munz's onion	VASC	Alliaceae	FE	ST		1B.1		G1	S1		No	13-Sep-12												S					
<i>Allium shevockii</i>	Spanish Needle onion	VASC	Alliaceae			BLMS	1B.3		G2	S2		No	15-Nov-10	Southern Sierra Nevada.			K										K			

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<i>Allium tuolumense</i>	Rawhide Hill onion	VASC	Alliaceae			BLMS	1B.2		G2	S2		No	13-Sep-12										K								
<i>Ambrosia pumila</i>	San Diego ambrosia	VASC	Asteraceae	FE			1B.1		G1	S1		No	06-Aug-13	CNDDDB Occurrence 54 is based on a 2005 collection by Salvato (UCR167870). CNDDDB shows BLM as the land owner and most of the mapped 2/5 mile radius circle is BLM. On the basis of this occurrence the status was changed from "S" to "K" on 8/6/2013.																K	
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	VASC	Boraginaceae			BLMS	1B.2		G2?	S2?		No	13-Sep-12	Walker Ridge/Bear Creek (Source: Jim Weigand). Documented within the proposed right-of-way, as well as within the area of potential effect, of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010).															S		K
<i>Ancistrocarphus keilii</i>	Santa Ynez groundstar	VASC	Asteraceae			BLMS	1B.1		G1	S1		No	15-Nov-10				S														
<i>Anisocarpus scabridus</i>	scabrid alpine tarplant	VASC	Asteraceae			BLMS	1B.3		G2G3	S2S3		No	15-Nov-10																	S	
<i>Arabis mcdonaldiana</i>	McDonald's rock-cress	VASC	Brassicaceae	FE	SE		1B.1		G2	S2		Yes	13-Sep-12	Name change from <i>Arabis mcdonaldiana</i> to <i>Arabis mcdonaldiana</i> as of March 3, 2011.		K															
<i>Arctostaphylos bakeri subsp. sublaevis</i>	The Cedars manzanita	VASC	Ericaceae			BLMS	1B.2		G2T2	S2		No	23-Oct-12	CNDDDB occurrence 1 on BLM and pvt lands at The Cedars. Headwaters of Big Austin Creek and East Austin Creek. 10,000's of plants according to CNDDDB.																K	

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<i>Arctostaphylos canescens</i> <i>subsp. sonomensis</i>	Sonoma canescent manzanita	VASC	Ericaceae			BLMS	1B.2		G3G4T2	S2		No	31-Mar-15	Walker Ridge/Bear Creek (Source: Jim Weigand). Documented within the proposed right-of-way, as well as within the area of potential effect, of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010).																K	
<i>Arctostaphylos cruzensis</i>	Arroya de La Cruz manzanita	VASC	Ericaceae			BLMS	1B.2		G3	S3		No	31-Mar-15								S										
<i>Arctostaphylos glandulosa</i> <i>ssp. gabrielensis</i>	Gabilan Mountains manzanita	VASC	Ericaceae			BLMS	1B.2		G5T2	S2		No	13-Sep-12	Name change from <i>Arctostaphylos gabrielensis</i> to <i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i> as of August 23, 2010							S										
<i>Arctostaphylos hookeri</i> <i>subsp. hookeri</i>	Hooker's manzanita	VASC	Ericaceae			BLMS	1B.2		G3T2	S2		No	31-Mar-15									K									
<i>Arctostaphylos klamathensis</i>	Klamath manzanita	VASC	Ericaceae			BLMS	1B.2		G3	S3		No	31-Mar-15													S					
<i>Arctostaphylos montereyensis</i>	Monterey manzanita	VASC	Ericaceae			BLMS	1B.2		G2?	S2?		No	31-Mar-15	Fort Ord.								K									
<i>Arctostaphylos morroensis</i>	Morro manzanita	VASC	Ericaceae	FT			1B.1		G2	S2		Yes	13-Sep-12				K														
<i>Arctostaphylos myrtifolia</i>	lone manzanita	VASC	Ericaceae	FT			1B.2		G2	S2		No	13-Sep-12										K								
<i>Arctostaphylos nissenana</i>	Nissenan manzanita	VASC	Ericaceae			BLMS	1B.2		G1	S1		No	31-Mar-15										K								
<i>Arctostaphylos otayensis</i>	Otay manzanita	VASC	Ericaceae			BLMS	1B.2		G2	S2		No	31-Mar-15												K						
<i>Arctostaphylos pajaroensis</i>	Pajaro manzanita	VASC	Ericaceae			BLMS	1B.1		G1	S1		No	31-Mar-15	Fort Ord. Added based on 9/9/08 email from Bruce Delgado.								K									
<i>Arctostaphylos pilosula</i>	Santa Margarita manzanita	VASC	Ericaceae			BLMS	1B.2		G3	S3		No	13-Sep-12				K														
<i>Arctostaphylos pumila</i>	sandmat manzanita	VASC	Ericaceae			BLMS	1B.2		G1	S1		No	31-Mar-15									K									

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<i>Arctostaphylos rainbowensis</i>	rainbow manzanita	VASC	Ericaceae			BLMS	1B.1		G2	S2		No	31-Mar-15	CNDDDB Occurrence 43 is on BLM lands in Riverside County. Occurrence 56, is based on a 2005 collection by Woelfel and Woelfel, who claim it was collected on BLM lands in San Diego County, but CNDDDB maps it as a 1/5 mile radius circle, some of which is BLM and some of which is private. Some other occurrences are close to but not on BLM lands.																	K		
<i>Arctostaphylos rudis</i>	sand mesa manzanita	VASC	Ericaceae			BLMS	1B.2		G2	S2		No	31-Mar-15				K																
<i>Aristocapsa insignis</i>	Indian Valley spineflower	VASC	Polygonaceae			BLMS	1B.2		G2?	S2?		No	31-Mar-15				S																
<i>Astragalus agnicidus</i>	Humboldt milk-vetch	VASC	Fabaceae		SE	BLMS	1B.1		G3	S3		No	13-Sep-12			S																	
<i>Astragalus agrestis</i>	field milk-vetch	VASC	Fabaceae			BLMS	2.B2		G5	S2?		No	31-Mar-15	This species is rather widespread elsewhere, so the primary value of this population is its disjunct location in CA, and maintaining the genetic viability of the species across its range.	K				K														
<i>Astragalus albens</i>	Cushenberry milk-vetch	VASC	Fabaceae	FE			1B.1		G1	S1		No	06-Aug-13	A draft Recovery Plan was issued in 1997 but as of 8/6/2013 was not final. Some of the recovery actions in the draft plan have been started and partially implemented.				K															
<i>Astragalus anxius</i>	Ash Valley milk-vetch	VASC	Fabaceae			BLMS	1B.3		G1	S1		No		In Ash Valley ACEC/RNA.	K																		
<i>Astragalus argophyllus</i> var. <i>argophyllus</i>	silverleaf milk-vetch	VASC	Fabaceae			BLMS	2B.2		G5T4	S1		No	31-Mar-15					K	K														
<i>Astragalus atratus</i> var. <i>mensanus</i>	Darwin Mesa milk-vetch	VASC	Fabaceae			BLMS	1B.1		G4G5T1	S1		No	13-Sep-12	On Darwin Mesa.													K						
<i>Astragalus bernardinus</i>	San Bernardino Milk-Vetch	VASC	Fabaceae			BLMS	1B.2		G2G3	S2S3		No	06-Aug-13	Currently shown in Little San Bernardino Mountains, Little San Bernardino Mountains, New York Mountains, and Big Horn Mountains. There are 33 known occurrences in CNDDDB, 12 between 1992 and 2011.				K															

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<i>Astragalus brauntonii</i>	Braunton's milk-vetch	VASC	Fabaceae	FE			1B.1		G2	S2		Yes	13-Sep-12											S						
<i>Astragalus cimae var. sufflatus</i>	inflated Cima milk-vetch	VASC	Fabaceae			BLMS	1B.3		G3T3	S3		No	31-Mar-15	CNDDDB Occurrence number 2 is on BLM lands within the new boundary of the Cerro Gordo/Conglomerate Mesa ACEC.												K				
<i>Astragalus deanei</i>	Deane's milk-vetch	VASC	Fabaceae			BLMS	1B.1		G1	S1		No	31-Mar-15																K	
<i>Astragalus douglasii var. perstrictus</i>	Jacumba milk-vetch	VASC	Fabaceae			BLMS	1B.2		G5T2?	S2?		No	31-Mar-15																K	
<i>Astragalus ertterae</i>	Walker Pass milk-vetch	VASC	Fabaceae			BLMS	1B.3		G2	S2		No					K												K	
<i>Astragalus funereus</i>	black milk-vetch	VASC	Fabaceae			BLMS	1B.2		G2	S2.2		No						K												
<i>Astragalus hornii var. hornii</i>	Horn's milk-vetch	VASC	Fabaceae			BLMS	1B.1		G4G5T2 T3	S1		No	13-Sep-12				K													
<i>Astragalus jaegerianus</i>	Lane Mtn. milk-vetch	VASC	Fabaceae	FE			1B.1		G1	S1		No	13-Sep-12					K												
<i>Astragalus johannis-howellii</i>	Long Valley milkvetch	VASC	Fabaceae		SR	BLMS	1B.2		G2	S2		No	31-Mar-15					K												
<i>Astragalus lemmonii</i>	Lemmon's milk-vetch	VASC	Fabaceae			BLMS	1B.2	W	G2	S2		No	13-Sep-12							S										
<i>Astragalus lentiformis</i>	lens-pod milk-vetch	VASC	Fabaceae			BLMS	1B.2		G2	S2		No								K										
<i>Astragalus lentiginosus var. coachellae</i>	Coachella Valley milk-vetch	VASC	Fabaceae	FE			1B.2		G5T1	S1		No	31-Mar-15																K	
<i>Astragalus lentiginosus var. piscinensis</i>	Fish Slough milk-vetch	VASC	Fabaceae	FT			1B.1		G5T1	S1		Yes	13-Sep-12					K												
<i>Astragalus magdalenae var. peirsonii</i>	Peirson's milk-vetch	VASC	Fabaceae	FT	SE		1B.2		G3G4T2	S2		No	13-Sep-12																	
<i>Astragalus mojavensis var. hemigyus</i>	curved-pod milkvetch	VASC	Fabaceae			BLMS	1B.1		G3G4T2 T3	S1		No	15-Nov-10	Formerly on List 1A. Rediscovered on Darwin Mesa by Dana York in 2001 and verified in 2009.															K	
<i>Astragalus monoensis</i>	Mono milk-vetch	VASC	Fabaceae		SR	BLMS	1B.2		G2	S2		No	31-Mar-15	Was <i>A. monoensis</i> var. <i>monoensis</i> until the former <i>A. m.</i> var. <i>ravenii</i> was elevated to its own species ( <i>A. ravenii</i> Barneby).					K											

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<i>Astragalus nyensis</i>	Nye milk-vetch	VASC	Fabaceae			BLMS	1B.1		G3	S1		No	18-Sep-12	CNDDDB mapped 19 specific occurrences of this species found during surveys for a private solar development project in 2011. Specific occurrence number 2 is mapped on BLM lands (occurrence rating poor, only 1 plant found). Although the records in RareFind for occurrences 9 and 13 state that those occurrences occupy both private and BLM lands, both occurrences are mapped only on private lands.				K															
<i>Astragalus oocarpus</i>	San Diego rattleweed	VASC	Fabaceae			BLMS	1B.2		G3	S3		No	31-Mar-15																				
<i>Astragalus oophorus var. lavinii</i>	Lavin's milk-vetch	VASC	Fabaceae			BLMS	1B.2		G4T2	S1		No	15-Nov-10	Bodie Hills.					K														
<i>Astragalus pachypus var. jaegeri</i>	Jaeger's bush milk-vetch	VASC	Fabaceae			BLMS	1B.1		G4T1	S1		No	30-Jul-13	CNDDDB Occurrence 43, in Riverside County, is nonspecific, mapped in a 1 mile radius circle that includes BLM, State, and private lands; it is based on old (1880 and 1881) collections. Nonspecific Occurrence 6, also in Riverside County, has some BLM lands mapped inside a 1 mile radius circle, but most lands in the circle are private.																			
<i>Astragalus pseudodanthus</i>	Tonopah milk-vetch	VASC	Fabaceae			BLMS	1B.2		G3Q	S2		No	31-Mar-15						K														
<i>Astragalus pulsiferae var. pulsiferae</i>	Pulsifer's milk-vetch	VASC	Fabaceae			BLMS	1B.2	W	G4T2	S2 in CA; S1 in NV		No								K													

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<i>Astragalus pulsiferae</i> var. <i>suksdorfii</i>	Suksdorf's milk-vetch	VASC	Fabaceae			BLMS	1B.2		G4T2	S2		No	28-Apr-15	Occurrences formerly attributed to this species in the northern part of its range (formerly K in Alturas and Eagle Lake) are now <i>A. pulsiferae</i> var. <i>coronensis</i> [Welsh, S.L., R. Ondricek, and G. Clifton 2002. Varieties of <i>Astragalus pulsiferae</i> (Leguminosae). Rhodora 104:271-279]. Suspected in the Eagle Lake Field Office on conifer sites near Lake Almanor.						S										
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	VASC	Fabaceae			BLMS	1B.2		G2T2	S2		No	28-Apr-15			K														
<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	VASC	Fabaceae			BLMS	1B.2		G4T3	S3		No	13-Sep-12	Documented within the proposed right-of-way of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010).												S				K
<i>Astragalus shevockii</i>	Shevock's milk-vetch	VASC	Fabaceae			BLMS	1B.3		G3	S3		No	28-Apr-15				K													
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris's milk-vetch	VASC	Fabaceae			BLMS	1B.1		G1T1	S1		No	13-Sep-12													S				
<i>Astragalus tiehmii</i>	Tiehm's milk-vetch	VASC	Fabaceae			BLMS		W	G3	S2		No	28-Apr-15	Entire distribution of this plant is on public lands administered by the Surprise FO. Nevada only.															K	
<i>Astragalus tricarinatus</i>	triple-ribbed milk-vetch	VASC	Fabaceae	FE			1B.2		G1	S1		No	13-Sep-12															K		
<i>Astragalus webberi</i>	Webber's milk-vetch	VASC	Fabaceae			BLMS	1B.2		G1	S1		No								S										

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<i>Atriplex argentea</i> var. <i>longitrichoma</i>	Pahrump orache	VASC	Chenopodiaceae			BLMS	1B.1		G5T2	S2		No	03-Oct-11	The only two occurrences in CA are mapped by CNDDDB on BLM lands in CA near the NV border. The occurrences are based on a 1983 collection by Mary DeDecker and on a 1991 collection by Stutz. Added to BLM SS plant list on 10/3/2011. Not sure why this species had not previously been on our list.				K											
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heart-leaved saltbush	VASC	Chenopodiaceae			BLMS	1B.2		G3T2	S2		No	28-Apr-15	Occurrence number 82 in the CNDDDB is on BLM lands in the Carrizo Plain. Other occurrences in the San Joaquin Valley are proximate to BLM lands.			K												
<i>Atriplex cordulata</i> var. <i>erecticaulis</i>	Earlimart orache	VASC	Chenopodaceae			BLMS	1B.2		G3T1	S1		No	28-Apr-15	Formerly <i>A. erecticaluis</i> Stutz, Chu & Sanderson.			S												
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley crownscale	VASC	Chenopodiaceae	FE			1B.1		G4T1	S1		No	26-Aug-09	This plant had been considered K for many years but review of CNDDDB on 8-26-09 shows no occurrences on BLM lands.											S				
<i>Atriplex coronata</i> var. <i>vallicola</i>	Lost Hills crownscale	VASC	Chenopodiaceae			BLMS	1B.2		G4T2	S2		No	15-Nov-10	Formerly <i>A. vallicola</i> Hoover.			K												
<i>Atriplex subtilis</i>	subtle orache	VASC	Chenopodaceae			BLMS	1B.2		G1	S1		No	28-Apr-15				S												
<i>Baccharis vanessae</i>	Encinitas coyotebrush	VASC	Asteraceae	FT	SE		1B.1		G1	S1		No	06-Aug-13	CNDDDB Occurrence 30 is on BLM lands--11 plants observed in 2000 on south side of Otay Mountains in wilderness.											K				
<i>Balsamorhiza lanata</i>	woolly balsamroot	VASC	Asteraceae			BLMS	1B.2		G3	S3		No	13-Sep-12	Elevated to <i>B. lanata</i> from <i>B. hookeri</i> Nutt. var. <i>lanata</i> Sharp.												K			



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<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	13-Sep-12	Formerly <i>B. macrolepis</i> Sharp var. <i>macrolepis</i> . Jepson Manual 2nd edition submerges <i>B. m.</i> var. <i>platylepis</i> (Sharp) Ferris, which was the only variety, into <i>B. hookeri</i> Nutt. Documented in the Ukiah Field Office within the proposed right-of-way of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010).																K		
<i>Balsamorhiza sericea</i>	silky balsamroot	VASC	Asteraceae			BLMS	1B.3		G4Q	S3		No	28-Apr-15																	S		
<i>Berberis harrisoniana</i>	Kofa Mountain barberry	VASC	Berberidaceae			BLMS	1B.2		G1G2	S1		No	28-Apr-15	In Whipple Wash																		
<i>Berberis nevinii</i>	Nevin's barberry	VASC	Berberidaceae	FE	SE		1B.1		G1	S1		No	13-Sep-12	Formerly <i>Mahonia nevinii</i> (Gray) Fedde																	K	
<i>Bloomeria clevelandii</i>	San Diego goldenstar	VASC	Themidaceae			BLMS	1B.1		G2	S2		No	06-Aug-13	Formerly <i>Muilla clevelandii</i> (S. Watson) Hoover. See discussion at: <a href="http://www.efloras.org/florataxon.aspx?flora_id=1&amp;taxon_id=121293">http://www.efloras.org/florataxon.aspx?flora_id=1&amp;taxon_id=121293</a> . CNDDDB specific Occurrence 19 is on both BLM and private lands. Occurrence 41 appears to be partially on BLM lands as well. Status changed from "S" to "K" on 8/6/2013.																		K
<i>Boechera bodiensis</i>	Bodie Hills rock cress	VASC	Brassicaceae			BLMS	1B.3		G2	S2		No	15-Nov-10	Formerly <i>Arabis bodiensis</i> Roll.					K													
<i>Boechera lincolnensis</i>	Lincoln rock cress	VASC	Brassicaceae			BLMS	2B.3		G4?	S2		No	28-Apr-15	Formerly <i>Arabis pulchra</i> S. Watson var. <i>munciensis</i> M.E. Jones. On Darwin Mesa. Formerly known as Darwin rock cress.																	K	
<i>Boechera serpenticola</i>	Serpentine Rockcress	VASC	Brassicaceae			BLMS	1B.2		G1	S1		No	13-Sep-12	CNDDDB maps nonspecific areas immediately adjacent to BLM lands near summit of Bully Choop Mountain. North-facing slopes on serpentine talus.																	S	

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<i>Boletus haematinus</i>	red-pored bolete	FUNG	Boletaceae			BLMS			G2G3	S2?		Yes	28-Apr-15		S																
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	VASC	Themidaceae	FT	SE		1B.1		G1	S1		No	06-Aug-13	CNDDDB specific Occurrence 25 is partly on BLM lands. Status changed from "S" to "K" on 8/6/2013.										K							
<i>Brodiaea insignis</i>	Kaweah brodiaea	VASC	Themidaceae		SE	BLMS	1B.2		G1	S1		No	13-Sep-12			S															
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	VASC	Themidaceae			BLMS	1B.1		G2	S2		No	28-Apr-15												K						
<i>Brodiaea rosea</i>	Indian Valley brodiaea	VASC	Themidaceae		SE	BLMS	1B.1		G2	S2		No	28-Apr-15	Formerly <i>Brodiaea coronaria</i> (Salisb.) Engler subsp. <i>rosea</i> (Greene) Niehaus. Jepson Manual 2nd edition elevates to species.											S				K		
<i>Bryoria pseudocapillaris</i>	horsehair lichen	LICH	Parmeliaceae			BLMS	3.2		G3	S2		No	28-Apr-15		K																
<i>Bryoria spiralifera</i>	twisted horsehair lichen	LICH	Parmeliaceae			BLMS	1B.1		G3	S1S2		No	26-Jan-15	Added to CDFW/CNPS list on 2/1/2010. Previously already on list as BLMS.	K																
<i>Bryoria tortuosa</i>	yellow-twist horsehair	LICH	Parmeliaceae			BLMS			G5	S2		No	28-Apr-15	S5 in OR; S3 in WA.	K												K				
<i>Buxbaumia viridis</i>	green bug moss	BRYO	Buxbaumiaceae			BLMS	2.2		G4G5	S2		No	03-Jun-13		K											S					
<i>California macrophylla</i>	round-leaved filaree	VASC	Geraniaceae			BLMS	1B.1		G2	S2		No	28-May-15	Nine CNDDDB occurrences on the Payne Ranch, Colusa and Lake counties, Ukiah Field Office. CNDDDB Occurrence 67 is on BLM lands in Riverside County, within the Palm Springs Field Office. Documented occurrences on BLM lands in the Carrizo Plain and on BLM lands in Hollister.		K													K		
<i>Calochortus clavatus var. avius</i>	Pleasant Valley mariposa lily	VASC	Liliaceae			BLMS	1B.2		G4T2	S2		No	13-Sep-12										S								
<i>Calochortus clavatus var. gracilis</i>	slender mariposa lily	VASC	Liliaceae			BLMS	1B.2		G4T2T3	S2S3		No	28-Apr-15	The large polygon for nonspecific CNDDDB Occurrence 18 in Los Angeles County overlaps some BLM lands and other occurrences are close to BLM lands in Los Angeles County.											S						

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<i>Calochortus dunnii</i>	Dunn's mariposa	VASC	Liliaceae		SR	BLMS	1B.2		G2?	S2?		No	28-Apr-15												K				
<i>Calochortus excavatus</i>	Inyo mariposa	VASC	Liliaceae			BLMS	1B.1		G2	S2		No	13-Sep-12					K											
<i>Calochortus fimbriatus</i>	late-flowered mariposa lily	VASC	Liliaceae			BLMS	1B.3		G3	S3		No	28-Apr-15	CNDDDB Occurrence 41 on the Los Padres National Forest is within 800m of BLM lands in Ventura County. Added to the CNPS/CDFG lists as RPR 1B.3 on 10-26-2012.			S												
<i>Calochortus greenei</i>	Greene's mariposa	VASC	Liliaceae			BLMS	1B.2		G3	S3		No	13-Sep-12															K	
<i>Calochortus longebarbatus</i> <i>var. longebarbatus</i>	long-haired star-tulip	VASC	Liliaceae			BLMS	1B.2		G4T3	S3		No			S													S	
<i>Calochortus monanthus</i>	Shasta River mariposa	VASC	Liliaceae			BLMS	1A		GH	SH		No																S	
<i>Calochortus obispoensis</i>	San Luis mariposa lily	VASC	Liliaceae			BLMS	1B.2		G2	S2		No	28-Apr-15				S												
<i>Calochortus palmeri</i> <i>var. palmeri</i>	Palmer's mariposa lily	VASC	Liliaceae			BLMS	1B.2		G3T3?	s3?		No	28-Apr-15	CNDDDB occurrence number 66 is located on Ridgecrest Field Office parcels. CNDDDB occurrence 18 and 20 are located on scattered Bakersfield Field Office parcels.			K											K	
<i>Calochortus persistens</i>	Siskiyou mariposa lily	VASC	Liliaceae	FC	SR	BLMS	1B.2		G1	S1		No	28-Apr-15															S	
<i>Calochortus raichei</i>	The Cedars fairy-lantern	VASC	Liliaceae			BLMS	1B.2		G2	S2		No	23-Oct-12	CNDDDB occurrences 4 and 8 are definitely on BLM land at The Cedars; occurrence 7 is mapped as occurring partly on BLM land but RareFind account says it occurs on private land.															K
<i>Calochortus simulans</i>	San Luis Obispo mariposa lily	VASC	Liliaceae			BLMS	1B.3		G2	S2		No	28-Apr-15				S												
<i>Calochortus striatus</i>	alkali mariposa lily	VASC	Liliaceae			BLMS	1B.2		G3	S3		No	28-Apr-15				K	S										K	
<i>Calochortus westonii</i>	Shirley Meadows star-tulip	VASC	Liliaceae			BLMS	1B.2		G2	S2		No	28-Apr-15				K												
<i>Calycadenia hooveri</i>	Hoover's calycadenia	VASC	Asteraceae			BLMS	1B.3		G3	S3		No	28-Apr-15				S												
<i>Calycadenia micrantha</i>	small-flowered calycadenia	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15																S

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<i>Calycadenia villosa</i>	dwarf calycadenia	VASC	Asteraceae			BLMS	1B.1		G3	S3		No	28-Apr-15				S															
<i>Calyptridium parryi</i> var. <i>hesseae</i>	Santa Cruz Mountains pussypaws	VASC	Montiaceae			BLMS	1B.1		G3G4T2	S2		No	27-Jun-13	The Jepson Manual 2nd edition retains the genus <i>Calyptridium</i> as well as the combination <i>C. parryi</i> var. <i>hesseae</i> . Flora North America moves <i>Calyptridium</i> to <i>Cistanthe</i> and reduces this var. to a synonym of <i>Cistanthe parryi</i> . There are two collections by C. Matt Guilliams and Michael G. Simpson (SDSU17444/17445) on BLM near Big and Little Spanish Lakes in Clear Creek Rec. Area. There is another collection by Griffin (JEPS77709) on BLM in N. Clear Creek Canyon. None of these yet mapped in CNDDDB (as of 6/27/2013).																		
<i>Calyptridium pulchellum</i>	Mariposa pussypaws	VASC	Montiaceae	FT			1B.1		G1	S1		No	15-Nov-10	This is the treatment in the Jepson Manual 2nd edition. Flora North America puts this species into the genus <i>Cistanthe</i> .			S															
<i>Calystegia collina</i> subsp. <i>tridactylosa</i>	three-fingered morning-glory	VASC	Convolvulaceae			BLMS	1B.2		G4T1	S1		No	22-Nov-10	Known to occur on BLM Toney Creek holding, Eden Valley. Documented in the Ukiah Field Office within the proposed right-of-way, as well as within the area of potential effect, of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010).		K														K		
<i>Calystegia purpurata</i> subsp. <i>saxicola</i>	coastal bluff morning-glory	VASC	Convolvulaceae			BLMS	1B.2		G4T2T3	S2S3		No	26-Feb-15	Known from the Stornetta Unit, per the following collections: CAS263828, 1937, and RSA7999419, 2013.																K		

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<i>Calystegia stebbinsii</i>	Stebbins' morning glory	VASC	Convolvulaceae	FE	SE		1B.1		G1	S1		Yes	13-Sep-12										K						
<i>Calystegia vanzuukiae</i>	Van Zuuk's morning-glory	VASC	Convolvulaceae			BLMS	1B.3		G2Q	S2		No	20-Jan-15	First described by Brummitt, R.K. and S.M. Namoff. 2013. <i>Calystegia vanzuukiae</i> (Convolvulaceae), a remarkable new species from Central California. <i>Aliso</i> 31(1): 15-18. Added as 1B.3 on July 16, 2014. On serpentine and gabbro soils in the Sierra Nevada foothills of Placer and El Dorado counties. On BLM lands according to Graciela Hinshaw (email dated June 11, 2014).									K						
<i>Camissonia benitensis</i>	San Benito evening-primrose	VASC	Onagraceae	FT			1B.1		G2	S2		Yes	13-Sep-12									K							
<i>Camissonia integrifolia</i>	Kern River evening-primrose	VASC	Onagraceae			BLMS	1B.3		G2	S2		No	13-Sep-12			S													
<i>Camissoniopsis hardhamiae</i>	Hardham's evening-primrose	VASC	Onagraceae			BLMS	1B.2		G1Q	S1		No	17-Mar-15	Formerly <i>Camissonia hardhamiae</i> P.H. Raven. Slightly less than half of CNDDDB specific occurrence 8 is mapped on BLM lands. Occurrence record reports lands as private, but this likely the result of not knowing where boundary with BLM was. Record from 4/10/1987.			K				S								
<i>Campanula californica</i>	swamp harebell	VASC	Campanulaceae			BLMS	1B.2		G3	S3		No	26-Feb-15	Known from the Stornetta Unit, per the following collection: SBBG124996, 1967.															K
<i>Campanula exigua</i>	chaparral harebell	VASC	Campanulaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	CNDDDB maps a nonspecific occurrence based on two Griffin collections along Clear Creek Rd; also a collection in the area by C. & P. McMillan (JEPS3010) has not yet been mapped by CNDDDB (as of 6-27-2013).								K							
<i>Campanula sharsmithiae</i>	Sharsmith's harebell	VASC	Campanulaceae			BLMS	1B.2		G1	S1		No										S							
<i>Campanula shetleri</i>	Castle Crags harebell	VASC	Campanulaceae			BLMS	1B.3		G2	S2		No	28-Apr-15												S				

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<i>Carex klamathensis</i>	Klamath sedge	VASC	Cyperaceae			BLMS	1B.2		G2	S2		No	15-Nov-10	CNDDDB maps (Occurrence 3) within 1/2 mile of BLM lands in Tehama Co. BLM lands appear to have same serpentine substrate as Occurrence 3 in CNDDDB.											S				
<i>Carex obispoensis</i>	San Luis Obispo sedge	VASC	Cyperaceae			BLMS	1B.2		G2G3	S2S3		No	28-Apr-15				K												
<i>Carex saliniformis</i>	deceiving sedge	VASC	Cyperaceae			BLMS	1B.2		G2	S2		No	17-Mar-15	Known from Alder Creek near Stornetta Unit, according to Jim Weigand (2/3/2015).															S
<i>Carlquistia muirii</i>	Muir's raillardella	VASC	Asteraceae			BLMS	1B.3		G2	S2		No	28-Apr-15	Formerly <i>Raillardopsis muirii</i> (Gray) Rydb.			K										K		
<i>Carpenteria californica</i>	tree-anemone	VASC	Hydrangeaceae		ST	BLMS	1B.2		G1?	S1?		No	28-Apr-15				S												
<i>Castilleja ambigua subsp. humboldtensis</i>	Humboldt Bay owl's-clover	VASC	Orobanchaceae			BLMS	1B.2		G4T2	S2		No	28-Apr-15			K													
<i>Castilleja ambigua subsp. Insalutata</i>	pink Johnny-nip	VASC	Orobanchaceae			BLMS	1B.1		G4T1	S1		No	26-Jan-15	Added to CDFW/CNPS list as 1B.1 on 3/1/2010. Occurrence Number 13 (nonspecific 4/5 mile) is on Fort Ord in vicinity of Henneken Flats, "Mima Mound Area." The mapped circle spans BLM and Army lands (the latter of which may be transferred to BLM in the future).								S							
<i>Castilleja campestris subsp. succulenta</i>	succulent owl's clover	VASC	Orobanchaceae	FT	SE		1B.2		G4?T2	S2		No	28-Apr-15	Formerly designated as "K" in the Hollister FO (see Occurrence #35 in the CNDDDB), but this is a holdover from the time the Hollister FO managed some of the public lands now in the Bakersfield FO.			K												
<i>Castilleja densiflora subsp. obispoensis</i>	Obispo Indian paintbrush	VASC	Orobanchaceae			BLMS	1B.2		G5T2	S2		No	28-Apr-15				S												
<i>Castilleja gleasoni</i>	Mt. Gleason Indian paintbrush	VASC	Orobanchaceae		SR	BLMS	1B.2		G2	S2		No	28-Apr-15	Name change from <i>Castilleja gleasonii</i> to <i>Castilleja gleasoni</i> as of March 3, 2011.											S				

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<i>Castilleja mendocinensis</i>	Mendocino Coast paintbrush	VASC	Orobanchaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Now known from the Stornetta Unit, as well as CCNM rocks at Mendocino. Stornetta collection: SBBG21322, 1964. Info from Jim Weigand, 2/3/2015.		S													K
<i>Castilleja rubicundula</i> <i>subsp. rubicundula</i>	pink creamsacs	VASC	Orobanchaceae			BLMS	1B.2		G5T2	S2		No	13-Sep-12	On BLM lands in Bear Creek Watershed acc to 12/10/08 email from Jim Weigand. Documented within the proposed right-of-way, as well as within the area of potential effect, of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010).												S			K
<i>Caulanthus californicus</i>	California jewelflower	VASC	Brassicaceae	FE	SE		1B.1		G1	S1		Yes	13-Sep-12				K												
<i>Caulanthus lemmonii</i>	Lemmon's jewelflower	VASC	Brassicaceae			BLMS	1B.2		G3	S3		No	28-Apr-15	Formerly <i>C. coulteri</i> Wats. var. <i>lemmonii</i> (Wats.) Munz.			K												
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	VASC	Rhamnaceae			BLMS	1B.1		G1	S1		No	28-Apr-15																S
<i>Ceanothus cyaneus</i>	Lakeside ceanothus	VASC	Rhamnaceae			BLMS	1B.2		G2	S2		No	28-Apr-15																K
<i>Ceanothus divergens</i>	Calistoga ceanothus	VASC	Rhamnaceae			BLMS	1B.2		G2	S2		No	28-Apr-15																S
<i>Ceanothus ferrisiae</i>	coyote ceanothus	VASC	Rhamnaceae	FE			1B.1		G2	S2		Yes	13-Sep-12																
<i>Ceanothus hearstiorum</i>	Hearst's ceanothus	VASC	Rhamnaceae		SR	BLMS	1B.2		G1	S1		No																	

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<i>Ceanothus otayensis</i>	Otay Mountain ceanothus	VASC	Rhamnaceae			BLMS	1B.2		G1	S1		No	30-Jul-13	CNDDDB Occurrence 4 is clearly on BLM lands on the south slope of Otay Mountain, based on a 2001 field survey form from Julie Evens. Nonspecific Occurrence 1, on the northeast face of Otay Mountain, has its entire mapped 1-mile radius circle on BLM lands, as does the nonspecific 2/5 mile radius circle of Occurrence 2.																K		
<i>Ceanothus roderickii</i>	Pine Hill ceanothus	VASC	Rhamnaceae	FE	SR		1B.2		G1	S1		Yes	13-Sep-12										K									
<i>Centromadia parryi subsp. congdonii</i>	Congdon's tarplant	VASC	Asteraceae			BLMS	1B.1		G3T2	S2		No	28-Apr-15	Formerly <i>Hemizonia parryi</i> Greene subsp. <i>congdonii</i> (Rob. & Greenm.) Keck; Fort Ord. Rare Plant Rank changed from 1B.2 to 1B.1 by CNPS/CDFW on 11-5-2012.																		
<i>Centromadia parryi subsp. parryi</i>	pappose tarplant	VASC	Asteraceae			BLMS	1B.2		G3T1	S1		No	28-Apr-15	Formerly <i>Hemizonia parryi</i> Greene. Known in Bear Creek watershed acc. 12/10/2008 email from Jim Weigand.																	K	
<i>Chaenactis glabriuscula var. orcuttiana</i>	Orcutt's pincushion	VASC	Asteraceae			BLMS	1B.1		G5T1	S1		No	18-Sep-12	CNDDDB historic, nonspecific occurrence 12 on land slated for wind energy. There are BLM lands inside the 1 mile radius circle, but most of the lands inside the circle are private.																		
<i>Chaenactis suffrutescens</i>	Shasta chaenactis	VASC	Asteraceae			BLMS	1B.3		G3	S3		No																			K	
<i>Chamaesyce hooveri</i>	Hoover's spurge	VASC	Euphorbiaceae	FT			1B.2		G2	S2		Yes	13-Sep-12	Formerly <i>Chamaesyce hooveri</i> (Wheeler) Koutnik.																		S
<i>Chlorogalum grandiflorum</i>	Red Hills soaproot	VASC	Agavaceae			BLMS	1B.2		G3	S3		No	13-Sep-12																			
<i>Chlorogalum pomeridianum var. minus</i>	dwarf soaproot	VASC	Agavaceae			BLMS	1B.2		G5T2	S2		No	13-Sep-12																			K
<i>Chlorogalum purpureum var. purpureum</i>	purple amole	VASC	Agavaceae	FT			1B.1		G2T2	S2		No	13-Sep-12	Critical Habitat, known habitat in Bakersfield Field Office (Mineral Estate).			S															



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<i>Chloropyron maritimum subsp. palustre</i>	Pt. Reyes birds-beak	VASC	Orobanchaceae			BLMS	1B.2		G4?T2	S2		No	28-Apr-15	Name change from <i>Cordylanthus maritimum</i> subsp. <i>palustris</i> to <i>Chloropyron maritimum</i> subsp. <i>palustre</i> as of March 3, 2011.		K															
<i>Chloropyron molle subsp. hispidum</i>	hispid bird's-beak	VASC	Orobanchaceae			BLMS	1B.1		G2T2	S2		No	28-Apr-15	Name change from <i>Cordylanthus mollis</i> subsp. <i>hispidus</i> to <i>Chloropyron molle</i> subsp. <i>hispidum</i> as of March 3, 2011.			S				S										
<i>Chloropyron tecopense</i>	Tecopa bird's-beak	VASC	Orobanchaceae			BLMS	1B.2		G2	S1		No	03-Oct-11	Name change from <i>Cordylanthus tecopensis</i> to <i>Chloropyron tecopense</i> as of March 3, 2011.				K													
<i>Choiromyces venosus</i>	hypogeous truffle	FUNG	Tuberaceae			BLMS			G4G5	S1		No	28-Apr-15	Also S1 in OR.		K															
<i>Chorizanthe biloba var. immemora</i>	Hernandez spineflower	VASC	Polygonaceae			BLMS	1B.2		G3T1?	S1?		No	13-Sep-12	Near mouth of Clear Creek.								K									
<i>Chorizanthe breweri</i>	Brewer's spineflower	VASC	Polygonaceae			BLMS	1B.3		G2	S2		No	28-Apr-15				S														
<i>Chorizanthe parryi var. parryi</i>	Parry's spineflower	VASC	Polygonaceae			BLMS	1B.1		G3T3	S3		No	28-Apr-15	Occurrences 74 and 79 in CNDDDB definitely on BLM lands; Occurrence 43 may be on BLM lands.											K						
<i>Chorizanthe polygonoides var. longispina</i>	long-spined spineflower	VASC	Polygonaceae			BLMS	1B.2		G5T3	S3		No	18-Sep-12	Specific CNDDDB occurrences on BLM lands in Palm Springs, nonspecific CNDDDB occurrence number 133 in El Centro includes BLM lands slated for renewable energy within the 1 mile radius mapped circle.							S				K						
<i>Chorizanthe pungens var. pungens</i>	Monterey spineflower	VASC	Polygonaceae	FT			1B.2		G2T2	S2		Yes	13-Sep-12									K									
<i>Chorizanthe rectispina</i>	straight-awned spineflower	VASC	Polygonaceae			BLMS	1B.3		G1	S1		No				K						K									
<i>Chorizanthe robusta var. robusta</i>	robust spineflower	VASC	Polygonaceae	FE			1B.1		G2T1	S1		Yes	15-Nov-10									S									

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<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	white-bracted spineflower	VASC	Polygonaceae			BLMS	1B.2		G4T3	S3		No	28-Apr-15	CNDDDB nonspecific Occurrence 33 near Old Woman Springs has BLM lands within the mapped 1-mile radius circle in the Barstow Field Office. Several specific and nonspecific occurrences are on BLM lands in the Palm Springs Field Office in and near Whitewater Canyon.			S							K					
<i>Cirsium ciliolatum</i>	Ashland thistle	VASC	Asteraceae		SE	BLMS	2B.1		G3	S1		No	28-Apr-15												S				
<i>Cirsium crassicaule</i>	slough thistle	VASC	Asteraceae			BLMS	1B.1		G2	S2		No	28-Apr-15			S													
<i>Cirsium fontinale</i> var. <i>campylon</i>	Mt. Hamilton thistle	VASC	Asteraceae			BLMS	1B.2		G2T2	S2		No	13-Sep-12								S								
<i>Cirsium fontinale</i> var. <i>obispoense</i>	Chorro Creek bog thistle	VASC	Asteraceae	FE	SE		1B.2		G2T2	S2		Yes	13-Sep-12			S													
<i>Cirsium occidentale</i> var. <i>lucianum</i>	Cuesta Ridge thistle	VASC	Asteraceae			BLMS	1B.2		G3G4T2	S2		No	13-Sep-12	CNDDDB maps about a mile from BLM lands near Santa Margarita Lake.			S												
<i>Cirsium rhotophilum</i>	surf thistle	VASC	Asteraceae		ST	BLMS	1B.2		G1	S1		No	13-Sep-12	On BLM lands at the Point Sal ACEC.			K												
<i>Cirsium scariosum</i> var. <i>loncholepis</i>	La Graciosa thistle	VASC	Asteraceae	FE	ST		1B.1		G5T1	S1		No	13-Sep-12	Critical Habitat, potential habitat in the Bakersfield Field Office (Mineral Estate). Name change from <i>Cirsium loncholepis</i> to <i>Cirsium scariosum</i> var. <i>loncholepis</i> as of March 3, 2011.			S												
<i>Clarkia australis</i>	small southern clarkia	VASC	Onagraceae			BLMS	1B.2		G2	S2		No	28-Apr-15			S													
<i>Clarkia biloba</i> subsp. <i>australis</i>	Mariposa clarkia	VASC	Onagraceae			BLMS	1B.2		G4G5T2 T3	S2S3		No	28-Apr-15									K							
<i>Clarkia biloba</i> subsp. <i>brandegeae</i>	Brandegee's clarkia	VASC	Onagraceae			BLMS	1B.2		G4G5T4	S2S3		No	28-Apr-15									K		K					
<i>Clarkia borealis</i> subsp. <i>arida</i>	Shasta clarkia	VASC	Onagraceae			BLMS	1B.1		G3T2	S2		No	18-Apr-13												K				
<i>Clarkia borealis</i> subsp. <i>borealis</i>	northern clarkia	VASC	Onagraceae			BLMS	1B.3		G3T3	S3		No	28-Apr-15												S				

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<i>Clarkia delicata</i>	delicate clarkia	VASC	Onagraceae			BLMS	1B.2		G3	S3		No	28-Apr-15	Collections by Mark Elvin 3365 (UC Irvine IRVC27200), April 24, 2004, and Jon P. Rebman et al. 8824 (UC Irvine IRVC27254), May 4, 2003, are both on BLM lands on Otay Mountain. Nonspecific CNDDDB Occurrence 12 has some BLM lands within the mapped 1-mile radius circle.												K				
<i>Clarkia gracilis subsp. albicaulis</i>	white-stemmed clarkia	VASC	Onagraceae			BLMS	1B.2		G5T2	S2		No	28-Apr-15																	K
<i>Clarkia mildrediae subsp. mildrediae</i>	Mildred's clarkia	VASC	Onagraceae			BLMS	1B.3		G3T3	S3		No	13-Sep-12																	S
<i>Clarkia mosquinii</i>	Mosquin's clarkia	VASC	Onagraceae			BLMS	1B.1		G2	S2		No	15-Nov-10	Formerly <i>Clarkia mosquinii</i> subsp. <i>mosquinii</i> and <i>C. m.</i> subsp. <i>xerophila</i> .																K
<i>Clarkia rostrata</i>	beaked clarkia	VASC	Onagraceae			BLMS	1B.3		G3	S3		No	28-Apr-15																	K
<i>Clarkia springvillensis</i>	Springville clarkia	VASC	Onagraceae	FT	SE		1B.2		G2	S2		No	13-Sep-12			S														
<i>Clarkia tembloriensis subsp. calientensis</i>	Vasek's clarkia	VASC	Onagraceae			BLMS	1B.1		G3T1	S1		No	18-Apr-13			S														
<i>Clavariadelphus ligula</i>	strap coral	FUNG	Gomphaceae			BLMS			None	None		No	16-Nov-10		S															
<i>Clavulina castanopes var. lignicola</i>	'hairy-stemmed coral'	FUNG	Clavulinaceae			BLMS			None	None		No	16-Nov-10		S															
<i>Clinopodium chandleri</i>	San Miguel savory	VASC	Lamiaceae			BLMS	1B.2		G2	S2		No	30-Jul-13	CNDDDB occurrences 1, 2, and 3 are all on BLM lands north of Otay Mountain. Entire 1-mile radius circle of Occurrence 23 is on BLM lands on Otay Mountain.																K
<i>Clitocybe subditopoda</i>	'little brown mushroom'	FUNG	Tricholomataceae			BLMS			G3G4	S1S3		No	28-Apr-15		K															
<i>Collinsia antonina</i>	San Antonio collinsia	VASC	Plantaginaceae			BLMS	1B.2		G1	S1		No	18-Apr-13									S								

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<i>Comarostaphylis diversifolia subsp. diversifolia</i>	summer holly	VASC	Rhamnaceae			BLMS	1B.2		G3T2	S2		No	30-Jul-13	CNDDDB Occurrences 10, 83, and 88 are on BLM lands in the Otay Mountain area. Collection SD191122 by Jonathon K. Snapp-Cook and others, April 28, 2006, is on BLM lands on the west side of Otay Mountain.																K	
<i>Cordyceps ophioglossoides</i>	truffle eater	FUNG	Clavicipitaceae			BLMS			G3G4	S3S4		No	28-Apr-15			S															
<i>Cordylanthus nidularius</i>	Mt. Diablo bird's-beak	VASC	Orobanchaceae		SR	BLMS	1B.1		G1	S1		No	18-Apr-13									S									
<i>Cordylanthus rigidus subsp. littoralis</i>	seaside bird's-beak	VASC	Orobanchaceae		SE	BLMS	1B.1		G5T2	S2		No	13-Sep-12			K						K									
<i>Cordylanthus tenuis subsp. pallescens</i>	pallid bird's-beak	VASC	Orobanchaceae			BLMS	1B.2		G4G5T1	S1		No	13-Sep-12																	S	
<i>Croton wigginsii</i>	Wiggins' croton	VASC	Euphorbiaceae		SR	BLMS	2B.2		G2G3	S2		No	28-Apr-15																		
<i>Cryptantha clokeyi</i>	Clokey's cryptantha	VASC	Boraginaceae			BLMS	1B.2		G2	S2		No	13-Sep-12	SE Red Mt.																S	
<i>Cryptantha crinita</i>	silky cryptantha	VASC	Boraginaceae			BLMS	1B.2		G2	S2		No	13-Sep-12																	K	
<i>Cryptantha dissita</i>	serpentine cryptantha	VASC	Boraginaceae			BLMS	1B.2		G2	S2		No	13-Sep-12	Suspected to occur at Eden Valley, Arcata Field Office. Name change from <i>Cryptantha clevelandii</i> var. <i>dissita</i> to <i>Cryptantha dissita</i> as of March 3, 2011. Species found on Walker Ridge (Ukiah Field Office) as part of rare plant inventory for proposed wind energy development. Re-ranked from rare plant rank 1B.1 to 1B.2 on 10-25-2012.		S															K
<i>Cryptantha excavata</i>	deep-scarred cryptantha	VASC	Boraginaceae			BLMS	1B.3		G1	S1		No	28-Apr-15	Known from Walker Ridge/Bear Creek acc. Jim Weigand. Old, nonspecific CNDDDB occurrences mapped near BLM lands in Colusa County.																	K
<i>Cryptantha ganderi</i>	Gander's cryptantha	VASC	Boraginaceae			BLMS	1B.1		G1G2	S1		No	13-Sep-12																	S	

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<i>Cryptantha mariposae</i>	Mariposa cryptantha	VASC	Boraginaceae			BLMS	1B.3		G3	S3		No	28-Apr-15	Two collections by Vern Yadon, one in Clear Creek at 3307 ft elevation and the other at Santa Rita Peak, just below east side. CNDDDB doesn't yet show these occurrences (as of 6/27/2013) but this is because they didn't know about them at last update (pers. comm. Nick Jensen, May 2009). This is a significant range extension. The Yadon collections were still not mapped in CDDDB as of 4/28/2015.									K	K							
<i>Cryptantha roosiorum</i>	bristlecone cryptantha	VASC	Boraginaceae		SR	BLMS	1B.2		G2	S2		No	18-Apr-13					S									K				
<i>Cryptantha schoolcraftii</i>	Schoolcraft's cryptantha	VASC	Boraginaceae			BLMS	2B.2	W	G3	S1 (CA); S3 (NV)		No	28-Apr-15	Common name "ash cryptantha" used in Jepson Manual 2nd edition. Nevada Heritage Program uses "Schoolcraft catseye."														K			
<i>Cusickiella quadricostata</i>	Bodie Hills cusickiella	VASC	Brassicaceae			BLMS	1B.2		G3	S2		No	28-Apr-15					K													
<i>Cylindropuntia fosbergii</i>	pink teddy-bear cholla	VASC	Cactaceae			BLMS	1B.3		G2	S2		No	18-Sep-12	Treated as a hybrid, <i>C. xfosbergii</i> in the Jepson Manual, Second Edition, but based on a recent paper by Mayer et al. ( <i>Madrone</i> 58: 106-112), CDFG and CNPS have elevated to specific level and assigned a California Rare Plant Rank of 1.3 (on 5-7-2012). Several occurrences on BLM lands in the Monument Peak Quadrangle.							K										
<i>Cylindropuntia munzii</i>	Munz cholla	VASC	Cactaceae			BLMS	1B.3		G3	S1		No	18-Apr-13	Formerly <i>Opuntia munzii</i> C.B. Wolf.											K		K				
<i>Cymopterus deserticola</i>	desert cymopterus	VASC	Apiaceae			BLMS	1B.2		G2	S2		No	13-Sep-12	East of Cuddeback Lake and north of Edwards AFB.				K									K				
<i>Cymopterus ripleyi</i> var. <i>saniculooides</i>	Ripley's cymopterus	VASC	Apiaceae			BLMS	1B.2		G3G4T3 Q	S1		No	18-Apr-13	NE Haiwee Reservoir.													K				
<i>Cypripedium fasciculatum</i>	clustered lady's slipper	VASC	Orchidaceae			BLMS	4.2		G4	S4		No	28-Apr-15													K					
<i>Cypripedium montanum</i>	mountain lady's slipper	VASC	Orchidaceae			BLMS	4.2		G4	S4		No	28-Apr-15													K					

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<i>Dalea ornata</i>	ornate dalea	VASC	Fabaceae			BLMS	2B.1		G4G5	S2		No	28-Apr-15	Only six closely associated occurrences are known of this plant in CA, and they are disjunct from the others in western NV. Known from the Snake and Columbia valleys in E. WA, OR, and SW ID. Occurrences in CA are grazed and subject to invasion from medusahead and cheatgrass.					K										
<i>Dedeckera eurekaensis</i>	July gold	VASC	Polygonaceae		SR	BLMS	1B.3		G3	S3		No	28-Apr-15					K									K		
<i>Deinandra arida</i>	Red Rock tarplant	VASC	Asteraceae			BLMS	1B.2		G1	S1		No	18-Apr-13	Formerly <i>Hemizonia arida</i> Keck. Known to occur in Red Rock State Park.													S		
<i>Deinandra conjugens</i>	Otay tarplant	VASC	Asteraceae	FT	SE		1B.1		G1	S1		Yes	13-Sep-12	Formerly <i>Hemizonia conjugens</i> Keck. Review of CNDDDB does not show any occurrences on BLM land, though some are close.												S			
<i>Deinandra floribunda</i>	Tecate tarplant	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly <i>Hemizonia floribunda</i> A. Gray.													K		
<i>Deinandra halliana</i>	Hall's tarplant	VASC	Asteraceae			BLMS	1B.1		G2	S2		No	13-Sep-12	Formerly <i>Hemizonia halliana</i> Keck.			S					K							
<i>Deinandra increscens subsp. villosa</i>	Gaviota tarplant	VASC	Asteraceae	FE	SE		1B.1		G4G5T2	S2		No	13-Sep-12	Formerly <i>Hemizonia increscens</i> Keck subsp. <i>villosa</i> Tanowitz. Proposed Critical Habitat, mineral estate.			S												
<i>Deinandra minthornii</i>	Santa Suzana tarplant	VASC	Asteraceae		SR	BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly <i>Hemizonia minthornii</i> Jeps.												S			



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<i>Delphinium purpusii</i>	Kern County Larkspur	VASC	Ranunculaceae			BLMS	1B.3		G2	S2		No	13-Sep-12	Known only from rocky areas in Kern and Tulare counties with 15-20 occurrences known. Very localized with several occurrences on road cuts.			K												
<i>Delphinium recurvatum</i>	recurved larkspur	VASC	Ranunculaceae			BLMS	1B.2		G3	S3		No	13-Sep-12				K					K							
<i>Delphinium umbracolorum</i>	umbrella larkspur	VASC	Ranunculaceae			BLMS	1B.3		G3	S3		No	28-Apr-15				S												
<i>Dendriscoaulon intricatum</i>	northern moon shrub	LICH	Lobariaceae			BLMS			G3G4Q	S1		No	28-Apr-15			S											K		
<i>Dendrocollybia racemosa</i>	no common name	FUNG	Tricholomataceae			BLMS			G4	None		No	16-Nov-10	Formerly <i>Collybia racemosa</i> (Pers.) Quélet.			K										S		
<i>Dermocybe humboldtensis</i>	'little green mushroom'	FUNG	Cortinariaceae			BLMS			G1G2	S1?		No	28-Apr-15			K													
<i>Dieteria asteroides var. lagunensis</i>	Mount Laguna aster	VASC	Asteraceae		SR	BLMS	2B.1		G5T2T3 Q	S1		No	28-Apr-15	Formerly <i>Machaeranthera asteroides</i> (Torr.) Greene var. <i>lagunensis</i> (Keck) Turner.								K							
<i>Dithyrea maritima</i>	beach spectaclepod	VASC	Brassicaceae		ST	BLMS	1B.1		G2	S1		No	28-Apr-15	Removed from the "S" list for the Palm Springs Field Office on 8/6/2013 because no known occurrences are near BLM lands. Still considered "S" for the Bakersfield Field Office based on CNDDDB nonspecific Occurrence 29, the mapped 3/5 mile radius circle of which includes BLM lands at Point Sal.			S												
<i>Dodecahema leptoceras</i>	slender-horned spineflower	VASC	Polygonaceae	FE	SE		1B.1		G1	S1		No		Formerly <i>Centrostegia leptoceras</i> Gray.														K	
<i>Dudleya abramsii subsp. murina</i>	mouse-gray dudleya	VASC	Crassulaceae			BLMS	1B.3		G3T2	S2		No	28-Apr-15				S												
<i>Dudleya multicaulis</i>	many-stemmed dudleya	VASC	Crassulaceae			BLMS	1B.2		G2	S2		No	06-Aug-13	Status changed from "K" to "S" on 8/6/2013. Although nonspecific CNDDDB Occurrence 9 has BLM lands within it (as well as private lands), the observers cite the lands as private.											S				



SCIENTIFIC NAME	COMMON NAME	TYPE OF PLANT	FAMILY	FED STATUS	CA STATUS	BLM STATUS	CA RARE PLANT RANK	NNPS STATUS	GLOBAL RANK	STATE RANK	NV STATUS	RECOVERY PLAN?	DATE UPDATED	COMMENTS	ALTURAS	ARCATA	BAKERSFIELD	BARSTOW	BISHOP	EAGLE LAKE	EL CENTRO	HOLLISTER	MOTHER LODGE	NEEDLES	PALM SPRINGS	REDDING	RIDGECREST	SURPRISE	UKIAH	
<i>Dudleya saxosa subsp. saxosa</i>	Panamint dudleya	VASC	Crassulaceae			BLMS	1B.3		G4T3	S3		No	13-Sep-12	Panamint Mts: on BLM lands in Surprise Canyon--see 2005 Surprise Canyon ADEIS.													K			
<i>Dudleya variegata</i>	variegated dudleya	VASC	Crassulaceae			BLMS	1B.2		G2	S2		No	28-Apr-15												K					
<i>Echinocereus engelmannii var. howei</i>	Howe's hedgehog cactus	VASC	Cactaceae			BLMS	1B.1		G5T1	S1		No	18-Apr-13	<i>E. e. var. howei</i> not recognized in Jepson Manual 1st or 2nd edition or in Flora North America. It is recognized in the USDA Plants database. Original description is in the Cactus and Succulent Journal 46:80 (1974).										K						
<i>Enceliopsis covillei</i>	Panamint daisy	VASC	Asteraceae			BLMS	1B.2		G2?	S2?		No	28-Apr-15	Panamint Mts.													K			
<i>Entoloma nitidum</i>	'indigo entoloma'	FUNG	Entolomataceae			BLMS			G5	S1S3		No	28-Apr-15			K														
<i>Epilobium oreganum</i>	Oregon fireweed	VASC	Onagraceae			BLMS	1B.2		G2	S2		No	28-Apr-15															S		
<i>Epilobium siskiyouense</i>	Siskiyou fireweed	VASC	Onagraceae			BLMS	1B.3		G3	S3		No	28-Apr-15															S		
<i>Eremalche kernensis</i>	Kern mallow	VASC	Malvaceae	FE			1B.1		G3?T2Q	S2		Yes	18-Apr-13				K													
<i>Eriastrum brandegeae</i>	Brandegee's eriastrum	VASC	Polemoniaceae			BLMS	1B.1		G1Q	S1		No	18-Apr-13	Reranked from California Rare Plant Rank 1B.2 to 1B.1 on 8-23-2012.													K		K	
<i>Eriastrum densifolium subsp. sanctorum</i>	Santa Ana River woollystar	VASC	Polemoniaceae	FE	SE		1B.1		G4T1	S1		No	13-Sep-12															K		
<i>Eriastrum harwoodii</i>	Harwood's eriastrum	VASC	Polemoniaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	CNDDDB maps at least 3 occurrences on BLM lands in the Needles Field Office. Several new occurrences added in 2009 and 2010 as a result of solar power plant surveys and CNPS Rare Plant Treasure Hunt.										K	K					
<i>Eriastrum luteum</i>	yellow-flowered eriastrum	VASC	Polemoniaceae			BLMS	1B.2		G2	S2		No	28-Apr-15				K													
<i>Ericameria fasciculata</i>	Eastwood's goldenbush	VASC	Asteraceae			BLMS	1B.1		G2	S2		No	28-Apr-15																	
<i>Ericameria gilmanii</i>	Gilman's goldenbush	VASC	Asteraceae			BLMS	1B.3		G1	S1		No	13-Sep-12	Owens Peak.														S		
<i>Ericameria palmeri var. palmeri</i>	Palmer's goldernbush	VASC	Asteraceae			BLMS	1B.1		G4T2T3	S1		No	15-Nov-10	Moved from CNPS list 2.2 to 1B.1 on 8/12/09. CNDDDB Occurrence 2, anon-specific 1-mile radius circle, includes BLM lands within it.														S		

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<i>Erigeron aequifolius</i>	Hall's daisy	VASC	Asteraceae			BLMS	1B.3		G3	S3		No	28-Apr-15	S. Sierra.													K		
<i>Erigeron blochmaniae</i>	Blochman's leafy daisy	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15			K													
<i>Erigeron calvus</i>	bald daisy	VASC	Asteraceae			BLMS	1B.1		G1Q	S1		No	18-Apr-13	This occurrence is based on a single collection by Olmstead in 1891. It is mapped as a best guess "just north of Swansea," and has a 1-mile radius circle to indicate a nonspecific occurrence. Most of the lands within that circle are BLM lands, so we should at least have the species on our list as suspected to occur. Although the Rarefind report states that there are taxonomic questions (and the Global Naturereserve rank of G1Q also indicates this), the species is included in both Jepson Manual 2 and the Flora of North America.				S											
<i>Erigeron multiceps</i>	Kern River daisy	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15			S													
<i>Erigeron parishii</i>	Parish's daisy	VASC	Asteraceae	FT			1B.1		G2	S2		No	06-Aug-13	A draft Recovery Plan was issued in 1997 but as of 8/6/2013 was not final. Some of the recovery actions in the draft plan have been started and partially implemented. Until 8/6/2013 this was considered "K" in the Palm Springs Field Office, but a review of CNDDDB records shows that although there are many occurrences within the boundaries of the Palm Springs Field Office, none of these are near BLM lands.				K											
<i>Erigeron serpentinus</i>	serpentine daisy	VASC	Asteraceae			BLMS	1B.3		G2	S2		No	23-Oct-12	CNDDDB Occurrence 3 is on BLM land at The Cedars.														K	
<i>Erigeron supplex</i>	supple daisy	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	17-Mar-15	Old records from the Garcia River just east of the Stornetta Unit, according to Jim Weigand (2/3/2015).														S	

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<i>Erigeron uncialis</i> var. <i>uncialis</i>	limestone daisy	VASC	Asteraceae			BLMS	1B.2		G3G4T2	S2		No	31-Mar-15	On private land within the new boundary of the Cerro Gordo/Conglomerate Mesa ACEC													S			
<i>Eriodictyon altissimum</i>	Indian Knob mountainbalm	VASC	Boraginaceae	FE	SE		1B.1		G1	S1		Yes	13-Sep-12			S														
<i>Eriogonum alexanderae</i>	Alexander's buckwheat	VASC	Polygonaceae			BLMS	1B.1		G2G3	S1		No	07-Jul-12	Name changed from <i>Eriogonum ochrocephalum</i> var. <i>alexanderae</i> to <i>Eriogonum alexanderae</i> and rare plant rank changed from Rank 2.2 to 1B.1 on 11/29/2011. Located in Mono County on Bodie Mountain. Likely on BLM lands there.				S												
<i>Eriogonum apricum</i> var. <i>apricum</i>	lone buckwheat	VASC	Polygonaceae	FE	SE		1B.1		G1T1	S1		No	13-Sep-12										K							
<i>Eriogonum bifurcatum</i>	forked buckwheat	VASC	Polygonaceae			BLMS	1B.2		G3	S3		No	18-Apr-13				K													
<i>Eriogonum cedrorum</i>	The Cedars buckwheat	VASC	Polygonaceae			BLMS	1B.3		G1	S1		No	23-Oct-12	Specific CNDDDB Occurrence 1 is mapped on BLM land at The Cedars.															K	
<i>Eriogonum contiguum</i>	Reveal's buckwheat	VASC	Polygonaceae			BLMS	2B.3		G2	S2		No	28-Apr-15	CNDDDB Occurrences 14, 15, and 18 are on BLM lands.													K			
<i>Eriogonum crosbyae</i>	Crosby's buckwheat	VASC	Polygonaceae			BLMS		W	G3	S3		No		S3 in NV. This plant is threatened by gold mining activity on the Nevada portion of the Surprise Field Office. 82% of this plants' total numbers are within the mining claim area. A few populations also occur in Oregon.														K		
<i>Eriogonum eremicola</i>	Wildrose Canyon buckwheat	VASC	Polygonaceae			BLMS	1B.3		G1	S1		No	13-Sep-12					S									K			
<i>Eriogonum hoffmannii</i> var. <i>hoffmannii</i>	Hoffmann's buckwheat	VASC	Polygonaceae			BLMS	1B.3		G3T2	S2		No	28-Apr-15	Panamint Mts.; Found in Surprise Canyon on BLM lands--see 2005 ADEIS.													K			
<i>Eriogonum kelloggii</i>	Red Mountain buckwheat	VASC	Polygonaceae		SE	BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly a Federal candidate for listing. Removed from candidate list, Federal Register 29: 56029, September 18, 2014.		K														
<i>Eriogonum kennedyi</i> var. <i>pinicola</i>	Kern buckwheat	VASC	Polygonaceae			BLMS	1B.1		G4T1	S1		No	18-Apr-13				S										K			

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<i>Eriogonum mensicola</i>	Pinyon Mesa buckwheat	VASC	Polygonaceae			BLMS	1B.3		G2G3	S2		No	31-Mar-15	CNDDDB occurrences 6 and 8 on BLM, perhaps within the boundary of the new Cerro Gordo/Conglomerate Mesa ACEC (the occurrences straddle the boundary). Other occurrences on Death Valley NP, China Lake NWS.																
<i>Eriogonum microthecum</i> var. <i>panamintense</i>	Panamint Mountains buckwheat	VASC	Polygonaceae			BLMS	1B.3		G5T3	S3		No	28-Apr-15	CNDDDB occurrence number 7 is within the boundary of the new Cerro Gordo/Conglomerate Mesa ACEC. Other occurrences on BLM lands in the Ridgecrest and Bishop Field Offices.				K												
<i>Eriogonum microthecum</i> var. <i>schoolcraftii</i>	Schoolcraft's wild buckwheat	VASC	Polygonaceae			BLMS	1B.2	W	G5T3 in CA; G5T2 in NV	S3 (CA); S1 (NV)		No	28-Apr-15	Taxon described by: Reveal, J. L. 2004. New entities in <i>Eriogonum</i> (Polygonaceae: Eriogonoideae). Phytologia 86(3):121-159.					K										S	
<i>Eriogonum nervulosum</i>	Snow Mtn. buckwheat	VASC	Polygonaceae			BLMS	1B.2		G2	S2		No	13-Sep-12																	K
<i>Eriogonum nudum</i> var. <i>murinum</i>	mouse buckwheat	VASC	Polygonaceae			BLMS	1B.2		G5T2	S2		No	28-Apr-15				K													
<i>Eriogonum ovalifolium</i> var. <i>vineum</i>	Cushenberry buckwheat	VASC	Polygonaceae	FE			1B.1		G5T1	S1		No	06-Aug-13	A draft Recovery Plan was issued in 1997 but as of 8/6/2013 was not final. Some of the recovery actions in the draft plan have been started and partially implemented.				K												
<i>Eriogonum prociduum</i>	prostrate buckwheat	VASC	Polygonaceae			BLMS	1B.2	W	G3	S3 (CA); S1 (NV)		No	28-Apr-15	Found in the Ash Valley RNA/ACEC.	K															K
<i>Eriogonum temblorense</i>	Temblor buckwheat	VASC	Polygonaceae			BLMS	1B.2		G2	S2.2		No		Known only from eastern Monterey Co., eastern San Luis Obispo Co., and western Kern Co. Within the Bakersfield Field Office it occurs on shaly/barren soils in the Temblor Range and Elkhorn Plain. This habitat type appears to be very scattered and limited.			K													
<i>Eriogonum thornei</i>	Thorne's buckwheat	VASC	Polygonaceae		SE	BLMS	1B.2		G1	S1		No	13-Sep-12	Formerly <i>E. ericifolium</i> var. <i>thornei</i> , now elevated to species.																

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<i>Eriogonum umbellatum</i> var. <i>ahartii</i>	Ahart's buckwheat	VASC	Polygonaceae			BLMS	1B.2		G5T2	S2		No	03-Oct-11	Currently shown in 5 locations close to BLM lands. Rarefind shows that locations are near West Branch of Feather River, De Sabla, South of Paradise Lake, and near Magalia Reservoir on scattered parcels.											S				
<i>Eriogonum umbellatum</i> var. <i>glaberrimum</i>	green buckwheat	VASC	Polygonaceae			BLMS	1B.3		G5T2?	S2		No	18-Apr-13		S													S	
<i>Eriogonum ursinum</i> var. <i>erubescens</i>	blushing wild buckwheat	VASC	Polygonaceae			BLMS	1B.3		G3G4T2	S2		No	28-Apr-15	CNDDDB maps very close to BLM lands, especially Occurrence 1.											S				
<i>Eriophyllum mohavense</i>	Barstow woolly-sunflower	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	13-Sep-12				K										K		
<i>Erysimum ammophilum</i>	coast wallflower	VASC	Brassicaceae			BLMS	1B.2		G2	S2		No	28-Apr-15									K							
<i>Erysimum concinnum</i>	bluff wallflower	VASC	Brassicaceae			BLMS	1B.2		G3	S3		No	26-Feb-15	Added to list as 1B.2 on 12/3/2012. Originally proposed to be added as 4.2, but final decision 1B.2 based on comments from field botanists. Substantial population on the north end of the King Range acc. Jennifer Wheeler. Biosystematic study of this plant and closely related congeners is currently underway.		K													
<i>Erysimum menziesii</i>	Menzies' wallflower	VASC	Brassicaceae	FE	SE		1B.1		G1	S1		No	28-Apr-15	Formerly <i>Erysimum menziesii</i> (Hook.) Wettst. subsp. <i>eurekaense</i> R. Price, but that combination, along with the two other subspecies that were formerly recognized by CNPS and CDFW, was never validly published. All three subspecies, including subsp. <i>eurekaense</i> , are now submerged into <i>E. menziesii</i> in the Jepson Manual II and by CNPS/CDFW per decision on 12-11-2012. The common name for the invalid combination, <i>E. m.</i> subsp. <i>eurekaense</i> , Humboldt Bay wallflower, has also been dropped in favor of Menzies' wallflower.		K													

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<i>Erythranthe calcicola</i>	limestone monkeyflower	VASC	Phrymaceae			BLMS	1B.3		G2	S2		No	25-Jun-13	This species was newly described in 2012 by Naomi Fraga and added to RPR 1B.3 on on 6/24/2013. There are three occurrences on BLM lands in the Ridgecrest Field Office, according to Naomi.															K		
<i>Erythranthe rhodopetra</i>	Red Rock Canyon monkeyflower	VASC	Phrymaceae			BLMS	1B.1		G1	S1		No	30-Oct-13	This species was newly described in 2012 by Naomi Fraga. The discussion in the CNPS Rare Plant Forum ( <a href="http://cnps.org/forums/showthread.php?t=1792">http://cnps.org/forums/showthread.php?t=1792</a> ) states that there are 2 (and possibly 3) occurrences on BLM lands in CA in the El Paso Mts of the Ridgecrest FO. More recent occurrences are all in Red Rock SP. Added to CDFW/CNPS list as 1B.1 on Jul 8, 2013. As of 10/30/2013 not yet mapped in CNDDDB.																	K
<i>Erythronium citrinum var. roderickii</i>	Scott Mtn. fawn lily	VASC	Liliaceae			BLMS	1B.3		G4T3	S3		No	15-Nov-10																S		
<i>Erythronium tuolumnense</i>	Tuolumne fawn-lily	VASC	Liliaceae			BLMS	1B.2		G2	S2		No	13-Sep-12																		
<i>Eschscholzia minutiflora subsp. twisselmannii</i>	Red Rock poppy	VASC	Papaveraceae			BLMS	1B.2		G5T2	S2		No	28-Apr-15	El Paso Mts.																K	
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy	VASC	Papaveraceae			BLMS	1B.1		G1	S1		No	18-Apr-13				S														
<i>Etriplex joaquinana</i>	San Joaquin spearscale	VASC	Chenopodiaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Found by Craig Thomsen and Ellen Dean in Bear Creek Unit (Payne Ranch). Formerly Atriplex joaquinana A. Nelson.																K	

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<i>Euphorbia jaegeri</i>	Orocopia Mountains spurge	VASC	Euphorbiaceae			BLMS	1B.1		G1	S1		No	30-Jul-13	Newly described in 2012 ( <i>Aliso</i> 30: 1-4). There are only four known occurrences. CNDDDB Occurrence 2 (Marble Mountains) and occurrences 3 and 4 (Bristol Mountains) are all on BLM lands in the Needles Field Office. Occurrence 4 is within the boundaries of a proposed wind farm. Occurrence 1, the type locality, is in the Orocopia Mountains (Palm Springs Field Office), where the nonspecific mapped 2/5 mile radius circle has both BLM and private lands within it. Added to the CNPS/CDFW lists on 1-17-2013.									K	S						
<i>Euphorbia ocellata subsp. rattanii</i>	Stony Creek spurge	VASC	Euphorbiaceae			BLMS	1B.2		G4T1T2	S1S2		No	13-Sep-12	Formerly <i>Chamaesyce ocellata</i> (Dur. & Hilg.) Millsp. subsp. <i>rattanii</i> (S. Watson) Koutnik.												K				
<i>Euphorbia platysperma</i>	flat-seeded spurge	VASC	Euphorbiaceae			BLMS	1B.2		G3	S1		No	28-Apr-15	Formerly <i>Chamaesyce platysperma</i> (Engelm.) Shinn. Until 8/6/2013 was considered "S" in Palm Springs, but a review of the CNDDDB reveals no occurrences close to BLM lands in that Field Office. Still considered "S" in El Centro and added as "S" (on 8/6/2013) to Barstow based on the mapped polygon for CNDDDB nonspecific Occurrence 3, which has BLM lands (as well as private lands) within it. Nonspecific Occurrence 4 in El Centro has BLM lands within the mapped 1-mile radius circle.			S			S										
<i>Fremontodendron decumbens</i>	Pine Hill flannelbush	VASC	Malvaceae	FE	SR		1B.2		G1	S1		Yes	13-Sep-12										K							
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	VASC	Malvaceae	FE	SR		1B.1		G1	S1		No	13-Sep-12								K				K					
<i>Fritillaria falcata</i>	talus fritillary	VASC	Liliaceae			BLMS	1B.2		G2	S2		No	28-Apr-15									K								

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<i>Fritillaria gentneri</i>	Gentner's fritillaria	VASC	Liliaceae	FE			1B.1		G1	S1		Yes	13-Sep-12												K					
<i>Fritillaria ojaiensis</i>	Ojai fritillary	VASC	Liliaceae			BLMS	1B.2		G2	S2		No	13-Sep-12			S														
<i>Fritillaria pluriflora</i>	adobe-lily	VASC	Liliaceae			BLMS	1B.2		G3	S3		No	22-Nov-10	Documented in the Ukiah Field Office within the proposed right-of-way of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010). Also occurs elsewhere in the Ukiah Field Office.										S					K	
<i>Fritillaria striata</i>	striped adobe-lily	VASC	Liliaceae		ST	BLMS	1B.1		G2	S2		No	13-Sep-12			S														
<i>Fritillaria viridea</i>	San Benito fritillary	VASC	Liliaceae			BLMS	1B.2		G2	S2		No	13-Sep-12									K								
<i>Galium angustifolium subsp. onycense</i>	Onyx peak bedstraw	VASC	Rubiaceae			BLMS	1B.3		G5T3	S3		No	28-Apr-15			K														
<i>Galium californicum subsp. primum</i>	Alvin Meadow bedstraw	VASC	Rubiaceae			BLMS	1B.2		G5T1Q	S1		No	13-Sep-12											S						
<i>Galium californicum subsp. sierrae</i>	El Dorado bedstraw	VASC	Rubiaceae	FE	SR		1B.2		G5T1	S1		Yes	13-Sep-12										K							
<i>Galium glabrescens subsp. modocense</i>	Modoc bedstraw	VASC	Rubiaceae			BLMS	1B.2		G4T3	S3		No	18-Apr-13		S													K		
<i>Galium grande</i>	San Gabriel bedstraw	VASC	Rubiaceae			BLMS	1B.2		G2	S2		No	28-Apr-15												S					
<i>Galium hardhamiae</i>	Hardham's bedstraw	VASC	Rubiaceae			BLMS	1B.3		G3	S3		No	28-Apr-15			K														
<i>Galium hilendiae subsp. kingstonense</i>	Kingston bedstraw	VASC	Rubiaceae			BLMS	1B.3		G4T2	S2		No	18-Apr-13				K						K							
<i>Galium serpicum subsp. scotticum</i>	Scott Mtn. bedstraw	VASC	Rubiaceae			BLMS	1B.2		G4G5T2	S2.2		No													K					
<i>Galium serpicum subsp. warnerense</i>	Warner Mtns. bedstraw	VASC	Rubiaceae			BLMS	1B.2		G4G5T2	S2		No	18-Apr-13		S													S		
<i>Gentiana setigera</i>	Mendocino gentian	VASC	Gentianaceae			BLMS	1B.2		G2	S1		No				K														



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<i>Gilia capitata subsp. pacifica</i>	Pacific gilia	VASC	Polemoniaceae			BLMS	1B.2		G5T3T4	S2		No	17-Mar-15	To be suspected on the Stornetta Unit according to Jim Weigand (2/3/2015).															S	
<i>Gilia millefoliata</i>	dark-eyed gilia	VASC	Polemoniaceae			BLMS	1B.2		G2	S2		No	28-Apr-15			K														
<i>Gilia tenuiflora subsp. arenaria</i>	sand gilia	VASC	Polemoniaceae	FE	ST		1B.2		G3G4T2	S2		Yes									K									
<i>Glossopetalon pungens</i>	pungent glossopetalon	VASC	Crossosomataceae			BLMS	1B.2		G2G3	S1		No	18-Apr-13										K							
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	VASC	Plantaginaceae		SE	BLMS	1B.2		G2	S2		No		This is a vernal pool plant. Can be found in man-made reservoirs.	K		K			K		K				K				
<i>Grindelia fraxinipratensis</i>	Ash Meadows gum-plant	VASC	Asteraceae	FT			1B.2		G2	S1	CE	Yes	13-Sep-12				K													
<i>Grindelia hallii</i>	San Diego gumplant	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Although CNDDDB occurrence 13 is nonspecific, the record states that the species was found on BLM lands.							K									
<i>Gymnopilus punctifolius</i>	'blue-green gymnopilus'	FUNG	Cortinariaceae			BLMS			G3G4	S2?		No	16-Nov-10			K														
<i>Harmonia doris-nilesiae</i>	Niles's harmonia	VASC	Asteraceae			BLMS	1B.1		G2	S2		No	28-Apr-15	Formerly <i>Madia doris-nilesiae</i> T.W. Nelson & J.P. Nelson.												S				
<i>Harmonia hallii</i>	Hall's harmonia	VASC	Asteraceae			BLMS	1B.2		G2	S2?		No	13-Sep-12	Formerly <i>Madia hallii</i> Keck. Documented in the Ukiah Field Office within the proposed right-of-way, as well as within the area of potential effect, of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010). Also elsewhere in the Ukiah Field Office.																K
<i>Harmonia stebbinsii</i>	Stebbins's harmonia	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly <i>Madia stebbinsii</i> T.W. Nelson & J.P. Nelson.												K				
<i>Helianthella castanea</i>	Diablo rock-rose	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	13-Sep-12									S								

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<i>Helianthus niveus subsp. tephrodes</i>	Algodones Dunes sunflower	VASC	Asteraceae		SE	BLMS	1B.2		G4T2T3	S2		No	28-Apr-15								K									
<i>Helianthus winteri</i>	Winter's sunflower	VASC	Asteraceae			BLMS	1B.2		G1G2	S1S2		No	20-Jan-15	First described by Stebbins, J.C., C.J. Winchell, and J.V.H. Constable. 2013. <i>Helianthus winteri</i> (Asteraceae), a new perennial species from the southern Sierra Nevada foothills, California. Aliso 31: 19-24. Added to CDFW/CNPS list on 10/15/2014. Occurrence Number 2 (80m accuracy) is within 200m of isolated BLM 40-acre parcel centered at approximately -119.253672 36.592978 Decimal Degrees (NAD 83, UTM Zone 11N)			K													
<i>Hesperivax sparsiflora subsp. brevifolia</i>	short-leaved evax	VASC	Asteraceae			BLMS	1B.2		G4T2T3	S2S3		No	17-Mar-15	On BLM at Mattole Beach (in great numbers acc. Jennifer Wheeler) and at Samoa.		K													K	
<i>Hesperidanthus jaegeri</i>	Jaeger's hesperidanthus	VASC	Brassicaceae			BLMS	1B.2		G2	S2		No	31-Mar-15	Formerly <i>Caulostramina jaegeri</i> . CNDDDB Occurrence number 4 is definitely on BLM lands within the boundary of the new Cerro Gordo/Congolmerate Mesa ACEC. Occurrence number 2 is likely on BLM lands with the ACEC. Occurrence number 6, Keynot Peak near head of Keynot Canyon is on BLM lands but not clear whether in the Bishop or Ridgecrest Field Office (occurrence as mapped straddles the border between the two field offices).				S									K			
<i>Hesperidanthus jaegeri</i>	Jaeger's hesperidanthus	VASC	Brassicaceae			BLMS	1B.2		G2	S2		No	03-Jun-13	Formerly <i>Caulostramina jaegeri</i> (Roll.) Roll.					S								K			

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<i>Hesperocyparis forbesii</i>	Tecate cypress	VASC	Cupressaceae			BLMS	1B.1		G2	S2		No	03-Jun-13	Formerly <i>Cupressus forbesii</i> . The taxon was then moved to <i>Callitropsis forbesii</i> by Little (2006) Syst. Bot. 31(3):461-480. The Jepson Manual second edition uses <i>Hesperocyparis forbesii</i> in accordance with Adams et al. 2009. A new genus, <i>Hesperocyparis</i> , for the cypresses of the western hemisphere (Cupressaceae). Phytologia 91: 160-185.																K	
<i>Hesperocyparis nevadensis</i>	Piute cypress	VASC	Cupressaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly <i>Cupressus nevadensis</i> . The taxon was then moved to <i>Callitropsis nevadensis</i> by Little (2006) Syst. Bot. 31(3):461-480. The Jepson Manual second edition uses <i>Hesperocyparis nevadensis</i> in accordance with Adams et al. 2009. A new genus, <i>Hesperocyparis</i> , for the cypresses of the western hemisphere (Cupressaceae). Phytologia 91: 160-185.			K														
<i>Hesperolinon adenophyllum</i>	glandular western flax	VASC	Linaceae			BLMS	1B.2		G3	S3		No	28-Apr-15																	K	
<i>Hesperolinon breweri</i>	Brewer's dwarf flax	VASC	Linaceae			BLMS	1B.2		G2	S2		No	13-Sep-12																	S	
<i>Hesperolinon didymocarpum</i>	Lake County dwarf flax	VASC	Linaceae		SE	BLMS	1B.2		G1	S1		No	13-Sep-12																	S	
<i>Hesperolinon drymarioides</i>	drymaria-like western flax	VASC	Linaceae			BLMS	1B.2		G2	S2		No	13-Sep-12	Documented in the Ukiah Field Office within the proposed right-of-way, as well as within the area of potential effect, of the AltaGas/Greenwing Energy proposed Walker Ridge wind farm (Volmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010). Also occurs elsewhere in the Ukiah Field Office.																	K

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<i>Hesperolinon sharsmithiae</i>	Sharsmith's western flax	VASC	Linaceae			BLMS	1B.2		G2Q	S2		No	28-Mar-13	CNDDDB Occurrence 53 is currently mapped by CNDDDB as <i>H. tehamense</i> but CNPS/ CDFW now consider that occurrence to be <i>H. sharsmithiae</i> ( <a href="http://cnps.org/forums/showthread.php?t=1723&amp;highlight=Hesperolinon+sharsmithiae">http://cnps.org/forums/showthread.php?t=1723&amp;highlight=Hesperolinon+sharsmithiae</a> ). <i>H. sharsmithiae</i> was added to the CNPS and CDFW lists on 12-14-2012.															K	
<i>Hesperolinon tehamense</i>	Tehama County western flax	VASC	Linaceae			BLMS	1B.3		G2	S2		No	28-Mar-13	Added K for Ukiah on 3-28-2013 (was previously K for Redding only). CNDDDB occurrences 18, 20, and 40 are all on BLM lands in the Ukiah FO. CNDDDB Occurrence 53 is also currently mapped on BLM lands, but this occurrence is now considered by CNPS/CDFW to represent <i>H. sharsmithiae</i> ( <a href="http://cnps.org/forums/showthread.php?t=1723&amp;highlight=Hesperolinon+sharsmithiae">http://cnps.org/forums/showthread.php?t=1723&amp;highlight=Hesperolinon+sharsmithiae</a> ).															K	K
<i>Heterodermia leucomelos</i>	ciliate strap-lichen	LICH	Physciaceae			BLMS			G4	None		No	16-Nov-10			K														
<i>Heterotheca shevockii</i>	Shevock's golden-aster	VASC	Asteraceae			BLMS	1B.3		G2	S2		No	03-Jun-13				S													
<i>Heuchera brevistaminea</i>	Laguna Mountains alumroot	VASC	Saxifragaceae			BLMS	1B.3		G3	S3		No	28-Apr-15	CNDDDB Occurrence 5 is located on BLM lands.											K					
<i>Horkelia bolanderi</i>	Bolander's horkelia	VASC	Rosaceae			BLMS	1B.2		G1	S1		No	03-Jun-13	Very non-specific occurrence, CNDDDB occurrence 9, encompasses BLM lands. Vollmar (Vollmar Consulting, 2010 Sensitive Botanical Resources Survey Report, Walker Ridge Project Site, Lake and Colusa Counties, California, October 2010) reported that suitable habitat is present on BLM lands.																S
<i>Horkelia hendersonii</i>	Henderson's horkelia	VASC	Rosaceae			BLMS	1B.1		G1G2	S1		No	28-Apr-15													S				
<i>Horkelia parryi</i>	Parry's horkelia	VASC	Rosaceae			BLMS	1B.2		G2	S2		No	28-Apr-15																	

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<i>Horkelia tenuiloba</i>	thin-lobed horkelia	VASC	Rosaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Suspected to occur on BLM lands on and near Willis Ridge, acc. Jennifer Wheeler.		S														
<i>Hosackia crassifolia var. otayensis</i>	Otay Mountain lotus	VASC	Fabaceae			BLMS	1B.1		G5T1	S1		No	06-Aug-13	CNDDDB occurrences 1, 2, and 3 are all on BLM lands on Otay Mountain.											K					
<i>Hulsea californica</i>	San Diego sunflower	VASC	Asteraceae			BLMS	1B.3		G2	S2		No	28-Apr-15	CNDDDB occurrences 2 and 24 are located on BLM lands in the El Centro Field Office portion of San Diego County. Occurrences 10, 14, 22, 23, 26 are non-specific CNDDDB occurrences that are located next to BLM lands in the El Centro Field Office part of San Diego County. Nonspecific Occurrence 29 in the Palm Springs Field Office portion of San Diego County has some BLM lands within the mapped 1-mile radius circle.							K							S		
<i>Hydropus marginellus</i>	'little brown mushroom'	FUNG	Tricholomataceae			BLMS			G3	S1S2		No	16-Nov-10			K														
<i>Iris hartwegii subsp. columbiana</i>	Tuolumne iris	VASC	Iridaceae			BLMS	1B.2		G4T1	S2		No	28-Apr-15																	
<i>Iris munzii</i>	Munz's iris	VASC	Iridaceae			BLMS	1B.3		G2	S2		No	28-Apr-15				S													
<i>Ivesia aperta var. aperta</i>	Sierra Valley ivesia	VASC	Rosaceae			BLMS	1B.2	T	G2T2	S2 (CA); S1 (NV)		No	28-Apr-15							K										
<i>Ivesia jaegeri</i>	Jaeger's ivesia	VASC	Rosaceae			BLMS	1B.3		G2G3	S1		No	03-Jun-13															K		
<i>Ivesia kingii var. kingii</i>	alkali ivesia	VASC	Rosaceae			BLMS	2B.2		G4T3Q	S2		No	19-Aug-09	Moved from CNPS 1B.2 to 2.2 on 11/23/08 because more common in NV.					K											
<i>Ivesia longibracteata</i>	Castle Crag ivesia	VASC	Rosaceae			BLMS	1B.3		G1	S1		No	03-Jun-13															S		
<i>Ivesia paniculata</i>	Ash Creek ivesia	VASC	Rosaceae			BLMS	1B.2		G2	S2		No	03-Jun-13	Found in the Ash Valley RNA/ACEC.	K															
<i>Ivesia patellifera</i>	Kingston Mtns. ivesia	VASC	Rosaceae			BLMS	1B.3		G1	S2		No	03-Jun-13				K											K		
<i>Ivesia pickeringii</i>	Pickering's ivesia	VASC	Rosaceae			BLMS	1B.2		G2	S2.2		No																S		

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<i>Ivesia rhypara var. rhypara</i>	grimy ivesia	VASC	Rosaceae			BLMS		W	G2T2	S2 (NV)		No	28-Apr-15	This plant has 5 small occurrences in the Surprise Field Office within one mile of each other in NV. Listed as Endangered by the State of Oregon.															K		
<i>Ivesia sericoleuca</i>	Plumas ivesia	VASC	Rosaceae			BLMS	1B.2		G2	S2		No	28-Apr-15							S											
<i>Ivesia webberi</i>	Webber's ivesia	VASC	Rosaceae	FT			1B.1	T	G1	S2 (CA); S1 (NV)	CE	No	28-Apr-15	Listed as Threatened by the U.S. Fish and Wildlife Service on June 3, 2014 (79 Federal Register 106: 31878-31883). Critical Habitat designated on June 3, 2014 (79 Federal Register 106: 32126-32155). On BLM lands in Sierra Valley. Specific occurrence 1 as mapped by CNDDB does not include BLM lands within it, but 50 plants were found on BLM lands in the vicinity in 1992.						K											
<i>Juncus leiospermus var. leiospermus</i>	Red Bluff dwarf rush	VASC	Juncaceae			BLMS	1B.1		G2T2	S2		No	28-Apr-15																K		
<i>Kaernefeltia californica</i>	seaside thornbush	LICH	Parmeliaceae			BLMS			G3	None		No	16-Nov-10			K															
<i>Lagophylla diabolensis</i>	Diablo Range hare-leaf	VASC	Asteraceae			BLMS	1B.2		G2G3	S2S3		No	20-Jan-15	Recently described by Baldwin, B.G. 2013. Lagophylla diabolensis (Compositae-Madiinae), a new hare-leaf from the southern Diablo Range, California. Madroño 60(3): 249-254. Final decision to add to list 1B.2 made on 1/17/2014. At least 5 occurrences on BLM lands in Hollister FO.																	
<i>Lasthenia californica subsp. macrantha</i>	perennial goldfields	VASC	Asteraceae			BLMS	1B.2		G3T2	S2		No	17-Mar-15	Known from the Stornetta Unit, per the following collections: JEPS21849, 1958, and CAS514082, 1967.																K	
<i>Lasthenia conjugens</i>	Contra Costa goldfields	VASC	Asteraceae	FE			1B.1		G1	S1		Yes	13-Sep-12	Fort Ord.																	
<i>Lasthenia glabrata subsp. coulteri</i>	Coulter's goldfields	VASC	Asteraceae			BLMS	1B.1		G4T2	S2		No	28-Apr-15				K														
<i>Layia carnosa</i>	beach layia	VASC	Asteraceae	FE	SE		1B.1		G2	S2		Yes	13-Sep-12			K															

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<i>Layia discoidea</i>	rayless tidytips	VASC	Asteraceae			BLMS	1B.1		G1	S1		No	28-Apr-15									K							
<i>Layia heterotricha</i>	pale-yellow layia	VASC	Asteraceae			BLMS	1B.1		G2	S2		No	13-Sep-12			K						K							
<i>Layia jonesii</i>	Jones' layia	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15			S													
<i>Layia leucopappa</i>	Comanche Point layia	VASC	Asteraceae			BLMS	1B.1		G1	S1		No	03-Jun-13			S													
<i>Layia munzii</i>	Munz's tidy-tips	VASC	Asteraceae			BLMS	1B.2		G1	S1		No	03-Jun-13			K													
<i>Layia septentrionalis</i>	Colusa layia	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15												S			S	
<i>Legenere limosa</i>	legenere	VASC	Campanulaceae			BLMS	1B.1		G2	S2		No	28-Apr-15												K				
<i>Lepechinia ganderi</i>	Gander's pitcher-sage	VASC	Lamiaceae			BLMS	1B.3		G3?	S3		No	28-Apr-15											K					
<i>Lepidium flavum var. felipense</i>	Borrego Valley pepper-grass	VASC	Brassicaceae			BLMS	1B.2		G5T1	S1		No	06-Aug-13	This var. is not recognized by the Jepson Manual 2nd edition or by Flora North America. Changed from "S" in Palm Springs to "S" in El Centro on 8/6/2013 because CNDDDB Occurrence 1, which has some BLM lands within the nonspecific 1-mile radius circle, is in the El Centro Field Office, not the Palm Springs Field Office. No occurrences are currently reported within the boundaries of the Palm Springs Field Office.						S									
<i>Lepidium jaredii subsp. album</i>	Panoche pepper-grass	VASC	Brassicaceae			BLMS	1B.2		G2T2	S2		No	03-Jun-13	This subsp. not recognized by Jepson Manual 1st or 2nd editions or by Flora North America.															
<i>Lepidium jaredii subsp. jaredii</i>	Jared's pepper-grass	VASC	Brassicaceae			BLMS	1B.2		G2T1T2	S1S2		No	28-Apr-15	Subspecies of <i>L. jaredii</i> are not recognized in Jepson Manual 1st or 2nd editions or by Flora North America.			K												
<i>Leptosiphon nuttallii subsp. howellii</i>	Mt. Tedoc linanthus	VASC	Polemoniaceae			BLMS	1B.3		G5T2	S2		No	13-Sep-12	Formerly <i>Linanthus nuttallii</i> Mlkn. Subsp. <i>howellii</i> Nelson & Patterson.											S				
<i>Leptosyne hamiltonii</i>	Mt. Hamilton coreopsis	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly <i>Coreopsis hamiltonii</i> (Elmer) H.K. Sharsm.								K							
<i>Leucogaster citrinus</i>	'yellow false truffle'	FUNG	Leucogastraceae			BLMS			G3G4	S1S2		No	28-Apr-15			K													
<i>Lewisia cantelovii</i>	Cantelow's lewisia	VASC	Portulacaceae			BLMS	1B.2		G3	S3		No	13-Sep-12										K		S				

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<i>Lewisia cotyledon var. heckneri</i>	Heckner's lewisia	VASC	Portulacaceae			BLMS	1B.2		G4T3	S3?		No	28-Apr-15												K							
<i>Lilium maritimum</i>	coast lily	VASC	Liliaceae			BLMS	1B.1		G2	S2		No	17-Mar-15	Known from the Stornetta Unit, per the following collection: CAS51392, 1967. Also seen by Jim Weigand in 2014 on Stornetta lands.																K		
<i>Lilium occidentale</i>	western lily	VASC	Liliaceae	FE	SE		1B.1		G1	S1		Yes	13-Sep-12		S																	
<i>Limnanthes alba subsp. parishii</i>	Cuyamaca meadowfoam	VASC	Limnanthaceae		SE	BLMS	1B.2		G3T2T3	S2S3		No	13-Sep-12	Formerly <i>L. gracilis</i> J.T. Howell subsp. <i>parishii</i> (Jeps.) C. Mason										S								
<i>Limnanthes bakeri</i>	Baker's meadowfoam	VASC	Limnanthaceae		SR	BLMS	1B.1		G1	S1		No	03-Jun-13		S																	
<i>Limnanthes floccosa subsp. bellingeriana</i>	Bellinger's meadowfoam	VASC	Limnanthaceae			BLMS	1B.2		G4T3	S1		No	03-Jun-13		S											S						
<i>Limnanthes floccosa subsp. californica</i>	Butte County meadowfoam	VASC	Limnanthaceae	FE	SE		1B.1		G4T1	S1		Yes	13-Sep-12												S							
<i>Linanthus bernardinus</i>	Pioneertown linanthus	VASC	Polemoniaceae			BLMS	1B.2		G2	G2		No	30-Oct-13	This species was newly described in 2012 by Naomi Fraga and D. Bell (Fraga, N. S. and D. S. Bell 2012. A new species of <i>Linanthus</i> (Polemoniaceae) from San Bernardino County, California. <i>Aliso</i> 30:97-102. The discussion in the CNPS Rare Plant Forum ( <a href="http://cnps.org/forums/showthread.php?t=1813">http://cnps.org/forums/showthread.php?t=1813</a> ) states that there is potential habitat on BLM lands in the eastern Sawtooth Range. Added by CDFW and CNPS as 1B.2 on Sep 13, 2013. Several occurrences are mapped near BLM lands in the Barstow Field Office.				S														
<i>Linanthus maculatus</i>	Little San Bernardino Mtns. linanthus	VASC	Polemoniaceae			BLMS	1B.2		G2	S2		No	13-Sep-12	Formerly <i>Gilia maculata</i> Parrish.			K								K							
<i>Linanthus orcuttii</i>	Orcutt's linanthus	VASC	Polemoniaceae			BLMS	1B.3		G4	S2		No	13-Sep-12												S							
<i>Lobaria oregana</i>	Oregon lettuce lung	LICH	Lobariaceae			BLMS			None	None		No	16-Nov-10		K																	



SCIENTIFIC NAME	COMMON NAME	TYPE OF PLANT	FAMILY	FED STATUS	CA STATUS	BLM STATUS	CA RARE PLANT RANK	NNPS STATUS	GLOBAL RANK	STATE RANK	NV STATUS	RECOVERY PLAN?	DATE UPDATED	COMMENTS	ALTURAS	ARCATA	BAKERSFIELD	BARSTOW	BISHOP	EAGLE LAKE	EL CENTRO	HOLLISTER	MOTHER LODGE	NEEDLES	PALM SPRINGS	REDDING	RIDGECREST	SURPRISE	UKIAH	
<i>Loeflingia squarrosa var. artemisiarum</i>	Sagebrush loeflingia	VASC	Caryophyllaceae			BLMS	2B.2		G5T2T3	S2		No	28-Apr-15	Known to CA from only Lassen County (6 occ), Inyo County (5 occ), and two occurrences from Kern and Los Angeles counties. Three occurrences are on BLM lands within the Eagle Lake Field Office, 3 on private, and disjunct. Threatened by livestock trampling.					K	K									S	
<i>Lomatium congdonii</i>	Congdon's lomatium	VASC	Apiaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	On BLM lands in the Red Hills, Tuolumne County.									K							
<i>Lomatium roseanum</i>	adobe lomatium	VASC	Apiaceae			BLMS	1B.2	W	G2G3	S2 (CA); S2 (NV)		No	03-Jun-13	Mike Dolan found ca. 500 plants on Likely Tablelands, in low sage infested with medusahead. Lat: 41.271339 degrees N, Long: -120.493347 degrees W; above and to south of Romero Creek, 4,640', clay loam soil.	K														S	
<i>Lomatium shevockii</i>	Owens Peak lomatium	VASC	Apiaceae			BLMS	1B.3		G2	S2		No	03-Jun-13				K												K	
<i>Lupinus citrinus var. citrinus</i>	orange lupine	VASC	Fabaceae			BLMS	1B.2		G2T2	S2		No	28-Apr-15				S													
<i>Lupinus citrinus var. deflexus</i>	Mariposa lupine	VASC	Fabaceae		ST	BLMS	1B.2		G2T1	S1		No	13-Sep-12	Previously shown as S in the Hollister Field Office, a holdover from the time that Hollister managed BLM lands in Mariposa County. Removed as S from Hollister and put as S in the Mother Lode Field Office. There are occurrences within 550 m from isolated BLM lands in T6S,R 19E, S6, MDM.										S						
<i>Lupinus duranii</i>	Mono Lake lupine	VASC	Fabaceae			BLMS	1B.2		G2	S2		No	28-Apr-15						K											
<i>Lupinus excubitus var. medius</i>	Mountain Springs bush lupine	VASC	Fabaceae			BLMS	1B.3		G4T2T3	S2		No																		
<i>Lupinus ludovicianus</i>	San Luis Obispo County lupine	VASC	Fabaceae			BLMS	1B.2		G1	S1		No	28-Apr-15			S														

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<i>Lupinus magnificus var. hesperius</i>	McGee Meadows lupine	VASC	Fabaceae			BLMS	1B.3		G3T2Q	S2		No	28-Apr-15	Jepson Manual 2nd edition, equivocal about whether to recognize this variety, states: "If recognized taxonomically, straight-keeled pls from SNE assignable to <i>Lupinus magnificus var. hesperius</i> (A. Heller) C.P. Sm., McGee Meadows lupine." After review, CNPS and CNDDB kept as 1B.3 by decision dated Feb. 8, 2012. Occurs on Mt. Tom.					K											
<i>Lupinus magnificus var. magnificus</i>	Panamint Mtns. lupine	VASC	Fabaceae			BLMS	1B.2		G3T2Q	S2		No	03-Jun-13					S									K			
<i>Lupinus sericatus</i>	Cobb Mountain lupine	VASC	Fabaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Walker Ridge/Bear Creek, Sulphur Creek sub-watershed (Source: Jim Weigand).															K	
<i>Lupinus spectabilis</i>	shaggyhair lupine	VASC	Fabaceae			BLMS	1B.2		G2	S2		No	28-Apr-15										K							
<i>Lupinus uncialis</i>	lilliput lupine	VASC	Fabaceae			BLMS	2B.2		G4	S2		No	28-Apr-15	Five occurrences known in Alturas Field Office. Twenty total occurrences in CA, most on private lands, and some converted to homesites. Disjunct in CA. CA occurrences important for maintaining genetic viability of the species. Threats include grazing.	K															
<i>Madia radiata</i>	showy golden madia	VASC	Asteraceae			BLMS	1B.1		G2	S2		No				S						K								
<i>Malacothamnus aboriginum</i>	Indian Valley bush mallow	VASC	Malvaceae			BLMS	1B.2		G2	S2		No	13-Sep-12									K								
<i>Malacothamnus hallii</i>	Hall's bush-mallow	VASC	Malvaceae			BLMS	1B.2		G2Q	S2		No	18-Sep-12	CNDDB Occurrence 38, population found on BLM lands on 6/2011.														K		
<i>Malacothamnus palmeri var. involucratus</i>	Carmel Valley bush-mallow	VASC	Malvaceae			BLMS	1B.2		G3T3Q	S3		No	28-Apr-15									K								
<i>Malacothamnus palmeri var. lucianus</i>	Arroyo Seco bush-mallow	VASC	Malvaceae			BLMS	1B.2		G3T1Q	S1		No	28-Apr-15									K								
<i>Malacothrix saxatilis var. arachnoidea</i>	Carmel Valley malacothrix	VASC	Asteraceae			BLMS	1B.2		G5T2	S2		No	28-Apr-15									S								

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<i>Menodora spinescens var. mohavensis</i>	Mojave menodora	VASC	Oleaceae			BLMS	1B.2		G4T2T3	S2S3		No	18-Sep-12	CNDDDB mapped occurrences on BLM lands. One, Occurrence 10, on BLM lands slated for renewable energy.				K											
<i>Mentzelia inyoensis</i>	Inyo blazing star	VASC	Loasaceae			BLMS	1B.3	W	G3	S3		No	28-Apr-15	According to Anne Halford we have occurrences in Fish Slough and Travertine Hot Springs, and there's a very large population on the Inyo National Forest near Black Point (Mono Lake).				K											
<i>Mentzelia polita</i>	polished blazing star	VASC	Loasaceae			BLMS	1B.2		G2	S2		No	03-Jun-13	CNDDDB maps one nonspecific occurrence on BLM land just north of the Eastern Mojave National Preserve on the Clark Mountain quad. CNPS Rare Plant Treasure Hunt found a new occurrence (CNDDDB Occurrence No. 3) on the Ivanpah Lake quad.									K						
<i>Mentzelia tridentata</i>	creamy blazing star	VASC	Loasaceae			BLMS	1B.3		G3	S3		No	28-Apr-15	E. of Cuddeback Lake.												S			
<i>Microseris paludosa</i>	marsh microseris	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	17-Mar-15	Known from the Stornetta Unit, per the following collection: CAS514442, 1968.														K	
<i>Mimulus evanescens</i>	ephemeral monkeyflower	VASC	Phrymaceae			BLMS	1B.2		G3	S2		No	28-Apr-15		K				S							S			
<i>Mimulus filicaulis</i>	slender-stemmed monkeyflower	VASC	Phrymaceae			BLMS	1B.2		G2	S2		No	28-Apr-15									K							
<i>Mimulus gracilipes</i>	slender-stalked monkerflower	VASC	Phrymaceae			BLMS	1B.2		G2G3	S2S3		No	16-Nov-10			S													
<i>Mimulus mohavensis</i>	Mojave monkeyflower	VASC	Phrymaceae			BLMS	1B.2		G2	S2		No	13-Sep-12				K												
<i>Mimulus norrisii</i>	Kaweah monkeyflower	VASC	Phrymaceae			BLMS	1B.3		G2	S2		No	28-Apr-15			K													
<i>Mimulus pictus</i>	Calico monkeyflower	VASC	Phrymaceae			BLMS	1B.2		G2	S2		No	28-Apr-15			K													
<i>Mimulus pulchellus</i>	pansy monkeyflower	VASC	Phrymaceae			BLMS	1B.2		G2G3	S2S3		No	13-Sep-12									K							
<i>Mimulus shevockii</i>	Kelso Creek monkeyflower	VASC	Phrymaceae			BLMS	1B.2		G2	S2		No	13-Sep-12			K										K			
<i>Minuartia howellii</i>	Howell's sandwort	VASC	Caryophyllaceae			BLMS	1B.3		G4	S2		No	13-Sep-12												S				
<i>Minuartia stolonifera</i>	Scott Mtn. sandwort	VASC	Caryophyllaceae			BLMS	1B.3		G2	S2		No	03-Jun-13												S				

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<i>Monardella beneolens</i>	sweet-smelling monardella	VASC	Lamiaceae			BLMS	1B.3		G1	S1		No	03-Jun-13	S. Sierra Nevada.													K				
<i>Monardella boydii</i>	Boyd's monardella	VASC	Lamiaceae			BLMS	1B.2		G2Q	S2		No	13-Sep-12	Specific CNDDDB occurrences on BLM lands in Rodman Mtn Wilderness and Ord Mtn.			K														
<i>Monardella eremicola</i>	Clark Mountain monardella	VASC	Lamiaceae			BLMS	1B.3		G2G3Q	S2S3		No	18-Sep-12	This species was added as California Rare Plant Rank 1B.3 on 12-16-2011. The CNDDDB maps three occurrences on BLM lands in the Kingston Mountains, all of which list BLM as the landowner.										K							
<i>Monardella hypoleuca subsp. lanata</i>	felt-leaved monardella	VASC	Lamiaceae			BLMS	1B.2		G4T3	S3		No	28-Apr-15	CNDDDB Occurrence 2 is on BLM lands on Otoy Mountain.											K						
<i>Monardella linoides subsp. oblonga</i>	Tehachapi monardella	VASC	Lamiaceae			BLMS	1B.3		G5T2	S2		No	28-Apr-15	CNDDDB maps specific occurrences on BLM in the Tehachapi Mountains.												K					
<i>Monardella nana subsp. leptosiphon</i>	San Felipe monardella	VASC	Lamiaceae			BLMS	1B.2		G4G5T2 Q	S2		No	03-Jun-13	Kevin Doran of the Palm Springs Field Office received a comment from the BLM Washington Office inquiring why the draft South Coast RMP did not list this as a SS plant. Review of RareFind information on 1-13-2011 shows that the plant is not very close to public lands in Palm Springs (it mostly occurs on higher elevation Forest Service lands), but that Occurrence 12 is close to public lands in El Centro (Banner Canyon area). CNPS and CNDDDB originally considered dropping the species from its lists because The Jepson Manual, Second Edition, does not recognize any of the subspecies of <i>M. nana</i> . However, following a review on the CNPS Forum, the decision was made on 9-4-2012 to retain the taxon as a California Rare Plant Rank 1B.2 plant.										S							
<i>Monardella robisonii</i>	Robison monardella	VASC	Lamiaceae			BLMS	1B.3		G3	S3		No	13-Sep-12				K							K	S						

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<i>Monardella sinuata subsp. nigrescens</i>	northern curly-leaved monardella	VASC	Lamiaceae			BLMS	1B.2		G3T2	S2		No	26-Jan-15	Described by Elvin, M.A. and A.C. Sanders. 2009. Nomenclatural changes for Monardella (Lamiaceae) in California. Novon 19(3): 315-345. Added to CDFW/CNPS list as 1B.2 on 12-31-2013. At Fort Ord. Mapped mostly on Army lands but certainly to be expected on BLM (and the Army lands may be transferred to BLM in the future).								S							



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<i>Monardella undulata</i> <i>subsp. undulata</i>	San Luis Obispo monardella	VASC	Lamiaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly <i>M. frutescens</i> (Hoov.) Jokerst. Occurs on BLM lands in the Point Sal ACEC (Occurrence 31 in the CNDDDB). See Elvin, M. A. and A. C. Sanders. 2009. Nomenclatural changes for <i>Monardella</i> (Lamiaceae) in California. Novon 19:315-343.			K													
<i>Monardella venosa</i>	veiny monardella	VASC	Lamiaceae			BLMS	1B.1		G1	S1		No	03-Jun-13	Formerly <i>M. douglasii</i> Benth. var. <i>venosa</i> (Torr.) Jeps.											S					
<i>Monolopia congdonii</i>	San Joaquin woolly threads	VASC	Asteraceae	FE			1B.2		G2	S3		Yes	28-Apr-15	Formerly <i>Lembertia congdonii</i> (A. Gray) Greene.			K													
<i>Mycena quinaultensis</i>	'little brown mushroom'	FUNG	Tricholomataceae			BLMS			G2	S3		No	28-Apr-15			K														
<i>Navarretia leucocephala</i> <i>subsp. bakeri</i>	Baker's navarretia	VASC	Polemoniaceae			BLMS	1B.1		G4T2	S2		No	13-Sep-12												S					
<i>Navarretia nigelliformis</i> <i>subsp. radians</i>	shining navarretia	VASC	Polemoniaceae			BLMS	1B.2		G4T2	S2		No	13-Sep-12	Mason collection along Clear Creek Rd. Collection by Michael Denslow, Vern Yadon, and Julie Anne Delgado from a north fork of Cantua Creek; coordinates at Consortium of CA Herbaria are on BLM lands.																
<i>Navarretia setiloba</i>	Piute Mountains navarretia	VASC	Polemoniaceae			BLMS	1B.1		G2	S2		No	03-Jun-13				K													
<i>Nemacladus twisselmannii</i>	Twisselmann's nemacladus	VASC	Campanulaceae		SR	BLMS	1B.2		G1	S1		No	03-Jun-13				S													
<i>Neviusia cliftonii</i>	Shasta snow-wreath	VASC	Rosaceae			BLMS	1B.2		G2	S2		No	28-Apr-15												S					
<i>Nitrophila mohavensis</i>	Amargosa niterwort	VASC	Amaranthaceae	FE	SE		1B.1		G1	S1	CE	Yes	13-Sep-12	Formerly included in the family Chenopodiaceae but now considered by the Jepson Manual, 2nd edition, to be a member of the family Amaranthaceae.				K												
<i>Nolina interrata</i>	Dehesa nolina, bear grass	VASC	Ruscaceae		SE	BLMS	1B.1		G2	S2		No	13-Sep-12											S						
<i>Oenothera wolfii</i>	Wolf's evening-primrose	VASC	Onagraceae			BLMS	1B.1		G1	S1		No	03-Jun-13			S														

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<i>Opuntia basilaris var. brachyclada</i>	short-joint beavertail	VASC	Cactaceae			BLMS	1B.2		G5T3	S3		No	06-Aug-13	Until March 8, 2004, this var. had been considered K in both Needles and Barstow. But the Jepson Manual does not consider this a desert species, and a report by Pamela MacKay calls into question whether it ever occurred in the eastern Mojave. The draft BLM West Mojave Plan states that it only occurs on private lands in the WEMO planning area. It was therefore been changed to "S" in both Needles and Barstow. The CNPS Rare Plant Treasure Hunt documented an occurrence about 1 mile north of Cajon Pass on BLM land in 2010. The taxon has therefore been moved back to "K" for Barstow. On 8/6/2013 the taxon was added as "S" to the list for Palm Springs based on the fact that CNDDDB nonspecific Occurrence 107 has some BLM lands within the mapped 4/5 mile radius circle.			K								S	S					
<i>Opuntia basilaris var. treleasei</i>	Bakersfield cactus	VASC	Cactaceae	FE	SE		1B.1		G5T1	S1		No	27-Jun-13	The Fish and Wildlife Service uses the name <i>O. treleasei</i> J.M. Coult., but both Jepson Manual 1st and 2nd editions use the nomenclature shown here. Occurs on split estate (private surface, BLM subsurface) in the Bakersfield Field Office. CNDDDB occurrences 51 and 54 are very close to BLM lands in the Ridgecrest Field Office.			S											S			
<i>Orcuttia californica</i>	California orcutt grass	VASC	Poaceae	FE	SE		1B.1		G1	S1		Yes	13-Sep-12																	S	
<i>Orcuttia inaequalis</i>	San Joaquin Valley orcutt grass	VASC	Poaceae	FT	SE		1B.1		G1	S1		Yes	11-Mar-13	This was formerly designated as K from the Hollister Field Office, but this was a holdover from the time that Hollister managed a part of what is now managed by the Bakersfield FO.			K														



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<i>Orcuttia pilosa</i>	hairy orcutt grass	VASC	Poaceae	FE	SE		1B.1		G1	S1		Yes	13-Sep-12												S				
<i>Orcuttia tenuis</i>	slender orcutt grass	VASC	Poaceae	FT	SE		1B.1		G2	S2		Yes	13-Sep-12	This is a vernal pool plant. Only one known population of this plant occurs in the Alturas Field Office.	K										K				
<i>Oreostemma elatum</i>	tall alpine aster	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15						S										
<i>Orthocarpus pachystachyus</i>	Shasta orthocarpus	VASC	Orobanchaceae			BLMS	1B.1		G1	S1		No	16-Nov-10	Previously thought to be extinct.											S				
<i>Orthodontium gracile</i>	slender thread moss	BRYO	Bryaceae			BLMS			G5	S2S3		No	28-Apr-15		S														
<i>Packera eurycephala var. lewisrosei</i>	cut-leaved ragwort	VASC	Asteraceae			BLMS	1B.2		G4T2	S2		No	28-Apr-15	Formerly <i>Senecio eurycephalus</i> Torrey & A. Gray var. <i>lewisrosei</i> (J.T. Howell) T.M. Barkley.											K				
<i>Packera ganderi</i>	Gander's butterweed	VASC	Asteraceae		SR	BLMS	1B.2		G2	S2		No	28-Apr-15	Formerly <i>Senecio ganderi</i> T.M. Barkley & R.M. Beauch. Known on Potrero Mt. (Potrero Peak in spring 2007).											K				
<i>Packera layneae</i>	Layne's butterweed	VASC	Asteraceae	FT	SR		1B.2		G2	S2		No	13-Sep-12	Formerly <i>Senecio layneae</i> Greene.									K		S				
<i>Palafoxia arida var. gigantea</i>	giant Spanish needle	VASC	Asteraceae			BLMS	1B.3		G5T3	S2		No	13-Sep-12							K									
<i>Panicum acuminatum var. thermale</i>	Geyser's panicum	VASC	Poaceae		SE	BLMS	1B.2		G5T2Q	S2		No	28-Mar-13	Formerly <i>Dichanthelium lanuginosum</i> (Ell.) Gould var. <i>thermale</i> (Boland.) Spellenberg. Rare Plant Rank changed from 1B.1 to 1B.2 by CNPS/CDFW on 9-12-2012.															S
<i>Pannaria rubiginosa</i>	petaled mouse	LICH	Pannariaceae			BLMS			G3G5	S1		No	28-Apr-15		K														
<i>Paronychia ahartii</i>	Ahart's paronychia	VASC	Carophyllaceae			BLMS	1B.1		G2	S2		No	13-Sep-12												K				

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<i>Pedicularis centranthera</i>	dwarf lousewort	VASC	Orobanchaceae			BLMS	2B.3		G4	S2		No	28-Apr-15	Only five known occurrences form CA, all from Secret Valley in Lassen Co, on BLM lands managed by the Eagle Lake Field Office. These occurrences are rather disjunct from Harney and Lake counties in OR and primarily the eastern half of NV.						K										
<i>Pediomelum castoreum</i>	Beaver Dam breadroot	VASC	Fabaceae			BLMS	1B.2		G3	S2		No	13-Sep-12	Reranked from California Rare Plant Rank 4.3 to 1B.2 on 6-29-2011. CNDDDB Occurrence 22 occurs on BLM lands in the Needles Field Office near Kingston Wash. Several other occurrences are either on or near BLM lands in the Barstow Field Office.				K												
<i>Penstemon albomarginatus</i>	white-margined beardtongue	VASC	Plantaginaceae			BLMS	1B.1		G2	S1		No	16-Nov-10					K												
<i>Penstemon bicolor subsp. roseus</i>	rosy two-toned beardtongue	VASC	Plantaginaceae			BLMS	1B.1		G3T3Q	S1		No	13-Sep-12	On BLM lands near Castle Mt. Mine and Hart Mt. Moved from CNPS List 2.2 to List 1B.1 on 12/8/09.																
<i>Penstemon filiformis</i>	thread-leaved beardtongue	VASC	Plantaginaceae			BLMS	1B.3		G3	S3		No	16-Nov-10															S		
<i>Penstemon fruticiformis var. amargosae</i>	Death Valley beardtongue	VASC	Plantaginaceae			BLMS	1B.3		G4T3	S2		No	28-Apr-15					K												
<i>Penstemon janishiae</i>	Janish's beardtongue	VASC	Plantaginaceae			BLMS	2B.2		G4	S1		No	28-Apr-15	Status of populations unknown; some have been extirpated. Threats are logging and home site development. Rare in CA, OR, and ID. CNDDDB Occurrence 8 is mapped specifically on BLM lands. Occurrence 9 is nonspecific but entire mapped polygon on BLM. Changed from S to K on 8-19-09.	K															
<i>Penstemon personatus</i>	closed-throated beardtongue	VASC	Plantaginaceae			BLMS	1B.2		G2	S2		No	28-Apr-15																S	
<i>Penstemon stephensii</i>	Stephens' beardtongue	VASC	Plantaginaceae			BLMS	1B.3		G2	S2		No	13-Sep-12					K												
<i>Penstemon sudans</i>	Susanville beardtongue	VASC	Plantaginaceae			BLMS	1B.3		G3	S3		No	16-Nov-10							K										

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<i>Pentachaeta exilis subsp. aeolica</i>	slender pentachaeta	VASC	Asteraceae			BLMS	1B.2		G5T1	S1		No	13-Sep-12									K							
<i>Perityle inyoensis</i>	Inyo rock daisy	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Occurrences 1 and 8 are entirely within the boundary of the new Cerro Gordo/Conglomerate Mesa ACEC. Occurrence 5 is partially within the ACEC, with the remainder on BLM land outside it.				S									K		
<i>Perityle villosa</i>	Hanaupah rock daisy	VASC	Asteraceae			BLMS	1B.3		G2	S2		No	03-Jun-13	Inyo Mts.													K		
<i>Petalonyx thurberi subsp. gilmanii</i>	Death Valley sandpaper-plant	VASC	Loasaceae			BLMS	1B.3		G5T2	S2		No					K										K		
<i>Phacelia cookei</i>	Cooke's phacelia	VASC	Boraginaceae			BLMS	1B.1		G1	S1		No	16-Nov-10														S		
<i>Phacelia greenei</i>	Scott Valley phacelia	VASC	Boraginaceae			BLMS	1B.2		G2	S2		No	16-Nov-10														K		
<i>Phacelia inundata</i>	playa phacelia	VASC	Boraginaceae			BLMS	1B.3	W	G2	S2 (CA); S2? (NV)		No	28-Apr-15		S				K									S	
<i>Phacelia inyoensis</i>	Inyo phacelia	VASC	Boraginaceae			BLMS	1B.2		G2	S2		No	13-Sep-12	Fish Slough and Alabama Hills.				K											
<i>Phacelia leonis</i>	Siskiyou phacelia	VASC	Boraginaceae			BLMS	1B.3		G3	S3		No	28-Apr-15														S		
<i>Phacelia monoensis</i>	Mono County phacelia	VASC	Boraginaceae			BLMS	1B.1	T	G3	S2		No	28-Apr-15				K												
<i>Phacelia mustelina</i>	Death Valley round-leaved phacelia	VASC	Boraginaceae			BLMS	1B.3		G2	S2		No	03-Jun-13	Saline Valley.													K		
<i>Phacelia nashiana</i>	Charlotte's phacelia	VASC	Boraginaceae			BLMS	1B.2		G3	S3		No	13-Sep-12			K											K		
<i>Phacelia novemmillensis</i>	Nine Mile Canyon phacelia	VASC	Boraginaceae			BLMS	1B.2		G3	S3		No	16-Nov-10			K											K		
<i>Phacelia parishii</i>	Parish's phacelia	VASC	Boraginaceae			BLMS	1B.1		G2G3	S1		No	03-Jun-13	The only known population on BLM lands in Southern California is within and immediately adjacent to a military maneuvering training area. This species was at one time considered extirpated in CA, but was rediscovered in 1989.			K												

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<i>Phacelia phacelioides</i>	Mount Diablo phacelia	VASC	Boraginaceae			BLMS	1B.2		G1	S1		No	03-Jun-13	Known but very uncommon within ACEC of Clear Creek Management Area acc 2009 Draft CCMA RMP/EIS. Six records from CCMA in Cal Flora 2009.								K							
<i>Phaeocollybia californica</i>	California phaeocollybia	FUNG	Cortinariaceae			BLMS			G3	None		No	28-Apr-15			K												S	
<i>Phaeocollybia olivacea</i>	olive phaeocollybia	FUNG	Cortinariaceae			BLMS			G3	None		No	16-Nov-10			K												S	
<i>Phaeocollybia piceae</i>	'spruce phaeocollybia'	FUNG	Cortinariaceae			BLMS			G3?	None		No	16-Nov-10			K													
<i>Phaeocollybia pseudofestiva</i>	no common name	FUNG	Cortinariaceae			BLMS			G3	None		No	16-Nov-10			S													
<i>Phaeocollybia scatesiae</i>	no common name	FUNG	Cortinariaceae			BLMS			G3?	None		No	16-Nov-10			K													
<i>Phaeocollybia spadicea</i>	spadicea phaeocollybia	FUNG	Cortinariaceae			BLMS			G3G4	None		No	16-Nov-10			K												S	
<i>Phlox hirsuta</i>	Yreka phlox	VASC	Polemoniaceae	FE	SE		1B.2		G1	S1		Yes															S		
<i>Pholisma sonorae</i>	sand food	VASC	Boraginaceae			BLMS	1B.2		G2	S2		No	13-Sep-12	Formerly included in the family Lennoaceae.								K							
<i>Piperia candida</i>	white-flowered rein orchid	VASC	Orchidaceae			BLMS	1B.2		G3?	S2		No	03-Jun-13	May be on public lands on Red Mt. Jennifer to check--will leave as suspected for now.		S													
<i>Piperia yadonii</i>	Yadon's rein orchid	VASC	Orchciaceae	FE			1B.1		G2	S2		Yes	13-Sep-12									K							
<i>Plagiobothrys uncinatus</i>	hooked popcorn-flower	VASC	Boraginaceae			BLMS	1B.2		G2	S2		No	03-Jun-13				S												
<i>Pleuropogon hooverianus</i>	Hoover's semaphore grass	VASC	Poaceae		ST	BLMS	1B.1		G2	S2		No	13-Sep-12			S													
<i>Poa diaboli</i>	Diablo Canyon blue grass	VASC	Poaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	May be on BLM lands in Ruda Canyon, San Luis Obispo Co.			S												
<i>Polyctenium williamsiae</i>	Williams's combleaf	VASC	Brassicaceae			BLMS	1B.2	T	G2Q	S1 (CA); S2 (NV)	CE	No	03-Jun-13	Known in Bishop on BLM land in the Bodie area. Because the Jepson Manual 2nd Edition and the Flora of North America reduced this species to synonymy under P. fremontii, the species was recently reviewed and kept on List 1B.2 by CNPS and CNDDB by decision dated February 8, 2012.	S				K	S									

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<i>Polygonum polygaloides</i> subsp. <i>esotericum</i>	Modoc County knotweed	VASC	Polygonaceae			BLMS	1B.1		G4G5T3	S3		No	28-Apr-15		K														
<i>Polyozellus multiplex</i>	blue chanterelle	FUNG	Thelephoraceae			BLMS			G4G5	None		No	16-Nov-10		S														
<i>Potentilla basaltica</i>	Black Rock potentilla	VASC	Rosaceae	FC		BLMS	1B.3	T	G1	S1(CA); S1(NV)		No		Threats appear to be competition from meadow plant species.	K												S		
<i>Pseudobahia peirsonii</i>	Tulare pseudobahia	VASC	Asteraceae	FT	SE		1B.1		G1	S1		No				S													
<i>Ptilidium californicum</i>	Pacific fuzzwort	BRYO	Ptilidiaceae			BLMS	4.3		G3G4	S3?		No	03-Jun-13		K											S			
<i>Puccinellia howellii</i>	Howell's alkali-grass	VASC	Poaceae			BLMS	1B.1		G1	S1		No	03-Jun-13													S			
<i>Puccinellia parishii</i>	Parish's alkaligrass	VASC	Poaceae			BLMS	1B.1		G2G3	S1		No				S													
<i>Pyrocoma lucida</i>	sticky pyrrocoma	VASC	Asteraceae			BLMS	1B.2		G3	S3		No	13-Sep-12						K										
<i>Raillardella pringlei</i>	showy raillardella	VASC	Asteraceae			BLMS	1B.2		G3	S3		No													S				
<i>Ramalina pollinaria</i>	dusty ramalina	LICH	Ramalinaceae			BLMS			G4	None		No	16-Nov-10		K														
<i>Ramaria amyloidea</i>	'pinkish coral mushroom'	FUNG	Ramariaceae			BLMS			G3	None		No	16-Nov-10		K														
<i>Ramaria aurantiisiccescens</i>	'yellow coral mushroom'	FUNG	Ramariaceae			BLMS			G3	None		No	16-Nov-10		K														
<i>Ramaria cyaneigranosa</i>	'pinkish coral mushroom'	FUNG	Ramariaceae			BLMS			G3	None		No	28-Apr-15		S														
<i>Ramaria largentii</i>	'orange coral mushroom'	FUNG	Ramariaceae			BLMS			G3	None		No	16-Nov-10		K														
<i>Rhynchospora californica</i>	California beaked-rush	VASC	Cyperaceae			BLMS	1B.1		G1	S1		No	03-Jun-13													S			
<i>Ribes canthariforme</i>	Moreno currant, San Diego currant	VASC	Grossulariaceae			BLMS	1B.3		G2	S2		No	16-Nov-10												S				
<i>Ribes tularense</i>	Sequoia gooseberry	VASC	Grossulariaceae			BLMS	1B.3		G2	S2		No	28-Apr-15			K													
<i>Rorippa columbiae</i>	Columbia yellow cress	VASC	Brassicaceae			BLMS	1B.2		G3	S1		No			S					S					S				
<i>Rupertia hallii</i>	Hall's rupertia	VASC	Fabaceae			BLMS	1B.2		G2G3	S2S3		No	28-Apr-15													K			
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	VASC	Alismataceae			BLMS	1B.2		G3	S3		No	13-Sep-12													K			

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<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	VASC	Polemoniaceae			BLMS	1B.2		G2	S2		No	28-Apr-15	Known to occur on BLM lands along or near currently designated OHV routes in the Old Dad Mountains south of the west end of the Mojave National Preserve acc. Jim Weigand.									K	K		K				
<i>Salvia greatae</i>	Orocopia sage	VASC	Lamiaceae			BLMS	1B.3		G2G3	S2S3		No	28-Apr-15	CNDDDB Occurrence # 11 is from the south edge of the Trilobite Wilderness near Amboy (Needles Field Office), far from the core of its range in southern Riverside County. The occurrence (shown on BLM lands) is unvouchered and was listed as <i>Salvia cf. funerea</i> by Spaulding and Twitchell in 1978. CNDDDB decided it must be <i>S. greatae</i> . Kam Barrows looked at the occurrence in 1986 and found no plants.										S	K					
<i>Sanicula saxatilis</i>	rock sanicle	VASC	Apiaceae		SR	BLMS	1B.2		G2	S2		No	13-Sep-12																	
<i>Sarcodon fuscoindicum</i>	violet hedgehog	FUNG	Bankeraceae			BLMS			G3	None		No	16-Nov-10			K														
<i>Sedum albomarginatum</i>	Feather River stonecrop	VASC	Crassulaceae			BLMS	1B.2		G2	S2		No	28-Apr-15													S				
<i>Sedum laxum subsp. eastwoodiae</i>	Red Mountain stonecrop	VASC	Crassulaceae			BLMS	1B.2		G5T2	S2		No	03-Jun-13	Formerly <i>S. eastwoodiae</i> (Britton) Berger. Formerly a Federal candidate for listing, but removed from the candidate list on publication of a "Listing not warranted" finding by the U.S. Fish and Wildlife Service (Federal Register 79: 56029, September 18, 2014).		K														
<i>Sedum obtusatum subsp. paradisum</i>	Canyon Creek stonecrop	VASC	Crassulaceae			BLMS	1B.3		G4G5T2	S2		No	16-Nov-10	Formerly <i>S. paradisum</i> (M. Denton) M. Denton.												K				

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<i>Senecio clevelandii</i> var. <i>heterophyllus</i>	Red Hills ragwort	VASC	Asteraceae			BLMS	1B.2		G4?T2Q	S2?		Yes	03-Jun-13	<i>Senecio clevelandii</i> is now <i>Packera clevelandii</i> , but the combination <i>Packera clevelandii</i> var. <i>heterophylla</i> has not been validly published. This variety has been reduced to synonymy in the Jepson Manual 1st and 2nd editions. The treatment by Barkley in Jepson Manual 1 was not based on genetic work. Barkley's treatment has been continued by Trock in Jepson Manual 2 and Flora North America. CDFW, CNPS, and BLM will continue to recognize the variety until genetic work conclusively shows that vars. <i>clevelandii</i> and <i>heterophyllus</i> are actually the same taxon.																	
<i>Sidalcea covillei</i>	Owens Valley checkerbloom	VASC	Malvaceae		SE	BLMS	1B.1		G2	S2		No	28-Apr-15					K													
<i>Sidalcea hickmanii</i> subsp. <i>anomala</i>	Cuesta Pass checkerbloom	VASC	Malvaceae		SR	BLMS	1B.2		G3T1	S1		No	13-Sep-12			S						S									
<i>Sidalcea hickmanii</i> subsp. <i>parishii</i>	Parish's checkerbloom	VASC	Malvaceae		SR	BLMS	1B.2		G3T1	S1		No	03-Jun-13	This species used to be a Federal candidate but was removed from the candidate list in 2006.											S						
<i>Sidalcea keckii</i>	Keck's checkerbloom	VASC	Malvaceae	FE			1B.1		G1	S1		No	13-Sep-12				K														
<i>Sidalcea malviflora</i> subsp. <i>patula</i>	Siskiyou checkerbloom	VASC	Malvaceae			BLMS	1B.2		G5T2	S2		No	13-Sep-12			S															
<i>Sidalcea oregana</i> subsp. <i>eximia</i>	coast checkerbloom	VASC	Malvaceae			BLMS	1B.2		G5T1	S1		No				S															
<i>Sidalcea robusta</i>	Butte County checkerbloom	VASC	Malvaceae			BLMS	1B.2		G2	S2		No	13-Sep-12													K					
<i>Silene campanulata</i> subsp. <i>campanulata</i>	Red Mountain catchfly	VASC	Caryophyllaceae		SE	BLMS	4.2		G5T3Q	S3		No	28-Apr-15	Known from Red Mountain, Mendocino Co., Arcata FO; suspected on public lands in Ukiah FO from an occurrence near public lands in the Gilmore Peak 24k quad, Colusa Co.		K													S		

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<i>Silene occidentalis subsp. longistipitata</i>	long-stiped campion	VASC	Caryophyllaceae			BLMS	1B.2		G4T2Q	S2		No	16-Nov-10												S				
<i>Smilax jamesii</i>	English Peak greenbriar	VASC	Smilacaceae			BLMS	1B.3		G2	S2		No													S				
<i>Sowerbyella rhenana</i>	stalked orange peel fungus	FUNG	Pyrenemataceae			BLMS			G3G5	None		No	16-Nov-10		S										S				
<i>Sparassis crispa</i>	cauliflower mushroom	FUNG	Sparassidaceae			BLMS			None	None		No	16-Nov-10		K														
<i>Spathularia flavida</i>	fairy fan	FUNG	Cudoniaceae			BLMS			G4G5	None		No	16-Nov-10		K										S				
<i>Sphaeralcea rusbyi var. eremicola</i>	Rusby's desert-mallow	VASC	Malvaceae			BLMS	1B.2		G4T2	S2		No	13-Sep-12	CNPS Rare Plant Treasure Hunt found 19 new occurrences in 2010.									K						
<i>Stenotus lanuginosus var. lanuginosus</i>	woolly stenotus	VASC	Asteraceae			BLMS	2B.2		G5T3	S3		No	28-Apr-15	Known in CA from fewer than five occurrences. This species occurs at low numbers at each site.	K														
<i>Stipa exigua</i>	little ricegrass	VASC	Poaceae			BLMS	2B.3		G5	S2		No	03-Jun-13	Formerly <i>Oryzopsis exigua</i> Thurb. Known in CA from only two widely separated occurrences, one on public lands within the Eagle Lake Field Office which burned within the last few years. It is not common in NV. Threats include grazing and weed invasion following the recent fire.	K				K										S
<i>Streptanthus albidus subsp. albidus</i>	Metcalf Canyon jewel-flower	VASC	Brassicaceae	FE			1B.1		G2T1	S1		Yes	13-Sep-12									S							
<i>Streptanthus brachiatus subsp. brachiatus</i>	Socrates Mine jewel-flower	VASC	Brassicaceae			BLMS	1B.2		G2T1	S1		Yes	03-Jun-13																K
<i>Streptanthus brachiatus subsp. hoffmanii</i>	Freed's jewelflower	VASC	Brassicaceae			BLMS	1B.2		G2T2	S2		No	16-Nov-10	This taxon was recognized in Jepson Manual 1st edition, but is reduced to synonymy under <i>S. brachiatus</i> in the 2nd edition.															K
<i>Streptanthus callistus</i>	Mount Hamilton jewel-flower	VASC	Brassicaceae			BLMS	1B.3		G1	S1		No	13-Sep-12									S							



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<i>Streptanthus campestris</i>	southern jewel-flower	VASC	Brassicaceae			BLMS	1B.3		G3	S3		No	28-Apr-15	Nonspecific CNDDDB Occurrence 8, in the El Centro FO, is on lands slated for renewable energy; there are BLM lands within the mapped 1 mile radius circle, but there are also private lands. Occurrence 1, in the Palm Springs FO, contains BLM lands within the mapped 1 mile radius circle, but most of the lands within the circle are private.										S						
<i>Streptanthus cordatus</i> var. <i>piutensis</i>	Piute Mountains jewel-flower	VASC	Brassicaceae			BLMS	1B.2		G5T1	S1		No	03-Jun-13				K												K	
<i>Streptanthus glandulosus</i> subsp. <i>hoffmannii</i>	Hoffmann's jewel-flower	VASC	Brassicaceae			BLMS	1B.3		G4TH	SH		No	16-Nov-10	Elevated from <i>S. g.</i> var. <i>hoffmannii</i> Kruckeberg to subsp. <i>hoffmannii</i> in Jepson Manual 2nd edition.																S
<i>Streptanthus morrisonii</i> subsp. <i>elatus</i>	Three Peaks jewel-flower	VASC	Brassicaceae			BLMS	1B.2		G2T2	S2		No	28-Apr-15	Reduced to synonymy under <i>S. morrisonii</i> in Jepson Manual 2nd edition.																K
<i>Streptanthus morrisonii</i> subsp. <i>hirtiflorus</i>	Dorr's Cabin jewel-flower	VASC	Brassicaceae			BLMS	1B.2		G2T1	S1		No	28-Apr-15	Reduced to synonymy under <i>S. morrisonii</i> in Jepson Manual 2nd edition.																S
<i>Streptanthus morrisonii</i> subsp. <i>kruckebergii</i>	Kruckeberg's jewel-flower	VASC	Brassicaceae			BLMS	1B.2		G2T1	S1		No	03-Jun-13	Reduced to synonymy under <i>S. morrisonii</i> in Jepson Manual 2nd edition.																K
<i>Streptanthus morrisonii</i> subsp. <i>morrisonii</i>	Morrison's jewel-flower	VASC	Brassicaceae			BLMS	1B.2		G2T2	S2		No	28-Apr-15	The Jepson Manual 2nd edition does not recognize any subspecific taxa under <i>S. morrisonii</i> .																K
<i>Streptanthus oliganthus</i>	Masonic Mountain jewel-flower	VASC	Brassicaceae			BLMS	1B.2	W	G2G3	S2		No	28-Apr-15						K											
<i>Streptanthus vernalis</i>	early jewel-flower	VASC	Brassicaceae			BLMS	1B.2		G1	S1		No	24-Aug-09	Known from only one occurrence on serpentine at Three Peaks.																K
<i>Stylocline citroleum</i>	oil neststraw	VASC	Asteraceae			BLMS	1B.1		G2	S2		No	18-Sep-12	After reviewing CNDDDB, specific occurrence 18 has BLM lands within the mapped circle.			K													
<i>Stylocline masonii</i>	Mason neststraw	VASC	Asteraceae			BLMS	1B.1		G1	S1		No	03-Jun-13				S													

SCIENTIFIC NAME	COMMON NAME	TYPE OF PLANT	FAMILY	FED STATUS	CA STATUS	BLM STATUS	CA RARE PLANT RANK	NNPS STATUS	GLOBAL RANK	STATE RANK	NV STATUS	RECOVERY PLAN?	DATE UPDATED	COMMENTS	ALTURAS	ARCATA	BAKERSFIELD	BARSTOW	BISHOP	EAGLE LAKE	EL CENTRO	HOLLISTER	MOTHER LODGE	NEEDLES	PALM SPRINGS	REDDING	RIDGECREST	SURPRISE	UKIAH
<i>Sulcaria isidiifera</i>	splitting yarn lichen	LICH	Alectoriaceae			BLMS	1B.1		G1	S1		No	26-Jan-15	A 5-acre BLM parcel is inside of the 1/5 mile circle mapped for Occurrence Number 4 of this species.			S												
<i>Symphotrichum greatae</i>	Greata's aster	VASC	Asteraceae			BLMS	1B.3		G3	S3		No	28-Apr-15	CNDDDB Occurrence 41 in Ventura County abuts BLM lands in the Bakersfield Field Office. Occurrence 36 in Los Angeles County (Palm Springs Field Office) has small area of BLM lands within the nonspecific mapped 1-mile radius circle, this based on an 1893 collection.			S								S				
<i>Symphotrichum defoliatum</i>	San Bernardino aster	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	13-Sep-12	Newly accepted name for <i>Aster bernardinus</i> H.M. Hall. CNDDDB maps nonspecific location close to BLM lands on Mt. Laguna.							S			S	S				
<i>Teloschistes flavicans</i>	orangebush lichen	LICH	Teloschistaceae			BLMS			G4G5	None		No	16-Nov-10			S													
<i>Tetracoccus dioicus</i>	Parry's tetracoccus	VASC	Euphorbiaceae			BLMS	1B.2		G3?	S2		No	28-Apr-15												K				
<i>Tetraphis geniculata</i>	bent-kneed four-tooth moss	BRYO	Tetraphidaceae			BLMS			G3G5	None		No	16-Nov-10			S													
<i>Thelypodium howellii</i> var. <i>howellii</i>	Howell's thelypodium	VASC	Brassicaceae			BLMS	1B.2		G2T2	S2		No	03-Jun-13		S				K									S	
<i>Thermopsis californica</i> var. <i>semota</i>	velvety false lupine	VASC	Fabaceae			BLMS	1B.2		G4T2	S2		No	28-Apr-15	Nonspecific CNDDDB Occurrence 16 borders BLM land slated for renewable energy.							S								
<i>Thysanocarpus rigidus</i>	Ridge Fringepod	VASC	Brassicaceae			BLMS	1B.2		G1G2	S1S2		No	03-Oct-11	Currently shown in 2 locations close to BLM lands in the Laguna Mountains.							S								
<i>Tortula californica</i>	California screw moss	BRYO	Pottiaceae			BLMS	1B.2		G2?	S2		No	13-Sep-12				S												
<i>Trifolium buckwestiorum</i>	Santa Cruz clover	VASC	Fabaceae			BLMS	1B.1		G2	S2		No	03-Jun-13	Known from 3 locations at Fort Ord, one of which along road scheduled to be widened (entered 1/24/02).								K							
<i>Trifolium jokerstii</i>	Butte County golden clover	VASC	Fabaceae			BLMS	1B.2		G2	S2		No	03-Jun-13												K				

SCIENTIFIC NAME	COMMON NAME	TYPE OF PLANT	FAMILY	FED STATUS	CA STATUS	BLM STATUS	CA RARE PLANT RANK	NNPS STATUS	GLOBAL RANK	STATE RANK	NV STATUS	RECOVERY PLAN?	DATE UPDATED	COMMENTS	ALTURAS	ARCATA	BAKERSFIELD	BARSTOW	BISHOP	EAGLE LAKE	EL CENTRO	HOLLISTER	MOTHER LODGE	NEEDLES	PALM SPRINGS	REDDING	RIDGECREST	SURPRISE	UKIAH	
<i>Trifolium kingii subsp. dedeckerae</i>	DeDecker's clover	VASC	Fabaceae			BLMS	1B.3		G2	S2		No	28-Apr-15	DFG and CNPS still have as <i>T. dedeckerae</i> J.M Gillett. Was <i>Trifolium macilentum</i> var. <i>dedeckerae</i> (J.M. Gillett) Barneby in Jepson Manual 1st edition. The treatment used here is the treatment in Jepson Manual 2nd edition.			S												K	
<i>Trifolium polyodon</i>	Pacific Grove clover	VASC	Fabaceae		SR	BLMS	1B.1		G1	S1		No	03-Jun-13									K								
<i>Triteleia piutensis</i>	Piute Mountains triteleia	VASC	Themidaceae			BLMS	1B.1		G1	S1		No	20-Jan-15	Recently described by Kentner, E. and K. Steiner. 2014. A new species of <i>Triteleia</i> (Themidaceae) from the southern Sierra Nevada. Madroño 61(2): 227-230. Added to CDFW/CNPS list on 7/24/2014.			K													
<i>Usnea longissima</i>	long beard lichen	LICH	Parmeliaceae			BLMS	4.2		G4	S4		No	28-Apr-15			K														
<i>Verbena californica</i>	Red Hills vervain	VASC	Verbenaceae	FT	ST		1B.1		G2	S2		No	13-Sep-12										K							
<i>Vermilacinia cephalota</i>	powdery fog lichen	LICH	Ramalinaceae			BLMS			G3G4	None		No	16-Nov-10	Formerly <i>Niebla cephalota</i> (Tuck.) Rundel & Bowler, which the PLANTS database treats as a synonym.		K														
<i>Wyethia reticulata</i>	El Dorado mule ears	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	13-Sep-12	FWS Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills addresses this species even though it's not federally listed.									K							
<i>Xylorhiza cognata</i>	Mecca-aster	VASC	Asteraceae			BLMS	1B.2		G2	S2		No	03-Jun-13	Occurs on BLM lands along or near OHV routes and trails in the Meccacopia Special Recreation Area acc. Jim Weigand.											K					
<i>Xylorhiza orcuttii</i>	Orcutt's woody aster	VASC	Asteraceae			BLMS	1B.2		G2G3	S2		No	13-Sep-12								K									

SCIENTIFIC NAME	COMMON NAME	TYPE OF PLANT	FAMILY	FED STATUS	CA STATUS	BLM STATUS	CA RARE PLANT RANK	NNPS STATUS	GLOBAL RANK	STATE RANK	NV STATUS	RECOVERY PLAN?	DATE UPDATED	COMMENTS	ALTURAS	ARCATA	BAKERSFIELD	BARSTOW	BISHOP	EAGLE LAKE	EL CENTRO	HOLLISTER	MOTHER LODGE	NEEDLES	PALM SPRINGS	REDDING	RIDGECREST	SURPRISE	UKIAH		
<i>Zeltnera namophila</i>	spring-loving centaury	VASC	Gentianaceae	FT				t	G2Q	S2 (Nevada)	CE	Yes	28-Apr-15	Formerly <i>Centaurium namophilum</i> Reveal, C.R. Boome, & Beatley, this species is now treated as <i>Zeltnera namophila</i> in the Jepson Manual, 2nd edition. Although the CNPS Inventory, accessed 8/8/2013, still treats this as <i>Centaurium namophilum</i> (var. <i>namophilum</i> ) and states that the species does not occur in California, citing previous records they consider to be based on a misidentification of <i>C. exaltatum</i> (Griseb.) Piper, the Jepson Manual 2 believes that the specimens referred to <i>C. exaltatum</i> are in fact <i>Z. namophila</i> . This species is almost certainly in the Carson Slough area of the Barstow Field Office.				K													

Type of Plant: BRYO = Bryophyte; FUNG = Fungus; LICH = Lichen; VASC = Vascular plant; Federal Status: FE = Federally Endangered; FT = Federally Threatened; FC = Federal Candidate; FP = Proposed for Federal Listing; FD = Federally Delisted. State of California (CA) Status: SE = State Endangered; ST = State Threatened; SR = State Rare. California Rare Plant Rank: 1A = Plants presumed extinct in CA; 1B = Plants rare, threatened, or endangered in CA and elsewhere; 2 = Plants rare, threatened, or endangered in CA, but more common elsewhere; 3 = Plants about which more information is needed; 4 = Plants of limited distribution – a watch list. Decimals following the CA Rare Plant Rank Numbers: x.1 = Seriously endangered in CA; x.2 = Fairly endangered in CA; x.3 = Not very endangered in CA. Nevada Native Plant Society (NNPS) Status: W = Watch List. State of Nevada (NV) Status: CE = Critically Endangered; CE# = Proposed for Critically Endangered. Global and State Rank: The Global Rank is assigned by NatureServe and reflects the overall condition of the element throughout its global range; G-ranks are used for species as a whole, T-ranks for subspecies; the State (S) Rank is assigned by the State Heritage Program and reflects the overall condition of the element within a State. Code meanings can be found at: <http://www.natureserve.org/explorer/ranking.htm#interpret>. Comments: Additional information, only provided for some plants. Date Updated: This field is provided to show when changes or updates were last made to an element; this tracking was implemented only in recent years, so the field is blank for most elements. K or S under BLM field offices: K = Known to occur on BLM lands managed by that field office; S = Suspected to occur on BLM lands managed by that field office.

FIELD OFFICE	COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	BLM STATUS	OTHER STATUS
El Centro	40 Species					
	Mammal					
	California leaf-nosed bat	Macrotus californicus			BLMS	SSC
	Cave myotis	Myotis velifer			BLMS	SSC
	Desert bighorn sheep	Ovis canadensis nelsoni			BLMS	SF
	Fringed myotis	Myotis thysanodes			BLMS	
	Long-eared myotis	Myotis evotis			BLMS	
	Pallid bat	Antrozous pallidus			BLMS	SSC
	Palm Springs little pocket mouse	Perognathus longimembris bangsi			BLMS	
	Small-footed myotis	Myotis ciliolabrum			BLMS	
	Townsend's big-eared bat	Corynorhinus townsendii			BLMS	SSC
	Western mastiff-bat	Eumops perotis californicus			BLMS	SSC
	Yuma myotis	Myotis yumanensis			BLMS	
	Bird					
	Arizona bell's vireo	Vireo bellii arizonae		SE	BLMS	
	Brown pelican	Pelecanus occidentalis	FD	SD	BLMS	SF
	Burrowing owl	Athene cunicularia			BLMS	SSC
	California black rail	Laterallus jamaicensis coturniculus		ST	BLMS	SF
	California spotted owl	Strix occidentalis occidentalis			BLMS	SSC
	Elf owl	Micrathene whitneyi		SE	BLMS	
	Gila woodpecker	Melanerpes uropygialis		SE	BLMS	
	Gilded flicker	Colaptes chrysoides		SE	BLMS	
	Least Bell's vireo	Vireo bellii pusillus	FE	SE		
	Lucy's warbler	Oreothlypis luciae			BLMS	SSC
	Mountain plover	Charadrius montanus			BLMS	SSC
	Southwestern willow flycatcher	Empidonax traillii extimus	FE	SE		
	Tricolored blackbird	Agelaius tricolor			BLMS	SSC
	Western yellow-billed cuckoo	Coccyzus americanus occidentalis	FC	SE	BLMS	
	Yuma clapper rail	Rallus longirostris yumanensis	FE	ST		SF
	Reptile					
	Barefoot banded gecko	Coleonyx switaki		ST	BLMS	
	Coast horned lizard	Phrynosoma blainvillii			BLMS	
	Colorado Desert fringe-toed lizard	Uma notata			BLMS	

Federal Status: FE = Federally Endangered, FT = Federally Threatened, FC = Federal Candidate, FP = Proposed for Federal Listing, FD = Delisted from Federal ESA; State Status: SE = State Endangered, ST = State Threatened, SC = State Candidate, SD = Delisted from State ESA; Other Status: EA = Bald and Golden Eagle Protection Act, SF = Fully Protected, SSC = Species of Special Concern

FIELD OFFICE	COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	BLM STATUS	OTHER STATUS
	Desert tortoise	Gopherus agassizii	FT	ST		
	Flat-tailed horned lizard	Phrynosoma mcalli			BLMS	
	Southwestern pond turtle	Actinemys marmorata pallida			BLMS	
	Two-striped garter snake	Thamnophis hammondi			BLMS	
Amphibian	Couch's spadefoot toad	Scaphiopus couchi			BLMS	
	Lowland leopard frog	Lithobates yavapaiensis			BLMS	
Fish	Colorado pikeminnow	Ptychocheilus lucius	FE	SE		SF
	Desert pupfish	Cyprinodon macularius	FE	SE		
	Mojave tui chub	Siphateles bicolor mohavensis	FE	SE		SF
	Razorback sucker	Xyrauchen texanus	FE	SE		SF
	Unarmored threespine stickleback	Gasterosteus aculeatus williamsoni	FE	SE		SF

Federal Status: FE = Federally Endangered, FT = Federally Threatened, FC = Federal Candidate, FP = Proposed for Federal Listing, FD = Delisted from Federal ESA; State Status: SE = State Endangered, ST = State Threatened, SC = State Candidate, SD = Delisted from State ESA; Other Status: EA = Bald and Golden Eagle Protection Act, SF = Fully Protected, SSC = Species of Special Concern

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**APPENDIX D**

**California Department  
of Fish and Wildlife  
RareFind report**

CALIFORNIA DEPARTMENT OF  
**FISH and WILDLIFE RareFind**

**Query Summary:**

Quad **IS** (Ogilby (3211477) **OR** Hedges (3211487))  
**AND** County **IS** (Imperial)

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**CNDDB Element Query Results**

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Anomala hardyorum	Hardy's dune beetle	Insects	IICOL30060	17	1	None	None	G1	S1	null	null	Desert dunes, Sonoran desert scrub
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	2	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Apocera warneri	Glamis sand fly	Insects	IIDIP54020	1	1	None	None	G1G2	S1S2	null	null	Desert dunes
Astragalus insularis var. harwoodii	Harwood's milk-vetch	Dicots	PDFAB0F491	120	2	None	None	G5T4	S2	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Desert dunes, Desert wash, Mojavean desert scrub
Calliandra eriophylla	pink fairy-duster	Dicots	PDFAB0N040	53	20	None	None	G5	S3	2B.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Sonoran desert scrub
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	1	None	None	G3G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran



													desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Croton wigginsii	Wiggins' croton	Dicots	PDEUP0H140	12	1	None	Rare	G2G3	S2	2B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Desert dunes, Sonoran desert scrub	
Cyclocephala wandae	Wandae dune beetle	Insects	IICOL33020	1	1	None	None	G1G2	S1S2	null	null	Desert dunes	
Ditaxis claryana	glandular ditaxis	Dicots	PDEUP080L0	26	1	None	None	G3G4	S2	2B.2	null	Desert wash, Mojavean desert scrub, Sonoran desert scrub	
Efferia macroxipha	Glamis robberfly	Insects	IIDIP07040	1	1	None	None	G1G2	S1S2	null	null	Desert dunes	
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	296	4	None	None	G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, WBWG_H-High Priority	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland	
Euparagia unidentata	Algodones euparagia	Insects	IIHYMBC010	3	1	None	None	G1G2	S1S2	null	null	Desert dunes	
Gopherus agassizii	desert tortoise	Reptiles	ARAAF01012	970	13	Threatened	Threatened	G3	S2S3	null	IUCN_VU-Vulnerable	Joshua tree woodland, Mojavean desert scrub, Sonoran desert scrub	
Macrotus californicus	California leaf-nosed bat	Mammals	AMACB01010	46	11	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority	Riparian scrub, Sonoran desert scrub	
Melanerpes uropygialis	Gila woodpecker	Birds	ABNYF04150	62	1	None	Endangered	G5	S1	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Riparian forest, Riparian woodland	
Microbembex elegans	Algodones elegant sand wasp	Insects	IIHYM90010	1	1	None	None	G1G2	S1S2	null	null	Desert dunes	
Myotis velifer	cave myotis	Mammals	AMACC01050	9	1	None	None	G5	S1	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_M-Medium Priority	Riparian scrub, Sonoran desert scrub	
Nyctinomops femorosaccus	pocketed free-tailed bat	Mammals	AMACD04010	90	1	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_M-Medium Priority	Joshua tree woodland, Pinon & juniper woodlands, Riparian scrub, Sonoran desert scrub	
Palafoxia arida var. gigantea	giant spanish-needle	Dicots	PDAST6T012	6	2	None	None	G5T3?	S2	1B.3	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Desert dunes	
Perdita	Algodones	Insects	IIHYM01130	1	1	None	None	G1G2	S1S2	null	null	Desert	

algodones	perdita												dunes
Perdita frontalis	Imperial Perdita	Insects	IIHYM01140	2	1	None	None	G1G2	S1S2	null	null		Desert dunes
Perdita stephanomeriae	a miner bee	Insects	IIHYM01840	3	1	None	None	GNR	S1S2	null	null		Desert dunes
Pholisma sonorae	sand food	Dicots	PDLNN02020	14	2	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		Desert dunes, Sonoran desert scrub
Phrynosoma mcallii	flat-tailed horned lizard	Reptiles	ARACF12040	340	6	None	None	G3	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened		Desert dunes, Mojavean desert scrub, Sonoran desert scrub
Polioptila melanura	black-tailed gnatcatcher	Birds	ABPBK08030	34	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern		Mojavean desert scrub, Sonoran desert scrub
Pseudocotalpa andrewsi	Andrew's dune scarab beetle	Insects	IICOL37020	29	1	None	None	G1	S1	null	null		Desert dunes, Sonoran desert scrub
Toxostoma crissale	Crissal thrasher	Birds	ABPBK06090	67	1	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern		Riparian woodland
Toxostoma lecontei	Le Conte's thrasher	Birds	ABPBK06100	238	2	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern		Desert wash, Mojavean desert scrub, Sonoran desert scrub



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad<span style='color: Red'> IS </span>(Ogilby (3211477)<span style='color: Red'> OR </span>Hedges (3211487))<br /><span style='color: Red'> AND </span></span>County<span style='color: Red'> IS </span>(Imperial)

<b>Map Index Number:</b> 63284	<b>EO Index:</b> 63376
<b>Key Quad:</b> Hedges (3211487)	<b>Element Code:</b> ABNYF04150
<b>Occurrence Number:</b> 30	<b>Occurrence Last Updated:</b> 2005-12-01

<b>Scientific Name:</b> <i>Melanerpes uropygialis</i>	<b>Common Name:</b> Gila woodpecker
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> Endangered	<b>Other Lists:</b> BLM_S-Sensitive
<b>CNDDDB Element Ranks:</b>	IUCN_LC-Least Concern
<b>Global:</b> G5	USFWS_BCC-Birds of Conservation Concern
<b>State:</b> S1	

<b>General Habitat:</b> IN CALIFORNIA, INHABITS COTTONWOODS AND OTHER DESERT RIPARIAN TREES, SHADE TREES, AND DATE PALMS.	<b>Micro Habitat:</b> CAVITY NESTER IN RIPARIAN TREES OR SAGUARO CACTUS.
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<b>Last Date Observed:</b> 2002-03-09	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 2002-03-09	<b>Occurrence Rank:</b> Fair
<b>Owner/Manager:</b> BLM	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
UNNAMED WASH SOUTH OF INDIAN WASH, ABOUT 2.25 MILES WEST OF THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
**Ecological:**  
DESERT WASH WOODLAND WITH PALO VERDE & IRONWOOD SURROUNDED BY DISTURBED CREOSOTE BUSH SCRUB.

**Threats:**  
OFF-ROAD VEHICLE USE.

**General:**  
1 ADULT OBSERVED 9 MAR 2002.

<b>PLSS:</b> T14S, R20E, Sec. 34 (S)	<b>Accuracy:</b> 80 meters	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3642305 E699897	<b>Latitude/Longitude:</b> 32.90071 / -114.86272	<b>Elevation (feet):</b> 537

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Hedges (3211487)
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**Sources:**  
KON02F0001 KONECNY, J. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR MELANERPES UROPYGIALIS 2002-03-09



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06541

**EO Index:** 25005

**Key Quad:** Hedges (3211487)

**Element Code:** ABPB08030

**Occurrence Number:** 31

**Occurrence Last Updated:** 1989-08-10

**Scientific Name:** *Polioptila melanura*

**Common Name:** black-tailed gnatcatcher

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** CDFW\_WL-Watch List  
IUCN\_LC-Least Concern

**CNDDDB Element Ranks:** **Global:** G5

**State:** S3S4

**General Habitat:**

PRIMARILY INHABITS WOODED DESERT WASH HABITATS; ALSO OCCURS IN DESERT SCRUB HABITAT, ESPECIALLY IN WINTER.

**Micro Habitat:**

NESTS IN DESERT WASHES CONTAINING MESQUITE, PALO VERDE, IRONWOOD, ACACIA; ABSENT FROM AREAS WHERE SALT CEDAR INTRODUCED.

**Last Date Observed:** 1977-06-07

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1977-06-07

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

INDIAN WASH, AT HWY S-34, APPROX 12.5 MI N OF I-80 AND 12 MILES S OF HWY 78.

**Detailed Location:**

**Ecological:**

**Threats:**

**General:**

NESTING BIRDS OBSERVED DURING SUMMER 1977 STUDY; 13 BREEDING PAIRS ESTIMATED.

**PLSS:** T14S, R20E, Sec. 22, NE (S)

**Accuracy:** 1 mile

**Area (acres):** 0

**UTM:** Zone-11 N3645946 E700809

**Latitude/Longitude:** 32.93336 / -114.85219

**Elevation (feet):** 620

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

BLM80S0014 BLM - DESERT PLAN STAFF - COMPILATION OF HISTORIC MUSEUM SPECIMEN INFORMATION FOR POLIOPTILA MELANURA LUCIDA, COLLECTED DURING THE PREPARATION OF "THE CALIFORNIA DESERT PLAN". 1980-XX-XX



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 06541

**EO Index:** 24395

**Key Quad:** Hedges (3211487)

**Element Code:** ABPBK06090

**Occurrence Number:** 47

**Occurrence Last Updated:** 1989-08-10

**Scientific Name:** *Toxostoma crissale*

**Common Name:** Crissal thrasher

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** BLM\_S-Sensitive  
CDFW\_SSC-Species of Special Concern  
IUCN\_LC-Least Concern

**CNDDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

RESIDENT OF SOUTHEASTERN DESERTS IN DESERT RIPARIAN AND DESERT WASH HABITATS.

**Micro Habitat:**

NESTS IN DENSE VEGETATION ALONG STREAMS/WASHES; MESQUITE, SCREWBEAN MESQUITE, IRONWOOD, CATCLAW, ACACIA, ARROWWEED, WILLOW.

**Last Date Observed:** 1977-06-07

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1977-06-07

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

INDIAN WASH, AT HWY S-34, APPROX 12.5 MI N OF I-80 AND 12 MILES S OF HWY 78.

**Detailed Location:**

**Ecological:**

**Threats:**

**General:**

NESTING BIRDS OBS DURING SUMMER 1977 STUDY; ESTIMATED THREE BREEDING PAIRS.

**PLSS:** T14S, R20E, Sec. 22 (S)

**Accuracy:** 1 mile

**Area (acres):** 0

**UTM:** Zone-11 N3645946 E700809

**Latitude/Longitude:** 32.93336 / -114.85219

**Elevation (feet):** 620

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

BLM80S0013 BLM - DESERT PLAN STAFF - COMPILATION OF HISTORIC MUSEUM SPECIMEN INFORMATION FOR TOXOSTOMA DORSALE, COLLECTED DURING THE PREPARATION OF "THE CALIFORNIA DESERT PLAN". 1980-XX-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06550  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 35

**EO Index:** 24533  
**Element Code:** ABPBK06100  
**Occurrence Last Updated:** 1989-08-10

**Scientific Name:** *Toxostoma lecontei*

**Common Name:** Le Conte's thrasher

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G4  
                                   **State:**     S3

**Rare Plant Rank:**  
**Other Lists:**       BLM\_S-Sensitive  
                           CDFW\_SSC-Species of Special Concern  
                           IUCN\_LC-Least Concern  
                           NABCI\_RWL-Red Watch List  
                           USFWS\_BCC-Birds of Conservation Concern

**General Habitat:**

DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.

**Micro Habitat:**

COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

**Last Date Observed:** 1896-03-16  
**Last Survey Date:** 1896-03-16  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**

OGILBY.

**Detailed Location:**

**Ecological:**

**Threats:**

**General:**

CAS SPECIMEN #55196.

**PLSS:** T15S, R20E, Sec. 35, NW (S)  
**UTM:** Zone-11 N3633124 E702138

**Accuracy:** 1 mile  
**Latitude/Longitude:** 32.81754 / -114.84079

**Area (acres):** 0  
**Elevation (feet):** 360

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477)

**Sources:**

BLM80R0014    BUREAU OF LAND MANAGEMENT - THE CALIFORNIA DESERT PLAN 1980-02-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06541

**EO Index:** 24493

**Key Quad:** Hedges (3211487)

**Element Code:** ABPBK06100

**Occurrence Number:** 88

**Occurrence Last Updated:** 1989-08-10

**Scientific Name:** *Toxostoma lecontei*

**Common Name:** Le Conte's thrasher

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:**

**CNDDB Element Ranks:** **Global:** G4

**State:** S3

BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 NABCI\_RWL-Red Watch List  
 USFWS\_BCC-Birds of Conservation Concern

**General Habitat:**

DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.

**Micro Habitat:**

COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

**Last Date Observed:** 1977-06-07

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1977-06-07

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

INDIAN WASH, AT HWY S-34, APPROX 12.5 MI N OF I-80 AND 12 MILES S OF HWY 78.

**Detailed Location:**

**Ecological:**

**Threats:**

**General:**

NESTING BIRDS OBS DURING SUMMER 1977 STUDY; ESTIMATED ONE BREEDING PAIR.

**PLSS:** T14S, R20E, Sec. 22, NE (S)

**Accuracy:** 1 mile

**Area (acres):** 0

**UTM:** Zone-11 N3645946 E700809

**Latitude/Longitude:** 32.93336 / -114.85219

**Elevation (feet):** 620

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

BLM80R0014 BUREAU OF LAND MANAGEMENT - THE CALIFORNIA DESERT PLAN 1980-02-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 33092  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 13

**EO Index:** 3603  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 2007-04-03

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**  
 DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**  
 NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 1999-01-XX  
**Last Survey Date:** 1999-01-XX  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Excellent  
**Trend:** Unknown

**Location:**  
 "CARGO MINE," IN JACKSON GULCH, ABOUT 3.5 MILES ENE OF OGILBY, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
 THIS MINE IS PROTECTED BY A STURDY, HIGH CHAIN LINK FENCE, A LOCKED GATE, AND SIGNS. INDIVIDUALS WERE OBSERVED ROOSING ON 30 APR 1992. 1993-1999 NUMBERS REFER TO OUTFLIGHT COUNTS. 650-750 OUTFLIGHT COUNT (OFC) WINTER 1990/91.

**Ecological:**  
 HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE. THIS POPULATION EXPERIENCES FLUCTUATIONS, BASED ON ACTIONS IN NEARBY MINES.

**Threats:**  
 POSSIBLE THREATS INCLUDE RENEWED MINING, HUMAN (RECREATIONAL) DISURBANCE, AND MINE CLOSURE FOR HAZARD ABATEMENT.

**General:**  
 132 INDIVS APRIL, 260 OFC MAY, 152 OFC JUNE, 636 OFC DEC 1992. 109 26 JUNE; 207 3 JULY; 1462 10 DEC 1993. 764 WINTER 1994. 222 JUL 1995. 1289 JAN, 182 JUL 1996. 266 JAN, 195 JUN 1997. 221 JAN, 183 JUN 1998. 1292 JAN 1999.

**PLSS:** T15S, R21E, Sec. 20, SE (S)      **Accuracy:** 80 meters      **Area (acres):** 0  
**UTM:** Zone-11 N3635139 E707835      **Latitude/Longitude:** 32.83464 / -114.77952      **Elevation (feet):** 720

**County Summary:** Imperial  
**Quad Summary:** Ogilby (3211477)

- Sources:**
- BRO92F0019 BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1992-04-30
  - BRO92R0002 BROWN-BERRY BIOLOGICAL CONSULTING - A SUMMER BASELINE SURVEY FOR THE CALIFORNIA LEAF-NOSED BAT IN THE CARGO MUCHACHO MOUNTAINS. 1992-10-02
  - BRO92R0003 BROWN, P.E. - A SPRING SURVEY FOR BATS OF THE AMERICAN GIRL CANYON PROJECT AND THE ORO CRUZ PROJECT, CARGO MUCHACHO MOUNTAINS, IMPERIAL COUNTY, CALIFORNIA. 1992-06-05
  - BRO93F0045 BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1993-07-03
  - BRO98U0002 BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1998-05-04
  - BRO99U0001 BROWN-BERRY BIOLOGICAL CONSULTING - BAT CENSUS OF CARGO MUCHACHO MINES, AUGUST 1989-JANUARY 1999 1999-01-XX
  - BRO99U0002 BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1999-02-08





# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 33093  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 14

**EO Index:** 3604  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 1995-04-04

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**  
 DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**  
 NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 1993-12-14  
**Last Survey Date:** 1993-12-14  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Good  
**Trend:** Unknown

**Location:**  
 "NE OF CARGO MINE," VICINITY OF JACKSON GULCH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
**Ecological:**  
 HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
**General:**  
 1 ADULT OBSERVED ROOSTING.

<b>PLSS:</b> T15S, R21E (S)	<b>Accuracy:</b> 1/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3635466 E708291	<b>Latitude/Longitude:</b> 32.83750 / -114.77458	<b>Elevation (feet):</b> 880

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Ogilby (3211477)
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**Sources:**  
 BRO93F0046 BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1993-12-14



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 33096  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 17

**EO Index:** 3606  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 2007-03-05

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**  
 DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**  
 NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 2006-01-15  
**Last Survey Date:** 2006-01-15  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Good  
**Trend:** Unknown

**Location:**  
 "GUADALUPE MINE," IN THE VICINITY OF THE AMERICAN GIRL WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
 2006 OBSERVATION FROM SHAFT OMR #13346.

**Ecological:**  
 HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
 POSSIBLE THREATS INCLUDE RENEWED MINING, HUMAN (RECREATIONAL) DISTURBANCE, AND MINE CLOSURE FOR HAZARD ABATEMENT.

**General:**  
 10 FEMALES AND 2 MALES OBSERVED ROOSTING ON 15 DECEMBER 1992; 10 OF THE BATS HAD BEEN PREVIOUSLY BANDED AND ROOSTED IN THE AMERICAN BOY MINE, WHICH IS NOW AN ACTIVE MINING SITE. GUANO DETECTED DURING SURVEY ON 15 JAN 2006.

<b>PLSS:</b> T15S, R21E, Sec. 16, SW (S)	<b>Accuracy:</b> 80 meters	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3637459 E709123	<b>Latitude/Longitude:</b> 32.85530 / -114.76525	<b>Elevation (feet):</b> 880

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Ogilby (3211477)
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**Sources:**  
 BRO06R0001 BROWN, P. (BROWN-BERRY BIOLOGICAL CONSULTING) - CALIFORNIA STATE LANDS COMMISSION MINE SITE DESCRIPTIONS AND BAT SURVEY RESULTS 2006-02-04  
 BRO92F0023 BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1992-12-15



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 33095  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 16

**EO Index:** 3605  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 2007-04-03

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**  
 DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**  
 NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 1996-07-03  
**Last Survey Date:** 1996-07-03  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Good  
**Trend:** Unknown

**Location:**  
 "PADRE MADRE CLAIM," SOUTH OF THE AMERICAN GIRL WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
 ONE PORTION OF THIS ROOST IS LOCATED OUTSIDE THE FENCE AND ONE PART IS LOCATED INSIDE THE FENCE. INCLUDES SOUTH OF MINE IN INCLINE ON TOP OF HILL.

**Ecological:**  
 HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
 POSSIBLE THREATS INCLUDE RENEWED MINING, HUMAN (RECREATIONAL) DISTURBANCE, AND MINE CLOSURE FOR HAZARD ABATEMENT.

**General:**  
 ROOST SITE. OUTSIDE FENCE: 10 OBSERVED 2 MAY, 10 OBSERVED 18 JUN 1992; INSIDE FENCE: 8 OBSERVED ON 2 MAY, 6 OBSERVED ON 18 JUN 1992. OUTFLIGHT COUNT OF 55 + 25 ON 3 JUL 1996.

<b>PLSS:</b> T15S, R21E, Sec. 19, NE (S)	<b>Accuracy:</b> 1/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3635878 E706624	<b>Latitude/Longitude:</b> 32.84153 / -114.79229	<b>Elevation (feet):</b> 600

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**

BRO92F0021 BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1992-05-02

BRO92F0022 BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1992-05-02

BRO92R0002 BROWN-BERRY BIOLOGICAL CONSULTING - A SUMMER BASELINE SURVEY FOR THE CALIFORNIA LEAF-NOSED BAT IN THE CARGO MUCHACHO MOUNTAINS. 1992-10-02

BRO92R0003 BROWN, P.E. - A SPRING SURVEY FOR BATS OF THE AMERICAN GIRL CANYON PROJECT AND THE ORO CRUZ PROJECT, CARGO MUCHACHO MOUNTAINS, IMPERIAL COUNTY, CALIFORNIA. 1992-06-05

BRO99U0001 BROWN-BERRY BIOLOGICAL CONSULTING - BAT CENSUS OF CARGO MUCHACHO MINES, AUGUST 1989-JANUARY 1999 1999-01-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 33096  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 17

**EO Index:** 3606  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 2007-03-05

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**  
 DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**  
 NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 2006-01-15  
**Last Survey Date:** 2006-01-15  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Good  
**Trend:** Unknown

**Location:**  
 "GUADALUPE MINE," IN THE VICINITY OF THE AMERICAN GIRL WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
 2006 OBSERVATION FROM SHAFT OMR #13346.

**Ecological:**  
 HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
 POSSIBLE THREATS INCLUDE RENEWED MINING, HUMAN (RECREATIONAL) DISTURBANCE, AND MINE CLOSURE FOR HAZARD ABATEMENT.

**General:**  
 10 FEMALES AND 2 MALES OBSERVED ROOSTING ON 15 DECEMBER 1992; 10 OF THE BATS HAD BEEN PREVIOUSLY BANDED AND ROOSTED IN THE AMERICAN BOY MINE, WHICH IS NOW AN ACTIVE MINING SITE. GUANO DETECTED DURING SURVEY ON 15 JAN 2006.

<b>PLSS:</b> T15S, R21E, Sec. 16, SW (S)	<b>Accuracy:</b> 80 meters	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3637459 E709123	<b>Latitude/Longitude:</b> 32.85530 / -114.76525	<b>Elevation (feet):</b> 880

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 BRO06R0001 BROWN, P. (BROWN-BERRY BIOLOGICAL CONSULTING) - CALIFORNIA STATE LANDS COMMISSION MINE SITE DESCRIPTIONS AND BAT SURVEY RESULTS 2006-02-04  
 BRO92F0023 BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1992-12-15



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 33097  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 18

**EO Index:** 3607  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 2011-01-18

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**  
 DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**  
 NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 1992-10-12  
**Last Survey Date:** 1992-10-12  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Good  
**Trend:** Unknown

**Location:**  
 "TYBO MINE," VICINITY OF THE AMERICAN GIRL WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
 INCLUDES LOCALITY "AMERICAN GIRL MINE."

**Ecological:**  
 HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
 POSSIBLE THREATS INCLUDE RENEWED MINING, HUMAN (RECREATIONAL) DISTURBANCE, AND MINE CLOSURE FOR HAZARD ABATEMENT.

**General:**  
 HISTORIC SITE. 150-200 OBS BY P. BROWN 1977. POPULATION HAS LIKELY DECREASED DUE TO RENEWED MINING IN THE AREA AND REMOVAL OF WASH VEGETATION. 4 INDIVIDUALS OBSERVED ROOSTING ON 12 OCTOBER 1992.

<b>PLSS:</b> T15S, R21E (S)	<b>Accuracy:</b> 1/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3637467 E707137	<b>Latitude/Longitude:</b> 32.85575 / -114.78645	<b>Elevation (feet):</b> 740

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Ogilby (3211477)
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**Sources:**  
 BLM80R0014 BUREAU OF LAND MANAGEMENT - THE CALIFORNIA DESERT PLAN 1980-02-XX  
 BRO92F0024 BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1992-12-10  
 BRO93U0001 BROWN, P.E., R.D. BERRY & C. BROWN - ABSTRACT OF A PAPER PRESENTED AT THE CALIFORNIA MINING ASSOCIATION ANNUAL MEETING IN MONTEREY, MARCH 10, 1993. 1993-03-10



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



<b>Map Index Number:</b> 26333	<b>EO Index:</b> 40808
<b>Key Quad:</b> Hedges (3211487)	<b>Element Code:</b> AMACB01010
<b>Occurrence Number:</b> 26	<b>Occurrence Last Updated:</b> 2007-04-03

<b>Scientific Name:</b> <i>Macrotus californicus</i>	<b>Common Name:</b> California leaf-nosed bat
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> None	<b>Other Lists:</b>
<b>CNDDB Element Ranks:</b>	BLM_S-Sensitive
<b>Global:</b> G4	CDFW_SSC-Species of Special Concern
<b>State:</b> S3	IUCN_LC-Least Concern
	WBWG_H-High Priority

<b>General Habitat:</b> DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.	<b>Micro Habitat:</b> NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.
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<b>Last Date Observed:</b> 1999-01-XX	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1999-01-XX	<b>Occurrence Rank:</b> Good
<b>Owner/Manager:</b> BLM	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
MESQUITE ADIT, TUMCO WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
GATED MINE ENTRANCE. LOCATED TO W OF THE GOLDEN RING. INCLUDES QUEEN INCLINE & MESQUITE MINE. ABOUT 80 OBS 1989. 12 CAPT/BANDED (C/B) FEB, 49 OBS JUL, 44 IN DEC 1990. 2 C/B MAY, 12 CAPT, 8 OBS DEC 1991. 3 OBS APR/MAY 1992.

**Ecological:**  
HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
POSSIBLE THREAT OF MINING - SITE IS UNDER CLAIM TO A MINING COMPANY, HUMAN DISTURBANCE, CLOSURE FOR HAZARD ABATEMENT.

**General:**  
3 BANDED BATS CAPT JUN, 15 C/B DEC 1992. ~5 CAPT JUN, 2 IN JUL, 1 OBS DEC '93.1 OBS MAR, OBS IN JUN, 27 IN DEC '94. OBS MAR, 18 IN 6 JUL '95. 13 OBS IN JAN, OBS IN JUL '96.15 OBS JAN, OBS JUN '97. 13 OBS JAN, OBS JUN '98. 27 OBS JAN '99.

<b>PLSS:</b> T15S, R20E, Sec. 01, SW (S)	<b>Accuracy:</b> 2/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3640372 E703297	<b>Latitude/Longitude:</b> 32.88266 / -114.82683	<b>Elevation (feet):</b> 700

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Hedges (3211487)
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**Sources:**

BRO92F0047	BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1992-04-30
BRO92R0002	BROWN-BERRY BIOLOGICAL CONSULTING - A SUMMER BASELINE SURVEY FOR THE CALIFORNIA LEAF-NOSED BAT IN THE CARGO MUCHACHO MOUNTAINS. 1992-10-02
BRO92R0003	BROWN, P.E. - A SPRING SURVEY FOR BATS OF THE AMERICAN GIRL CANYON PROJECT AND THE ORO CRUZ PROJECT, CARGO MUCHACHO MOUNTAINS, IMPERIAL COUNTY, CALIFORNIA. 1992-06-05
BRO93F0073	BROWN & BERRY BIOLOGICAL - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1993-06-28
BRO99U0001	BROWN-BERRY BIOLOGICAL CONSULTING - BAT CENSUS OF CARGO MUCHACHO MINES, AUGUST 1989-JANUARY 1999 1999-01-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



<b>Map Index Number:</b> 26334	<b>EO Index:</b> 40809	
<b>Key Quad:</b> Hedges (3211487)	<b>Element Code:</b> AMACB01010	
<b>Occurrence Number:</b> 27	<b>Occurrence Last Updated:</b> 2011-08-16	

<b>Scientific Name:</b> <i>Macrotus californicus</i>	<b>Common Name:</b> California leaf-nosed bat
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> None	<b>Other Lists:</b>
<b>CNDDDB Element Ranks:</b>	BLM_S-Sensitive
<b>Global:</b> G4	CDFW_SSC-Species of Special Concern
<b>State:</b> S3	IUCN_LC-Least Concern
	WBWG_H-High Priority

<b>General Habitat:</b> DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.	<b>Micro Habitat:</b> NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.
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<b>Last Date Observed:</b> 1999-01-XX	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1999-01-XX	<b>Occurrence Rank:</b> Good
<b>Owner/Manager:</b> BLM	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
(GOLDEN) QUEEN MINE, IN TUMCO WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
1990 OBS MATERNITY ROOST. MESQUITE, GOLDEN KING & CROWN MINES & EAST & WEST SOVERIGN PROSPECT INCLUDED HERE. OBS EXITING INCLINE & SHAFT IN 1989 OBS & IN JUN 1992. 125 OBS AUG 1989. OBS FEB/JUL/DEC 1990. 2 OBS DEC 1991.

**Ecological:**  
HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
RENEWED MINING, HUMAN DISTURBANCE, CLOSURE FOR HAZARD ABATEMENT.

**General:**  
14 BANDED, 178 OBS MAY/JUN, 208 OBS DEC 1992. 40 OBS 29 JUN, 5 OBS JUL, 295 OBS DEC, 10 OBS DEC '93. OBS IN MAR/JUN/JUL/DEC '94. OBS MAR/JUL '95. 6 OBS JUN, 147 JAN/JUN/JUL '96. OBS JAN/JUN '97. 68 OBS JAN, 50 OBS JUN 1998. 190 OBS JAN '99.

<b>PLSS:</b> T15S, R20E, Sec. 01 (S)	<b>Accuracy:</b> 2/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3640600 E703890	<b>Latitude/Longitude:</b> 32.88460 / -114.82044	<b>Elevation (feet):</b> 720

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Hedges (3211487)
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**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Sources:**

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BRO92F0048	BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1992-06-26
BRO92F0049	BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1992-06-20
BRO92F0050	BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1992-06-19
BRO92F0051	BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1992-06-20
BRO92F0052	BROWN, P. - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1992-05-01
BRO92R0002	BROWN-BERRY BIOLOGICAL CONSULTING - A SUMMER BASELINE SURVEY FOR THE CALIFORNIA LEAF-NOSED BAT IN THE CARGO MUCHACHO MOUNTAINS. 1992-10-02
BRO92R0003	BROWN, P.E. - A SPRING SURVEY FOR BATS OF THE AMERICAN GIRL CANYON PROJECT AND THE ORO CRUZ PROJECT, CARGO MUCHACHO MOUNTAINS, IMPERIAL COUNTY, CALIFORNIA. 1992-06-05
BRO93F0047	BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS (ROOST SITE) 1993-01-23
BRO93F0068	BROWN & BERRY BIOLOGICAL - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1993-12-11
BRO93F0069	BROWN & BERRY BIOLOGICAL - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1993-07-05
BRO93F0070	BROWN & BERRY BIOLOGICAL - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1993-06-29
BRO93F0071	BROWN & BERRY BIOLOGICAL - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1993-07-07
BRO93F0072	BROWN & BERRY BIOLOGICAL - FIELD SURVEY FORM FOR MACROTUS CALIFORNICUS 1993-12-13
BRO98U0002	BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1998-05-04
BRO99U0002	BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1999-02-08





**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 66655

**EO Index:** 68474

**Key Quad:** Hedges (3211487)

**Element Code:** AMACB01010

**Occurrence Number:** 31

**Occurrence Last Updated:** 2007-04-20

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** BLM\_S-Sensitive  
CDFW\_SSC-Species of Special Concern  
IUCN\_LC-Least Concern  
WBWG\_H-High Priority

**CNDDDB Element Ranks:** **Global:** G4

**State:** S3

**General Habitat:**

DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**

NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 2006-01-25

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2006-01-25

**Occurrence Rank:** Unknown

**Owner/Manager:** UNKNOWN

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

CARGO MUCHACHO MOUNTAINS, ABOUT 1.4 MI NORTH OF HEDGES.

**Detailed Location:**

SHAFT & ADIT OMR #13313 & 13316 AND DECLINE OMR #13320.

**Ecological:**

MATERNITY COLONY FOR MACROTUS CALIFORNICUS.

**Threats:**

**General:**

45 INDIVIDUALS OBSERVED IN A SIDE DRIFT OFF THE NORTHWEST BRANCH, 4 FEMALES CAPTURED, BANDED & RELEASED INSIDE THE MINE ON 25 JAN 2006.

**PLSS:** T14S, R20E, Sec. 36, W (S)

**Accuracy:** non-specific area

**Area (acres):** 156

**UTM:** Zone-11 N3642270 E703327

**Latitude/Longitude:** 32.89976 / -114.82608

**Elevation (feet):** 780

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

- BRO06R0001 BROWN, P. (BROWN-BERRY BIOLOGICAL CONSULTING) - CALIFORNIA STATE LANDS COMMISSION MINE SITE DESCRIPTIONS AND BAT SURVEY RESULTS 2006-02-04
- BRO06R0002 BROWN, P. (BROWN-BERRY BIOLOGICAL CONSULTING) - CALIFORNIA STATE LANDS COMMISSION MINE SITE DESCRIPTIONS AND BAT SURVEY RESULTS 2006-06-15



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 68784  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 40

**EO Index:** 69287  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 2007-04-10

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**  
 DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**  
 NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 1999-01-17  
**Last Survey Date:** 1999-01-17  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 AMERICAN BOY MINE. CARGO MUCHACHO MOUNTAINS, TUMCO WASH.

**Detailed Location:**

**Ecological:**

**Threats:**  
**General:**  
 MAINLY WINTER ROOST PRIOR TO CLOSURE IN 1992. 2 INDIVIDUALS OBSERVED EMERGING FROM ADIT IN JUN 1997. 1 INDIVIDUAL & GUANO OBSERVED IN JAN 1998. OUTFLIGHT COUNT OF 6 INDIVIDUALS AND GUANO OBSERVED 17 JAN 1999.

**PLSS:** T15S, R21E, Sec. 16, NW (S)      **Accuracy:** 1/10 mile      **Area (acres):** 0  
**UTM:** Zone-11 N3638222 E708635      **Latitude/Longitude:** 32.86227 / -114.77028      **Elevation (feet):** 740

**County Summary:** Imperial  
**Quad Summary:** Ogilby (3211477)

- Sources:**
- BRO98U0002 BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1998-05-04
  - BRO99U0001 BROWN-BERRY BIOLOGICAL CONSULTING - BAT CENSUS OF CARGO MUCHACHO MINES, AUGUST 1989-JANUARY 1999 1999-01-XX
  - BRO99U0002 BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1999-02-08



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06550  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 46

**EO Index:** 82343  
**Element Code:** AMACB01010  
**Occurrence Last Updated:** 2011-01-18

**Scientific Name:** *Macrotus californicus*

**Common Name:** California leaf-nosed bat

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G4  
**State:** S3

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_LC-Least Concern  
 WBWG\_H-High Priority

**General Habitat:**

DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.

**Micro Habitat:**

NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.

**Last Date Observed:** 1944-11-23  
**Last Survey Date:** 1944-11-23  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 OGILBY.  
**Detailed Location:**  
**Ecological:**

**Threats:**  
**General:**

2 FEMALES COLLECTED 30 MAY 1943. 4 MALES COLLECTED 24 NOV 1944 BY D.G. CONSTANTINE (LACM #11652-11657).

<b>PLSS:</b> T15S, R20E, Sec. 35 (S)	<b>Accuracy:</b> 1 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3633124 E702138	<b>Latitude/Longitude:</b> 32.81754 / -114.84079	<b>Elevation (feet):</b> 360

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**

BLM80R0014 BUREAU OF LAND MANAGEMENT - THE CALIFORNIA DESERT PLAN 1980-02-XX  
 CON44S0001 CONSTANTINE, D.G. - LACM RECORDS FOR MACROTUS CALIFORNICUS RECORDS FROM OGILBY 1944-11-24



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 68363

**EO Index:** 68553

**Key Quad:** Hedges (3211487)

**Element Code:** AMACC01050

**Occurrence Number:** 10

**Occurrence Last Updated:** 2007-03-07

**Scientific Name:** *Myotis velifer*

**Common Name:** cave myotis

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** BLM\_S-Sensitive  
CDFW\_SSC-Species of Special Concern  
IUCN\_LC-Least Concern  
WBWG\_M-Medium Priority

**CNDDB Element Ranks:** **Global:** G5

**State:** S1

**General Habitat:**

LOWLANDS OF THE COLORADO RIVER AND ADJACENT MOUNTAIN RANGES.

**Micro Habitat:**

REQUIRE CAVES OR MINES FOR ROOSTING.

**Last Date Observed:** 2006-06-05

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2006-06-05

**Occurrence Rank:** Unknown

**Owner/Manager:** UNKNOWN

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

CARGO MUCHACHO MOUNTAINS, ABOUT 1.5 MI NORTH OF HEDGES.

**Detailed Location:**

SHAFT OMR 13328 IN NW 1/4 OF SECTION 36, NEAR THE BASE OF A WEST FACING HILL. SHAFT WAS 10 X 10 X 50 FT DEEP WITH UNSTABLE LOOSE ROCK IN THE TOP 10 FEET.

**Ecological:**

**Threats:**

**General:**

1 BAT OBSERVED EXITING THE SHAFT AFTER DARK 5 JUN 2005. BAT APPEARED TO BE MYOTIS VELIFER BASED ON A COMPARISON OF OBSERVATION TIME WITH TIME OF ACOUSTIC RECORDS BUT IDENTIFICATION IS NOT CONFIRMED. M. VELIFER IS RARE HERE.

**PLSS:** T14S, R20E, Sec. 36, NW (S)

**Accuracy:** non-specific area

**Area (acres):** 151

**UTM:** Zone-11 N3643058 E703316

**Latitude/Longitude:** 32.90686 / -114.82603

**Elevation (feet):** 820

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

BRO06R0002 BROWN, P. (BROWN-BERRY BIOLOGICAL CONSULTING) - CALIFORNIA STATE LANDS COMMISSION MINE SITE DESCRIPTIONS AND BAT SURVEY RESULTS 2006-06-15



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



<b>Map Index Number:</b> 91986	<b>EO Index:</b> 93061
<b>Key Quad:</b> Hedges (3211487)	<b>Element Code:</b> AMACC08010
<b>Occurrence Number:</b> 252	<b>Occurrence Last Updated:</b> 2014-04-07

<b>Scientific Name:</b> <i>Corynorhinus townsendii</i>	<b>Common Name:</b> Townsend's big-eared bat
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> None	<b>Other Lists:</b>
<b>CNDDB Element Ranks:</b>	BLM_S-Sensitive
<b>Global:</b> G3G4	CDFW_SSC-Species of Special Concern
<b>State:</b> S2	IUCN_LC-Least Concern
	USFS_S-Sensitive
	WBWG_H-High Priority

<b>General Habitat:</b> THROUGHOUT CALIFORNIA IN A WIDE VARIETY OF HABITATS. MOST COMMON IN MESIC SITES.	<b>Micro Habitat:</b> ROOSTS IN THE OPEN, HANGING FROM WALLS AND CEILINGS. ROOSTING SITES LIMITING. EXTREMELY SENSITIVE TO HUMAN DISTURBANCE.
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<b>Last Date Observed:</b> 1947-05-28	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1947-05-28	<b>Occurrence Rank:</b> Unknown
<b>Owner/Manager:</b> UNKNOWN	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
ABOUT 1.4 MI E OF OGILBY ROAD AT GOLD ROCK RANCH ROAD AND ABOUT 3.2 MI NW OF PASADENA PEAK.

**Detailed Location:**  
MAPPED TO LOCALITY STATED AS "TUMCO MINE, 5 MI N, 2 MI E OGILBY."

**Ecological:**

**Threats:**

**General:**

1 MALE COLLECTED ON 28 MAY 1947 (MVZ #106720) BY S. BENSON.

<b>PLSS:</b> T15S, R20E, Sec. 01, SE (S)	<b>Accuracy:</b> 1/10 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3640199 E704351	<b>Latitude/Longitude:</b> 32.88090 / -114.81559	<b>Elevation (feet):</b> 830

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Hedges (3211487)
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**Sources:**  
BEN47S0006 BENSON, S. - MVZ #106720 1947-05-28



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 66500

**EO Index:** 18838

**Key Quad:** Hedges (3211487)

**Element Code:** AMACC10010

**Occurrence Number:** 21

**Occurrence Last Updated:** 2011-08-31

**Scientific Name:** *Antrozous pallidus*

**Common Name:** pallid bat

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:**  
BLM\_S-Sensitive  
CDFW\_SSC-Species of Special Concern  
IUCN\_LC-Least Concern  
USFS\_S-Sensitive  
WBWG\_H-High Priority

**CNDDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

DESERTS, GRASSLANDS, SHRUBLANDS, WOODLANDS AND FORESTS. MOST COMMON IN OPEN, DRY HABITATS WITH ROCKY AREAS FOR ROOSTING.

**Micro Habitat:**

ROOSTS MUST PROTECT BATS FROM HIGH TEMPERATURES. VERY SENSITIVE TO DISTURBANCE OF ROOSTING SITES.

**Last Date Observed:** 1998-06-13

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1998-06-13

**Occurrence Rank:** Good

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

TUMCO WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

INCLUDES QUEEN INCLINE, TUMCO WASH, MESQUITE ADIT, TUMCO WASH, CROWN, QUEEN, W & E SOVEREIGN & TUMCO MINE. OBS FLYING IN CAVE IN 1992. MATERNITY COLONY OBS IN 1998.

**Ecological:**

HABITAT SURROUNDING ROOST CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**

THREATENED BY A PROPOSAL TO RENEW MINING.

**General:**

1 M COLL 17 JUL 1958 (MVZ #122877). 14 OBS AUG 1989. 4 JUV OBS JUN 1992. 5 IN CAVE, 87 IN OUTFLIGHT COUNT MIXED W/ MACROTUS, 25 CAPT 26 JUN-1 JUL 1993. OBS IN MAR/JUN 1994, MAR 1995, JUL 1996, JUN 1997, & JUN 1998.

**PLSS:** T15S, R20E, Sec. 01 (S)

**Accuracy:** 3/5 mile

**Area (acres):** 0

**UTM:** Zone-11 N3640196 E703630

**Latitude/Longitude:** 32.88100 / -114.82330

**Elevation (feet):** 720

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477), Hedges (3211487)

**Sources:**

- BRO92R0002 BROWN-BERRY BIOLOGICAL CONSULTING - A SUMMER BASELINE SURVEY FOR THE CALIFORNIA LEAF-NOSED BAT IN THE CARGO MUCHACHO MOUNTAINS. 1992-10-02
- BRO93F0003 BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR ANTROZOUS PALLIDUS (ROOST SITE) 1993-06-27
- BRO93F0004 BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR ANTROZOUS PALLIDUS (ROOST SITE) 1993-06-26
- BRO98U0002 BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1998-05-04
- BRO99U0001 BROWN-BERRY BIOLOGICAL CONSULTING - BAT CENSUS OF CARGO MUCHACHO MINES, AUGUST 1989-JANUARY 1999 1999-01-XX
- BRO99U0002 BROWN-BERRY BIOLOGICAL CONSULTING - REGARDING: RESULTS OF SUMMER AND WINTER BASELINE MONITORING FOR BATS IN THE VICINITY OF THE ORO CRUZ PROJECT AND THE CARGO MINE, CARGO MUCHACHO MOUNTAINS, CA. 1999-02-08
- MAN04S0028 MAMMAL NETWORKED INFORMATION SYSTEM (MANIS) - PRINTOUT OF ANTROZOUS PALLIDUS SPECIMEN RECORDS FROM MANIS. INCLUDES RECORDS FROM MVZ, CAS, KU, UWBM, UMNH, LACM, MSB, FMNH, TTU, MSU. 2004-12-09



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 66655

**EO Index:** 66798

**Key Quad:** Hedges (3211487)

**Element Code:** AMACC10010

**Occurrence Number:** 317

**Occurrence Last Updated:** 2007-03-12

**Scientific Name:** *Antrozous pallidus*

**Common Name:** pallid bat

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** BLM\_S-Sensitive  
CDFW\_SSC-Species of Special Concern  
IUCN\_LC-Least Concern  
USFS\_S-Sensitive  
WBWG\_H-High Priority

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

DESERTS, GRASSLANDS, SHRUBLANDS, WOODLANDS AND FORESTS. MOST COMMON IN OPEN, DRY HABITATS WITH ROCKY AREAS FOR ROOSTING.

**Micro Habitat:**

ROOSTS MUST PROTECT BATS FROM HIGH TEMPERATURES. VERY SENSITIVE TO DISTURBANCE OF ROOSTING SITES.

**Last Date Observed:** 2006-06-05

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2006-06-05

**Occurrence Rank:** Unknown

**Owner/Manager:** UNKNOWN

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

MINES IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

SHAFT & ADIT OMR #13313 & 13316 AND DECLINE OMR #13320.

**Ecological:**

NIGHT ROOST FOR ANTROZOUS PALLIDUS.

**Threats:**

**General:**

6 INDIVIDUALS OBSERVED NIGHT ROOSTING, INCLUDING 1 WITH A PUP ATTACHED, OBSERVED 5 JUN 2006.

**PLSS:** T14S, R20E, Sec. 36, W (S)

**Accuracy:** non-specific area

**Area (acres):** 156

**UTM:** Zone-11 N3642270 E703327

**Latitude/Longitude:** 32.89976 / -114.82608

**Elevation (feet):** 780

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

BRO06R0001 BROWN, P. (BROWN-BERRY BIOLOGICAL CONSULTING) - CALIFORNIA STATE LANDS COMMISSION MINE SITE DESCRIPTIONS AND BAT SURVEY RESULTS 2006-02-04

BRO06R0002 BROWN, P. (BROWN-BERRY BIOLOGICAL CONSULTING) - CALIFORNIA STATE LANDS COMMISSION MINE SITE DESCRIPTIONS AND BAT SURVEY RESULTS 2006-06-15



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 26366  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 3

**EO Index:** 4093  
**Element Code:** AMACD02011  
**Occurrence Last Updated:** 1995-02-08

**Scientific Name:** *Eumops perotis californicus*

**Common Name:** western mastiff bat

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G5T4  
                                   **State:**     S3S4

**Rare Plant Rank:**  
**Other Lists:**       BLM\_S-Sensitive  
                           CDFW\_SSC-Species of Special Concern  
                           WBWG\_H-High Priority

**General Habitat:**  
 MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL, ETC.

**Micro Habitat:**  
 ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES AND TUNNELS.

**Last Date Observed:** 1993-07-03  
**Last Survey Date:** 1993-07-03  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 CARGO MINE, IN JACKSON GULCH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
**Ecological:**  
 HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**  
**General:**  
 MINE SITE IS FENCED. MASTIFF BAT HEARD FLYING OVERHEAD.

<b>PLSS:</b> T15S, R21E (S)	<b>Accuracy:</b> 1 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3635161 E707853	<b>Latitude/Longitude:</b> 32.83483 / -114.77933	<b>Elevation (feet):</b> 720

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Ogilby (3211477)
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**Sources:**  
 BRO93F0023 BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR EUMOPS PEROTIS (CALIFORNICUS) 1993-07-03





# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 26334

**EO Index:** 4095

**Key Quad:** Hedges (3211487)

**Element Code:** AMACD02011

**Occurrence Number:** 4

**Occurrence Last Updated:** 1999-02-03

**Scientific Name:** *Eumops perotis californicus*

**Common Name:** western mastiff bat

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** BLM\_S-Sensitive  
CDFW\_SSC-Species of Special Concern  
WBWG\_H-High Priority

**CNDDB Element Ranks:** **Global:** G5T4

**State:** S3S4

**General Habitat:**

MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL, ETC.

**Micro Habitat:**

ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES AND TUNNELS.

**Last Date Observed:** 1993-06-28

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1993-06-28

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

QUEEN MINE, IN TUMCO WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

SITE: LARGE INCLINE ENTRANCE WITH A SHAFT TO THE SOUTHWEST.

**Ecological:**

HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**

**General:**

TWO MASTIFF BATS HEARD FLYING OVERHEAD.

**PLSS:** T15S, R20E, Sec. 01 (S)

**Accuracy:** 2/5 mile

**Area (acres):** 0

**UTM:** Zone-11 N3640600 E703890

**Latitude/Longitude:** 32.88460 / -114.82044

**Elevation (feet):** 720

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

BRO93F0024 BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR EUMOPS PEROTIS (CALIFORNICUS) 1993-06-28



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



<b>Map Index Number:</b> 26365	<b>EO Index:</b> 4094	
<b>Key Quad:</b> Hedges (3211487)	<b>Element Code:</b> AMACD02011	
<b>Occurrence Number:</b> 5	<b>Occurrence Last Updated:</b> 1995-02-08	

<b>Scientific Name:</b> <i>Eumops perotis californicus</i>	<b>Common Name:</b> western mastiff bat
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> None	<b>Other Lists:</b> BLM_S-Sensitive
<b>CNDDB Element Ranks:</b>	CDFW_SSC-Species of Special Concern
<b>Global:</b> G5T4	WBWG_H-High Priority
<b>State:</b> S3S4	

<b>General Habitat:</b> MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL, ETC.	<b>Micro Habitat:</b> ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES AND TUNNELS.
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<b>Last Date Observed:</b> 1993-12-11	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1993-12-11	<b>Occurrence Rank:</b> Unknown
<b>Owner/Manager:</b> BLM	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
CROWN MINE, IN TUMCO WASH, IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

**Ecological:**  
HABITAT CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.

**Threats:**

**General:**  
MASTIFF BATS WERE HEARD FLYING OVER THE SITE.

<b>PLSS:</b> T15S, R20E, Sec. 12 (S)	<b>Accuracy:</b> 3/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3639579 E704305	<b>Latitude/Longitude:</b> 32.87532 / -114.81623	<b>Elevation (feet):</b> 680

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Ogilby (3211477), Hedges (3211487)
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**Sources:**  
BRO93F0025 BROWN-BERRY BIOLOGICAL CONSULTING - FIELD SURVEY FORM FOR EUMOPS PEROTIS (CALIFORNICUS) 1993-12-11



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Map Index Number:</b> 68739	<b>EO Index:</b> 69217
<b>Key Quad:</b> Hedges (3211487)	<b>Element Code:</b> AMACD02011
<b>Occurrence Number:</b> 199	<b>Occurrence Last Updated:</b> 2007-03-28

<b>Scientific Name:</b> <i>Eumops perotis californicus</i>	<b>Common Name:</b> western mastiff bat
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> None	<b>Other Lists:</b> BLM_S-Sensitive
<b>CNDDB Element Ranks:</b>	CDFW_SSC-Species of Special Concern
<b>Global:</b> G5T4	WBWG_H-High Priority
<b>State:</b> S3S4	

<b>General Habitat:</b>	<b>Micro Habitat:</b>
MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL, ETC.	ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES AND TUNNELS.

<b>Last Date Observed:</b> 1997-06-11	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1997-06-11	<b>Occurrence Rank:</b> Unknown
<b>Owner/Manager:</b> UNKNOWN	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
 ABOUT 6 MILES NORTH OF CARGO MUCHACHO MOUNTAINS, VICINITY OF INDIAN WASH.

**Detailed Location:**  
 MAPPED ACCORDING TO T-R-S DATA PROVIDED BY SOURCE. SOURCE GIVES LOCALITY AS "CHEMGOLD IMPERIAL PROJECT SITE."

**Ecological:**  
**Threats:**

**General:**  
 INDIVIDUAL(S) DETECTED ACOUSTICALLY (2 AUDIBLE PASSES OVER THE PROPERTY) ON 11 JUN 1997.

<b>PLSS:</b> T13S, R21E, Sec. 32 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 4,252
<b>UTM:</b> Zone-11 N3652207 E706316	<b>Latitude/Longitude:</b> 32.98877 / -114.79191	<b>Elevation (feet):</b> 800

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Hedges (3211487), Quartz Peak (3311417)

**Sources:**  
 BRO97R0001 BROWN, P.E. (BROWN-BERRY BIOLOGICAL CONSULTING) - REGARDING: BAT SURVEY OF THE CHEMGOLD IMPERIAL PROJECT SITE. 1997-07-11



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 68739

**EO Index:** 69218

**Key Quad:** Hedges (3211487)

**Element Code:** AMACD04010

**Occurrence Number:** 38

**Occurrence Last Updated:** 2007-03-28

**Scientific Name:** *Nyctinomops femorosaccus*

**Common Name:** pocketed free-tailed bat

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** CDFW\_SSC-Species of Special Concern  
IUCN\_LC-Least Concern  
WBWG\_M-Medium Priority

**CNDDDB Element Ranks:** **Global:** G4

**State:** S3

**General Habitat:**

VARIETY OF ARID AREAS IN SOUTHERN CALIFORNIA; PINE-JUNIPER WOODLANDS, DESERT SCRUB, PALM OASIS, DESERT WASH, DESERT RIPARIAN, ETC.

**Micro Habitat:**

ROCKY AREAS WITH HIGH CLIFFS.

**Last Date Observed:** 1997-06-11

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1997-06-11

**Occurrence Rank:** Unknown

**Owner/Manager:** UNKNOWN

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

ABOUT 6 MILES NORTH OF CARGO MUCHACHO MOUNTAINS, VICINITY OF INDIAN WASH.

**Detailed Location:**

MAPPED ACCORDING TO T-R-S DATA PROVIDED BY SOURCE. SOURCE GIVES LOCALITY AS "CHEMGOLD IMPERIAL PROJECT SITE."

**Ecological:**

**Threats:**

**General:**

INDIVIDUAL(S) DETECTED ACOUSTICALLY ON 3 OCCASIONS ON 11 JUN 1997.

**PLSS:** T13S, R21E, Sec. 32 (S)

**Accuracy:** non-specific area

**Area (acres):** 4,252

**UTM:** Zone-11 N3652207 E706316

**Latitude/Longitude:** 32.98877 / -114.79191

**Elevation (feet):** 800

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487), Quartz Peak (3311417)

**Sources:**

BRO97R0001 BROWN, P.E. (BROWN-BERRY BIOLOGICAL CONSULTING) - REGARDING: BAT SURVEY OF THE CHEMGOLD IMPERIAL PROJECT SITE. 1997-07-11



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 72878  
**Key Quad:** Clyde (3211488)  
**Occurrence Number:** 150

**EO Index:** 73765  
**Element Code:** ARAAF01012  
**Occurrence Last Updated:** 2011-11-29

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:**  
**Federal:** Threatened  
**State:** Threatened  
**CNDDB Element Ranks:**  
**Global:** G3  
**State:** S2S3

**Rare Plant Rank:**  
**Other Lists:** IUCN\_VU-Vulnerable

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2005-04-27  
**Last Survey Date:** 2005-04-27  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Good  
**Trend:** Unknown

**Location:**

ALONG PIPELINE & WALKER WAY NORTH & SOUTH OF INDIAN WASH, 3.0 - 4.5 MI NW OF THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

MAPPED TO PROVIDED COORDINATES AND MAPS. SE SEC 20, W SEC 28, NE SEC 33, SW SEC 34, AND NW SEC 3.

**Ecological:**

HABITAT CONSISTED OF CREOSOTE SCRUB WITH PATCHES OF DESERT WASH WOODLAND. DOMINANT SPECIES INCL. BURROBRUSH, BIG GALLETA, IRONWOOD, PALO VERDE, CHEESEWEED, BOXTHORN, AFRICAN MUSTARD, MEDITERRANEAN GRASS, & PLANTAIN.

**Threats:**

POTENTIAL THREATS INCLUDE ROAD & OFF-HIGHWAY TRAFFIC, MILITARY OPERATIONS, PIPELINE CONSTRUCTION, & DEVELOPMENT.

**General:**

3-4 APR 2001: 8 TORTOISES, 2 CARCASSES, 1 SCUTE, 8 BURROWS (1 OLD, 1 ABANDONED), & 7 SCAT SITES (2 OLD). 21 MAY-10 JUN 2002: 5 TORTOISES (1 IN BURROW, ALL HEALTHY). 18-27 APR 2005: 5 TORTOISES, 27 BURROWS, 6 PALLET BURROWS, & 8 SCAT SITES.

<b>PLSS:</b> T14S, R20E, Sec. 28 (S)	<b>Accuracy:</b> specific area	<b>Area (acres):</b> 230
<b>UTM:</b> Zone-11 N3643986 E698390	<b>Latitude/Longitude:</b> 32.91613 / -114.87847	<b>Elevation (feet):</b> 550

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487), Clyde (3211488)



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Sources:**

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GER02F0002	GERMAN, E. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2002-05-29
GOE02F0008	GOETTEE, P. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2002-06-07
GOE02F0009	GOETTEE, P. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2002-05-30
GOE02F0012	GOETTEE, R. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2002-06-10
GRA02F0003	GRANT, C. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2002-05-21
MAL01F0004	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0005	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0006	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0007	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0008	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0011	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0012	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0013	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0168	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0171	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0172	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0173	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0174	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0175	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0176	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0177	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0178	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
MAL01F0179	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
MAL01F0195	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0201	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
MAL01F0209	MALO, L. - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0210	MALO, L. - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
MAL01F0211	MALO, L. - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-03
TET05R0001	TETRA TECH - 2005 SURVEY DESERT TORTOISE (GOPHERUS AZISII) NORTH BAJA PIPELINE EXPANSION PROJECT (NBX) RIVERSIDE AND IMPERIAL COUNTIES, CALIFORNIA. 2005-04-27



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 72990

**EO Index:** 73903

**Key Quad:** Hedges (3211487)

**Element Code:** ARAAF01012

**Occurrence Number:** 168

**Occurrence Last Updated:** 2008-11-24

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened

**Rare Plant Rank:**

**State:** Threatened

**Other Lists:** IUCN\_VU-Vulnerable

**CNDDB Element Ranks:** **Global:** G3

**State:** S2S3

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2005-01-23

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2005-01-23

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

WEST SIDE OF INDIAN PASS RD, 2.22 MI NE OF THE INTERSECTION OF HWY S34 & INDIAN PASS RD.

**Detailed Location:**

**Ecological:**

DESERT PAVEMENT WITH NUMEROUS SMALL WASHES DOMINATED BY IRONWOOD. SURROUNDING AREA IS USED FOR ORVS, RECREATION AND HUNTING.

**Threats:**

ORVS.

**General:**

1 JUVENILE (6" LONG) OBSERVED AT BURROW SITE ON 23 JAN 2005.

**PLSS:** T14S, R20E, Sec. 11 (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3648684 E702075

**Latitude/Longitude:** 32.95780 / -114.83806

**Elevation (feet):** 685

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

STE05F0004 STEWARD, D. (U.S. BUREAU OF LAND MANAGEMENT-EL CENTRO) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2005-01-23



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 73129

**EO Index:** 74060

**Key Quad:** Hedges (3211487)

**Element Code:** ARAAF01012

**Occurrence Number:** 219

**Occurrence Last Updated:** 2011-11-28

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened

**Rare Plant Rank:**

**State:** Threatened

**Other Lists:** IUCN\_VU-Vulnerable

**CNDDB Element Ranks:** **Global:** G3

**State:** S2S3

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2005-04-27

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2005-04-27

**Occurrence Rank:** Excellent

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

ABOUT 0.7 MI W OF HEDGES ON EAST SIDE OF OGILBY RD, AND ABOUT 1.2 MI E OF GOLD ROCK RANCH.

**Detailed Location:**

SE QUARTER OF SEC 3, SW QUARTER OF SEC 2, AND NW QUARTER OF SEC 11. MAPPED TO PROVIDED COORDINATES.

**Ecological:**

HABITAT CONSISTED OF CREOSOTE SCRUB WITH PATCHES OF DESERT WASH WOODLAND. DOMINANT SPECIES INCLUDED BURROBRUSH, BIG GALLETIA, IRONWOOD, PALO VERDE, CHEESEWEED, BOXTHORN, AFRICAN MUSTARD, MEDITERRANEAN GRASS, & PLANTAIN.

**Threats:**

POTENTIAL THREATS INCLUDED ROAD, PEDESTRIAN, & OFF-HIGHWAY TRAFFIC, MILITARY OPERATIONS, FIREARMS USAGE, & DEVELOPMENT.

**General:**

10 INCH FEMALE AND 210 MM MALE (BOTH IN A BURROWS), 2 ACTIVE BURROWS, AND 3 FRESH SCAT SITES OBSERVED ON 4 APR 2001. 2 BURROWS AND 2 SCAT SITES OBSERVED BETWEEN 18 & 27 APR 2005.

**PLSS:** T15S, R20E, Sec. 03, SE (S)

**Accuracy:** specific area

**Area (acres):** 29

**UTM:** Zone-11 N3640253 E701613

**Latitude/Longitude:** 32.88189 / -114.84484

**Elevation (feet):** 550

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

- MAL01F0002 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
- MAL01F0003 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
- MAL01F0181 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
- MAL01F0182 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
- MAL01F0183 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
- MAL01F0184 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04
- TET05R0001 TETRA TECH - 2005 SURVEY DESERT TORTOISE (GOPHERUS AZISII) NORTH BAJA PIPELINE EXPANSION PROJECT (NBX) RIVERSIDE AND IMPERIAL COUNTIES, CALIFORNIA. 2005-04-27





# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 73130  
**Key Quad:** Hedges (3211487)  
**Occurrence Number:** 220

**EO Index:** 74061  
**Element Code:** ARAAF01012  
**Occurrence Last Updated:** 2011-10-21

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:**       **Federal:** Threatened  
                               **State:** Threatened  
**CNDDB Element Ranks:** **Global:** G3  
                                   **State:** S2S3

**Rare Plant Rank:**  
**Other Lists:** IUCN\_VU-Vulnerable

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2001-04-06  
**Last Survey Date:** 2001-04-06  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Excellent  
**Trend:** Unknown

**Location:**

INDIAN WASH, 0.25 MI SSW OF WHERE HWY 34 CROSSES THE WASH, NNW OF CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

MAPPED TO PROVIDED COORDINATES.

**Ecological:**

HABITAT CONSISTED OF OPEN CREOSOTE SCRUB HABITAT WITH A MIX OF CREOSOTE AND AMBROSIA DUMOSA NEAR POWER LINES AND A ROAD.

**Threats:**

POTENTIAL THREATS INCLUDE ORV AND ROAD TRAFFIC.

**General:**

10" FEMALE TORTOISE, MALE CARCASS (LESS THAN 5 YEARS DEAD), 3 SCATS, AND A BURROW OBSERVED ON 6 APR 2001.

**PLSS:** T14S, R20E, Sec. 22 (S)

**Accuracy:** specific area

**Area (acres):** 15

**UTM:** Zone-11 N3645181 E700920

**Latitude/Longitude:** 32.92644 / -114.85117

**Elevation (feet):** 615

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

- MAL01F0009 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06
- MAL01F0192 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06
- MAL01F0194 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 73131

**EO Index:** 74062

**Key Quad:** Hedges (3211487)

**Element Code:** ARAAF01012

**Occurrence Number:** 221

**Occurrence Last Updated:** 2011-10-21

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened

**Rare Plant Rank:**

**State:** Threatened

**Other Lists:** IUCN\_VU-Vulnerable

**CNDDB Element Ranks:** **Global:** G3

**State:** S2S3

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2001-04-06

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-04-06

**Occurrence Rank:** Excellent

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

0.9 MILE NE OF HWY 34 AT INDIAN PASS RD, NNW OF CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

NEAR CENTER OF SEC 15. MAPPED TO PROVIDED COORDINATES.

**Ecological:**

HABITAT CONSISTED OF OPEN CREOSOTE SCRUB HABITAT NEAR POWER LINES.

**Threats:**

POTENTIAL THREATS INCLUDE ROAD TRAFFIC AND OFF-HIGHWAY VEHICLES.

**General:**

1 TORTOISE (8-9" LONG) IN BURROW AND 6 OTHER BURROWS (AT LEAST 2 ACTIVE) OBSERVED ON 6 APR 2001.

**PLSS:** T14S, R20E, Sec. 15 (S)

**Accuracy:** specific area

**Area (acres):** 22

**UTM:** Zone-11 N3647577 E700243

**Latitude/Longitude:** 32.94817 / -114.85788

**Elevation (feet):** 630

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

MAL01F0010	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06
MAL01F0188	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06
MAL01F0189	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06
MAL01F0190	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06
MAL01F0191	MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 82148  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 294

**EO Index:** 83131  
**Element Code:** ARAAF01012  
**Occurrence Last Updated:** 2011-04-04

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:**       **Federal:** Threatened  
                               **State:** Threatened  
**CNDDDB Element Ranks:** **Global:** G3  
                                   **State:** S2S3

**Rare Plant Rank:**  
**Other Lists:** IUCN\_VU-Vulnerable

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 1988-03-19  
**Last Survey Date:** 1988-03-19  
**Owner/Manager:** BLM, PVT-EVERGLADE LLC  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 AMERICAN GIRL WASH NEAR OBREGON, IN THE CARGO MUCHACHO MOUNTAINS, ABOUT 9 MI NW OF ARAZ JUNCTION.

**Detailed Location:**  
 MAPPED TO PROVIDED MAP.

**Ecological:**  
 HABITAT CONSISTED OF A LOW VALLEY BETWEEN SEVERAL BARREN LOW HILLS. PALLET WAS OBSERVED UNDER A LARGE FRANSERIA SHRUB.

**Threats:**  
 POSSIBLY THREATENED BY EARTH MOVING ACTIVITIES FROM MINING OPERATIONS.

**General:**  
 1 ADULT MALE TORTOISE (>25 YEARS OLD, 258 MM MCL) OBS WALKING NEAR PALLET BURROW 20 MAR 1988. 8 OF 13 TRANSECTS IN GENERAL AREA FOUND BURROWS OR PALLET BURROWS & LARGE AMOUNTS OF TORTOISE SCAT WAS FOUND AT THE AMERICAN BOY MINE TUNNEL.

<b>PLSS:</b> T15S, R21E, Sec. 17 (S)	<b>Accuracy:</b> 2/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3637866 E707119	<b>Latitude/Longitude:</b> 32.85935 / -114.78655	<b>Elevation (feet):</b> 660

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 MED88R0001 MEDICA, P. - SURVEY OF THE SOUTHWESTERN PORTION OF THE CARGO MUCHACHO MOUNTAINS FOR THE DESERT TORTOISE IN THE VICINITY OF THE AMERICAN GIRL MINE. 1988-03-20



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 82786

**EO Index:** 83784

**Key Quad:** Hedges (3211487)

**Element Code:** ARAAF01012

**Occurrence Number:** 467

**Occurrence Last Updated:** 2011-07-21

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened

**Rare Plant Rank:**

**State:** Threatened

**Other Lists:** IUCN\_VU-Vulnerable

**CNDDB Element Ranks:** **Global:** G3

**State:** S2S3

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2001-04-06

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-04-06

**Occurrence Rank:** Excellent

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

0.9 MI WSW OF LA COLORADO MINE, 2 MI NW OF HEDGES, NW OF CARGO MUCHACHO MOUNTAINS, ABOUT 17.5 MI NW OF YUMA.

**Detailed Location:**

MAPPED TO PROVIDED COORDINATES.

**Ecological:**

HABITAT CONSISTED OF OPEN DESERT WASH WOODLAND WITH A MIX OF IRONWOOD AND PALO VERDE NEAR POWER LINES.

**Threats:**

POTENTIAL THREATS INCLUDE OFF-HIGHWAY VEHICLES.

**General:**

2 BURROWS WITH 4 OLD SCATS OBSERVED 6 APR 2001.

**PLSS:** T14S, R20E, Sec. 35, NW (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3643007 E701447

**Latitude/Longitude:** 32.90674 / -114.84601

**Elevation (feet):** 620

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

MAL01F0193 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 82788

**EO Index:** 83785

**Key Quad:** Hedges (3211487)

**Element Code:** ARAAF01012

**Occurrence Number:** 468

**Occurrence Last Updated:** 2011-07-21

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened

**Rare Plant Rank:**

**State:** Threatened

**Other Lists:** IUCN\_VU-Vulnerable

**CNDDB Element Ranks:** **Global:** G3

**State:** S2S3

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2001-04-06

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-04-06

**Occurrence Rank:** Good

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

6 MI NNW OF HEDGES, JUST NW OF CARGO MUCHACHO MOUNTAINS, ABOUT 21 MI NW OF YUMA.

**Detailed Location:**

MAPPED TO PROVIDED COORDINATES.

**Ecological:**

HABITAT CONSISTED OF OPEN CREOSOTE SCRUB HABITAT NEAR POWER LINES.

**Threats:**

POTENTIAL THREATS INCLUDE OFF-HIGHWAY VEHICLES.

**General:**

A 9" LONG MALE CARCASS RECENTLY KILLED OBSERVED WITH BURROW AND PALLETS BURROWS, AND ANOTHER ACTIVE BURROW OBSERVED SEPARATELY, BOTH ON 6 APR 2001.

**PLSS:** T14S, R20E, Sec. 10, NW (S)

**Accuracy:** specific area

**Area (acres):** 8

**UTM:** Zone-11 N3649143 E699938

**Latitude/Longitude:** 32.96234 / -114.86080

**Elevation (feet):** 700

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

MAL01F0185 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06

MAL01F0186 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 82790

**EO Index:** 83786

**Key Quad:** Hedges (3211487)

**Element Code:** ARAAF01012

**Occurrence Number:** 469

**Occurrence Last Updated:** 2011-07-21

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened

**Rare Plant Rank:**

**State:** Threatened

**Other Lists:** IUCN\_VU-Vulnerable

**CNDDB Element Ranks:** **Global:** G3

**State:** S2S3

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2001-04-06

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-04-06

**Occurrence Rank:** Excellent

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

5.5 MI NNW OF HEDGES, JUST NW OF CARGO MUCHACHO MOUNTAINS, ABOUT 20.5 MI NW OF YUMA.

**Detailed Location:**

MAPPED TO PROVIDED COORDINATES FOR BURROW WITH SCAT.

**Ecological:**

HABITAT CONSISTED OF OPEN CREOSOTE SCRUB HABITAT NEAR POWER LINES.

**Threats:**

POTENTIAL THREATS INCLUDE OFF-HIGHWAY VEHICLES.

**General:**

BURROW WITH SCAT OBSERVED ON 6 APR 2001. OLD SCAT ALSO FOUND NEARBY TO THE NNW ON SAME DATE.

**PLSS:** T14S, R20E, Sec. 15, N (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3648110 E700475

**Latitude/Longitude:** 32.95293 / -114.85529

**Elevation (feet):** 650

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

MAL01F0187 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06

MAL01F0199 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-06



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 84033  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 876

**EO Index:** 85069  
**Element Code:** ARAAF01012  
**Occurrence Last Updated:** 2011-10-20

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened  
**State:** Threatened  
**CNDDB Element Ranks:** **Global:** G3  
**State:** S2S3

**Rare Plant Rank:**  
**Other Lists:** IUCN\_VU-Vulnerable

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2005-04-27

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2005-04-27

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

1 MI SSW OF HEDGES, JUST NW OF CARGO MUCHACHO MTNS, ABOUT 15 MI NW OF YUMA.

**Detailed Location:**

MAPPED TO PROVIDED COORDINATES.

**Ecological:**

HABITAT CONSISTED OF CREOSOTE SCRUB WITH PATCHES OF DESERT WASH WOODLAND. DOMINANT SPECIES INCL. BURROBRUSH, BIG GALLETA, IRONWOOD, PALO VERDE, CHEESEWEED, BOXTHORN, AFRICAN MUSTARD, MEDITERRANEAN GRASS, & PLANTAIN.

**Threats:**

POTENTIAL THREATS INCLUDE ROAD, PEDESTRIAN, & OFF-HIGHWAY TRAFFIC, MILITARY OPERATIONS, FIREARMS USAGE, & DEVELOPMENT.

**General:**

3 TORTOISE BURROWS OBSERVED BETWEEN 18 & 27 APR 2005.

**PLSS:** T15S, R20E, Sec. 14, SW (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3637487 E702200

**Latitude/Longitude:** 32.85686 / -114.83917

**Elevation (feet):** 470

**County Summary:**

**Quad Summary:**

Imperial

Ogilby (3211477)

**Sources:**

TET05R0001 TETRA TECH - 2005 SURVEY DESERT TORTOISE (GOPHERUS AZISII) NORTH BAJA PIPELINE EXPANSION PROJECT (NBX) RIVERSIDE AND IMPERIAL COUNTIES, CALIFORNIA. 2005-04-27



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 84034  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 877

**EO Index:** 85070  
**Element Code:** ARAAF01012  
**Occurrence Last Updated:** 2011-11-21

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:**       **Federal:** Threatened  
                               **State:** Threatened  
**CNDDB Element Ranks:** **Global:** G3  
                               **State:** S2S3

**Rare Plant Rank:**  
**Other Lists:** IUCN\_VU-Vulnerable

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2005-04-27

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2005-04-27

**Occurrence Rank:** Good

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

1 MI SSW OF HEDGES, JUST NW OF CARGO MUCHACHO MTNS, ABOUT 15 MI NW OF YUMA.

**Detailed Location:**

MAPPED TO CARCASS COORDINATES.

**Ecological:**

HABITAT CONSISTED OF CREOSOTE SCRUB WITH PATCHES OF DESERT WASH WOODLAND. DOMINANT SPECIES INCL. BURROBRUSH, BIG GALLETA, IRONWOOD, PALO VERDE, CHEESEWEED, BOXTHORN, AFRICAN MUSTARD, MEDITERRANEAN GRASS, & PLANTAIN.

**Threats:**

POTENTIAL THREATS INCLUDE ROAD, PEDESTRIAN, & OFF-HIGHWAY TRAFFIC, MILITARY OPERATIONS, FIREARMS USAGE, & DEVELOPMENT.

**General:**

4 PIECES OF SCAT OBSERVED 4 APR 2001. TORTOISE CARCASS OBSERVED BETWEEN 18 & 27 APR 2005.

**PLSS:** T15S, R20E, Sec. 14, NW (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3638296 E702226

**Latitude/Longitude:** 32.86414 / -114.83872

**Elevation (feet):** 490

**County Summary:**

**Quad Summary:**

Imperial

Ogilby (3211477)

**Sources:**

MAL01F0247 MALO, L. - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04

TET05R0001 TETRA TECH - 2005 SURVEY DESERT TORTOISE (GOPHERUS AZISII) NORTH BAJA PIPELINE EXPANSION PROJECT (NBX) RIVERSIDE AND IMPERIAL COUNTIES, CALIFORNIA. 2005-04-27





# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 84035

**EO Index:** 85071

**Key Quad:** Hedges (3211487)

**Element Code:** ARAAF01012

**Occurrence Number:** 878

**Occurrence Last Updated:** 2011-11-21

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:** **Federal:** Threatened

**Rare Plant Rank:**

**State:** Threatened

**Other Lists:** IUCN\_VU-Vulnerable

**CNDDB Element Ranks:** **Global:** G3

**State:** S2S3

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2001-04-04

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-04-04

**Occurrence Rank:** Good

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

1.5 MI WNW OF HEDGES, JUST NW OF CARGO MUCHACHO MTNS, ABOUT 17 MI NW OF YUMA.

**Detailed Location:**

MAPPED TO PROVIDED COORDINATES.

**Ecological:**

HABITAT CONSISTED OF OPEN CREOSOTE SCRUB HABITAT.

**Threats:**

POTENTIAL THREATS INCLUDE OFF-HIGHWAY VEHICLES.

**General:**

CARCASS OBSERVED 4 APR 2001.

**PLSS:** T15S, R20E, Sec. 03, NE (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3640982 E701289

**Latitude/Longitude:** 32.88853 / -114.84813

**Elevation (feet):** 540

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

MAL01F0180 MALO, L. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 84137  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 906

**EO Index:** 85165  
**Element Code:** ARAAF01012  
**Occurrence Last Updated:** 2011-11-04

**Scientific Name:** *Gopherus agassizii*

**Common Name:** desert tortoise

**Listing Status:**       **Federal:** Threatened  
                               **State:** Threatened  
**CNDDB Element Ranks:** **Global:** G3  
                                   **State:** S2S3

**Rare Plant Rank:**  
**Other Lists:** IUCN\_VU-Vulnerable

**General Habitat:**

MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.

**Micro Habitat:**

REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LARGE ANNUAL WILDFLOWER BLOOMS PREFERRED.

**Last Date Observed:** 2001-04-04  
**Last Survey Date:** 2001-04-04  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 2 MI N OF OGILBY, 3.5 MI ESE OF CACTUS, W OF CARGO MUCHACHO MTNS.

**Detailed Location:**  
 MAPPED TO PROVIDED COORDINATES.

**Ecological:**  
 HABITAT CONSISTED OF CREOSOTE SCRUB WITH AMBROSIA.

**Threats:**  
 POTENTIAL THREATS INCLUDED ORV USE.

**General:**  
 FRESH SCAT OBSERVED 4 APR 2001.

<b>PLSS:</b> T15S, R20E, Sec. 23, NW (S)	<b>Accuracy:</b> 80 meters	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3636478 E702069	<b>Latitude/Longitude:</b> 32.84778 / -114.84078	<b>Elevation (feet):</b> 450

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 MAL01F0246 MALO, L. - FIELD SURVEY FORM FOR GOPHERUS AGASSIZII 2001-04-04



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06562  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 32

**EO Index:** 14018  
**Element Code:** ARACF12040  
**Occurrence Last Updated:** 2003-01-17

**Scientific Name:** *Phrynosoma mcallii*

**Common Name:** flat-tailed horned lizard

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDDB Element Ranks:** **Global:** G3  
                                   **State:** S2

**Rare Plant Rank:**  
**Other Lists:**       BLM\_S-Sensitive  
                               CDFW\_SSC-Species of Special Concern  
                               IUCN\_NT-Near Threatened

**General Habitat:**

RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.

**Micro Habitat:**

CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMPERATURE EXTREMES; REQUIRES VEGETATIVE COVER AND ANTS.

**Last Date Observed:** 2002-06-09  
**Last Survey Date:** 2002-06-09  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Excellent  
**Trend:** Unknown

**Location:**

ABOUT 0.8 MILE SE OF I-8 AT OGILBY ROAD AND 4 MI S OF OGILBY.

**Detailed Location:**

1979: LOCATION GIVEN ONLY AS SECTION 24. 2002: SPECIFIC LOCATION GIVEN ON OBSERVATION ALONG PIPELINE.

**Ecological:**

CREOSOTE SCRUB, SANDY GRAVEL.

**Threats:**

OHV TRAFFIC AND PIPELINE CONSTRUCTION.

**General:**

1 LIZARD AND 3 SCATS OBSERVED ON 26 APR 1979, LOCATION GIVEN ONLY AS SECTION 24. 1 LIVE ADULT FOUND IN PIPELINE TRENCH AND MOVED 100 YDS WEST OF RIGHT-OF-WAY ON 9 JUN 2002.

**PLSS:** T16S, R20E, Sec. 24, SW (S)

**Accuracy:** 1/10 mile

**Area (acres):** 0

**UTM:** Zone-11 N3626132 E703835

**Latitude/Longitude:** 32.75420 / -114.82421

**Elevation (feet):** 240

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477)

**Sources:**

- HAS02F0004 HASHAGEN, K. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR PHRYNOSOMA MCALLII 2002-06-09
- TUR80R0001 TURNER, F. ET AL. - A SURVEY OF THE OCCURRENCE AND ABUNDANCE OF THE FLAT-TAILED HORNED LIZARD IN CALIFORNIA. LABORATORY OF NUCLEAR MEDICINE AND RADIATION BIOLOGY, UC LOS ANGELES 1980-01-25



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 23027  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 33

**EO Index:** 14019  
**Element Code:** ARACF12040  
**Occurrence Last Updated:** 2015-09-03

**Scientific Name:** *Phrynosoma mcallii*

**Common Name:** flat-tailed horned lizard

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDB Element Ranks:** **Global:** G3  
                               **State:** S2

**Rare Plant Rank:**  
**Other Lists:**       BLM\_S-Sensitive  
                               CDFW\_SSC-Species of Special Concern  
                               IUCN\_NT-Near Threatened

**General Habitat:**

RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.

**Micro Habitat:**

CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMPERATURE EXTREMES; REQUIRES VEGETATIVE COVER AND ANTS.

**Last Date Observed:** 2013-04-28  
**Last Survey Date:** 2013-04-28  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**

INTERSECTION OF INTERSTATE 8 AND BLYTHE OGILBY ROAD, PILOT KNOB MESA, EAST OF ALGODONES DUNES.

**Detailed Location:**

MAPPED TO INCLUDE 1966 LOCALITY, "3.9 MI S OGILBY," 1968 LOCALITY, "OGILBY RD NEAR US HWY 80" (NOW I-8), AND COORDINATES GIVEN FOR 2013 DETECTION. 1979 DETECTION LOCATION REPORTED ONLY AS SECTION 23 ALSO ATTRIBUTED HERE.

**Ecological:**

DUNE HABITAT.

**Threats:**

**General:**

1 COLLECTED 14 MAY 1966. 1 COLLECTED 8 SEP 1968. ONE OBSERVED 26 APR 1979. 1 OBSERVED ON 28 APR 2013.

<b>PLSS:</b> T16S, R20E, Sec. 23, NW (S)	<b>Accuracy:</b> 2/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3626458 E702395	<b>Latitude/Longitude:</b> 32.75740 / -114.83950	<b>Elevation (feet):</b> 220

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477)

**Sources:**

- HER16D0001    HERP, INC. - HERPETOLOGICAL EDUCATION AND RESEARCH PROJECT (HERP) DATABASE. FORMERLY A PROJECT OF THE NORTH AMERICAN FIELD HERPING ASSOCIATION 2016-10-11
- MCD66S0001    MCDIARMID, R. - MCDIARMID #66-17 -1 LACM #8862 COLLECTED FROM 3.9 MI S OGILBY 1966-05-14
- TUR80R0001    TURNER, F. ET AL. - A SURVEY OF THE OCCURRENCE AND ABUNDANCE OF THE FLAT-TAILED HORNED LIZARD IN CALIFORNIA. LABORATORY OF NUCLEAR MEDICINE AND RADIATION BIOLOGY, UC LOS ANGELES 1980-01-25
- WIE68S0001    WIEWANDT, T. - UAZ #28045 COLLECTED FROM OGILBY RD NEAR US HWY 80 1968-09-08



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06544  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 34

**EO Index:** 14020  
**Element Code:** ARACF12040  
**Occurrence Last Updated:** 2012-06-20

**Scientific Name:** *Phrynosoma mcallii*

**Common Name:** flat-tailed horned lizard

**Listing Status:**  
**Federal:** None  
**State:** None  
**CNDDDB Element Ranks:**  
**Global:** G3  
**State:** S2

**Rare Plant Rank:**  
**Other Lists:** BLM\_S-Sensitive  
 CDFW\_SSC-Species of Special Concern  
 IUCN\_NT-Near Threatened

**General Habitat:**

RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.

**Micro Habitat:**

CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMPERATURE EXTREMES; REQUIRES VEGETATIVE COVER AND ANTS.

**Last Date Observed:** 1979-04-27

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1980-06-20

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

PILOT KNOB MESA, ABOUT 1 MILE NW OF I-8 AT OGILBY RD (S34) AND 2 MILES SSW OF OGILBY.

**Detailed Location:**

SDNHM LOCALITIES: "OGILBY; 2 MILES SW OF." MAPPED TO PROVIDED TRS FROM 1979 "SECTION SEARCHES." VICINITY OF PLOT #7 IN 1980 SURVEY, ABOUT 1 MILE NW OF S34 AT I-8.

**Ecological:**

1980: CREOSOTE AND BURSAGE WERE DOMINANT PERENNIALS, IRONWOOD PRESENT. POGONOMYRMEX NESTS FOUND AT SITE. FRINGE-TOED LIZARDS ALSO OCCUR IN THIS AREA & HAVE SCAT INDISTINGUISHABLE FROM THAT OF FTHL; MORE RESEARCH IN THIS AREA IS NEEDED.

**Threats:**

**General:**

SDNHM #56513 & 56514 COLLECTED BY M. MCCOID ON 25 MAY 1975. 1 OBSERVED IN SEC 10, 1 OBSERVED IN SEC 15 ON 27 APR 1979. 0 FTHL AND 6 SCATS FOUND 17-20 JUN 1980.

<b>PLSS:</b> T16S, R20E, Sec. 10 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 1,296
<b>UTM:</b> Zone-11 N3628756 E701038	<b>Latitude/Longitude:</b> 32.77837 / -114.85348	<b>Elevation (feet):</b> 240

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477)

**Sources:**

- ALT80R0001 ALTMAN, E. ET AL. - AN EVALUATION OF THE RELATIVE ABUNDANCE OF THE FLAT-TAILED HORNED LIZARD (PHRYNOSOMA MCALLII) IN 10 AREAS IN SOUTHEASTERN CALIFORNIA 1980-09-XX
- HER09S0001 HERPNET - PRINTOUT OF PHRYNOSOMA MCALLII RECORDS FROM MULTIPLE MUSEUMS EXCEPT MVZ. 2009-12-09
- TUR80R0001 TURNER, F. ET AL. - A SURVEY OF THE OCCURRENCE AND ABUNDANCE OF THE FLAT-TAILED HORNED LIZARD IN CALIFORNIA. LABORATORY OF NUCLEAR MEDICINE AND RADIATION BIOLOGY, UC LOS ANGELES 1980-01-25



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06564  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 39

**EO Index:** 22417  
**Element Code:** ARACF12040  
**Occurrence Last Updated:** 2012-09-26

**Scientific Name:** *Phrynosoma mcallii*

**Common Name:** flat-tailed horned lizard

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G3  
                                   **State:**     S2

**Rare Plant Rank:**  
**Other Lists:**       BLM\_S-Sensitive  
                           CDFW\_SSC-Species of Special Concern  
                           IUCN\_NT-Near Threatened

**General Habitat:**

RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.

**Micro Habitat:**

CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMPERATURE EXTREMES; REQUIRES VEGETATIVE COVER AND ANTS.

**Last Date Observed:** 1947-07-26  
**Last Survey Date:** 1947-07-26  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 ALONG I-8, ABOUT 2 MILES W OF FELICITY AND 5 MILES SSE OF OGILBY.

**Detailed Location:**  
 COULD NOT LOCATE PROVIDED LOCALITY "SPRINGERS." MAPPED TO TRS GIVEN IN BLM'S COMPILATION OF MUSEUM SPECIMENS (BLM80S0020).

**Ecological:**

**Threats:**  
**General:**  
 SDMNH SPECIMEN #38521 COLLECTED BY CHARLES SHAW ON 26 JUL 1947.

<b>PLSS:</b> T16S, R21E, Sec. 19, NW (S)	<b>Accuracy:</b> 2/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3626155 E705959	<b>Latitude/Longitude:</b> 32.75401 / -114.80155	<b>Elevation (feet):</b> 253

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Grays Well NE (3211467), Ogilby (3211477)
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**Sources:**  
 BLM80S0020 BUREAU OF LAND MANAGEMENT - DESERT PLAN STAFF - COMPILATION OF HISTORIC MUSEUM SPECIMEN INFORMATION FOR PHRYNOSOMA MCALLII, COLLECTED DURING THE PREPARATION OF "THE CALIFORNIA DESERT PLAN" 1980-XX-XX  
 HER09S0001 HERPNET - PRINTOUT OF PHRYNOSOMA MCALLII RECORDS FROM MULTIPLE MUSEUMS EXCEPT MVZ. 2009-12-09



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 39690

**EO Index:** 34692

**Key Quad:** Grays Well NE (3211467)

**Element Code:** ARACF12040

**Occurrence Number:** 79

**Occurrence Last Updated:** 1998-09-10

**Scientific Name:** *Phrynosoma mcallii*

**Common Name:** flat-tailed horned lizard

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**State:** None

**Other Lists:** BLM\_S-Sensitive  
CDFW\_SSC-Species of Special Concern  
IUCN\_NT-Near Threatened

**CNDDDB Element Ranks:** **Global:** G3

**State:** S2

**General Habitat:**

RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.

**Micro Habitat:**

CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMPERATURE EXTREMES; REQUIRES VEGETATIVE COVER AND ANTS.

**Last Date Observed:** 1984-05-17

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1984-05-17

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

WHERE HIGHWAY 8 CROSSES THE ALL AMERICAN CANAL (BM 196), SE TOWARD CALIFORNIA-MEXICO BORDER, 5 MILES NE OF GRAYS WELL.

**Detailed Location:**

SCAT FOUND ON NORTH SIDE OF CANAL FROM HIGHWAY CROSSING TO 3 MILES SOUTHEAST OF HIGHWAY 8.

**Ecological:**

MOST OF THE HABITAT ALONG THE PROPOSED CANAL ROUTE COULD CONTAIN LIZARDS EXCEPT WETLAND/RIPARIAN AREA BETWEEN DROPS 3 & 4, & ALGODONES DUNES (BETWEEN SEGMENT MARKERS 7 TO 11).

**Threats:**

**General:**

ABUNDANCE INDEX OF LIZARDS WAS DETERMINED PER SECTION BY COUNTING SCAT.

**PLSS:** T16S, R20E, Sec. 52 (S)

**Accuracy:** non-specific area

**Area (acres):** 193

**UTM:** Zone-11 N3624577 E701707

**Latitude/Longitude:** 32.74057 / -114.84725

**Elevation (feet):** 200

**County Summary:**

**Quad Summary:**

Imperial

Grays Well NE (3211467), Ogilby (3211477)

**Sources:**

ROR84R0001 RORABAUGH, J. (U.S. BUREAU OF RECLAMATION) - AN EVALUATION OF FLAT-TAILED HORNED LIZARD (PHRYNOSOMA MCALLII) HABITAT QUALITY ALONG 40.9 KM (25.4 MI) OF THE PROPOSED ALL-AMERICAN CANAL ROUTE IN IMPERIAL COUNTY, CALIFORNIA 1984-06-XX



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 49935  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 89

**EO Index:** 49935  
**Element Code:** ARACF12040  
**Occurrence Last Updated:** 2015-09-03

**Scientific Name:** *Phrynosoma mcallii*

**Common Name:** flat-tailed horned lizard

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G3  
                                   **State:**     S2

**Rare Plant Rank:**  
**Other Lists:**       BLM\_S-Sensitive  
                               CDFW\_SSC-Species of Special Concern  
                               IUCN\_NT-Near Threatened

**General Habitat:**

RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.

**Micro Habitat:**

CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMPERATURE EXTREMES; REQUIRES VEGETATIVE COVER AND ANTS.

**Last Date Observed:** 2002-05-29  
**Last Survey Date:** 2002-05-29  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Excellent  
**Trend:** Unknown

**Location:**  
 0.5 MILE ESE OF THE JUNCTION OF INTERSTATE 8 AND BLYTHE OGILBY ROAD, EAST SIDE OF ALGODONES DUNES.

**Detailed Location:**

**Ecological:**  
 CREOSOTE SCRUB, SANDY GRAVEL, FLAT.

**Threats:**  
 PIPELINE CONSTRUCTION, SURROUNDING USE IS DESERT RECREATION.

**General:**  
 ONE ADULT KILLED BY CONSTRUCTION EQUIPMENT 29 MAY 2002.

<b>PLSS:</b> T16S, R20E, Sec. 23, NE (S)	<b>Accuracy:</b> 1/10 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3626463 E703430	<b>Latitude/Longitude:</b> 32.75725 / -114.82845	<b>Elevation (feet):</b> 220

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 NIE02F0002 NIEUWEHUIZEN, I. (FOSTER WHEELER ENVIRONMENTAL) - FIELD SURVEY FORM FOR PHRYNOSOMA MCALLII 2002-05-29





**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 06540  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 5

**EO Index:** 22762  
**Element Code:** IICOL30060  
**Occurrence Last Updated:** 1989-08-11

**Scientific Name:** *Anomala hardyorum*

**Common Name:** Hardy's dune beetle

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G1  
                                   **State:**     S1

**Rare Plant Rank:**  
**Other Lists:**

**General Habitat:**

KNOWN ONLY FROM CREOSOTE BUSH SCRUB HABITAT IN THE VICINITY OF THE ALGODONES DUNES, IMPERIAL COUNTY.

**Micro Habitat:**

ADULTS ACTIVE AT DUSK, GENERALLY ON NORTH OR EAST SLIP FACES OF DUNES.

**Last Date Observed:** 1979-04-12  
**Last Survey Date:** 1979-04-12  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 ALGODONES DUNE SYSTEM, 4 MI SSW OF OGILBY.

**Detailed Location:**

**Ecological:**

NO KNOWN HOST PLANT. ADULTS HAVE BEEN SIFTED FROM SAND BENEATH A WIDE VARIETY OF PLANTS. NOTHING IS KNOWN OF THE IMMATURE STAGES. ADULTS ARE ACTIVE AT DUSK, GENERALLY ON NORTH- OR EAST-FACING SLIP FACES.

**Threats:**

**General:**

<b>PLSS:</b> T16S, R20E, Sec. 22, NW (S)	<b>Accuracy:</b> 1/5 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3626372 E700427	<b>Latitude/Longitude:</b> 32.75699 / -114.86051	<b>Elevation (feet):</b> 205

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477)

**Sources:**  
 HAR79R0001 HARDY, A. ET AL. (CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE) - AN INVENTORY OF SELECTED COLEOPTERA FROM THE ALGODONES DUNES. REPORT TO BLM, CONTRACT CA-060-CT 8-68. 1979-XX-XX



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Map Index Number:</b>	B5349	<b>EO Index:</b>	118239
<b>Key Quad:</b>	Glamis (3211581)	<b>Element Code:</b>	IICOL33020
<b>Occurrence Number:</b>	1	<b>Occurrence Last Updated:</b>	2020-05-01

<b>Scientific Name:</b>	<i>Cyclocephala wandae</i>	<b>Common Name:</b>	Wandae dune beetle
<b>Listing Status:</b>	<b>Federal:</b> None <b>State:</b> None	<b>Rare Plant Rank:</b>	
<b>CNDDDB Element Ranks:</b>	<b>Global:</b> G1G2 <b>State:</b> S1S2	<b>Other Lists:</b>	

<b>General Habitat:</b>	<b>Micro Habitat:</b>
ENDEMIC TO THE ALGODONES DUNES IN IMPERIAL COUNTY.	<input type="checkbox"/>

<b>Last Date Observed:</b>	1972-09-XX	<b>Occurrence Type:</b>	Natural/Native occurrence
<b>Last Survey Date:</b>	1972-09-XX	<b>Occurrence Rank:</b>	Unknown
<b>Owner/Manager:</b>	BLM	<b>Trend:</b>	Unknown
<b>Presence:</b>	Presumed Extant		

**Location:**  
 ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**  
 MAPPED NON-SPECIFICALLY ACROSS THE EXTENT OF THE ALGODONES DUNES.

**Ecological:**

**Threats:**

**General:**

SPECIMENS WERE COLLECTED USING BLACKLIGHTS IN 1971 AND 1972.

<b>PLSS:</b>	T14S, R18E, Sec. 53 (S)	<b>Accuracy:</b>	non-specific area	<b>Area (acres):</b>	148,089
<b>UTM:</b>	Zone-11 N3642497 E681857	<b>Latitude/Longitude:</b>	32.90558 / -115.05548	<b>Elevation (feet):</b>	250

**County Summary:**

Imperial

**Quad Summary:**

Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

AND79R0001	ANDREWS, F. ET AL. (CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE) - THE COLEOPTEROUS FAUNA OF SELECTED CALIFORNIA SAND DUNES. REPORT TO BLM. 1979-03-15
HAR74A0001	HARDY, A. (CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE) - A NEW SPECIES OF CYCLOCEPHALA LATREILLE FROM CALIFORNIA SAND DUNES (COLEOPTERA: SCARABAEIDAE). THE PAN-PACIFIC ENTOMOLOGIST 50: 160-161. 1974-04-XX
KIM07U0001	KIMSEY, L. (UNIVERSITY OF CALIFORNIA, DAVIS) - COMPILED INVERTEBRATE COLLECTION RECORDS NEAR ALGODONES DUNES FROM VARIOUS INSTITUTIONS (UCB, UCD, UCR, USU, USNM, CAS, MCZ, LAMNH, AMNH, CDFA). 2007-04-XX
WAS72S0001	WASBAUER, M. & A. HARDY - CAS #11941 & USNM #11065335 & CMN #17140 COLLECTED 3 MI NW OF GLAMIS 1972-09-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06540  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 15

**EO Index:** 22697  
**Element Code:** IICOL37020  
**Occurrence Last Updated:** 1989-08-11

**Scientific Name:** *Pseudocotalpa andrewsi*

**Common Name:** Andrew's dune scarab beetle

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G1  
                                   **State:**     S1

**Rare Plant Rank:**  
**Other Lists:**

**General Habitat:**

ENDEMIC TO THE CREOSOTE BUSH SCRUB HABITAT OF ALGODONES DUNES, NW OF GLAMIS, IMPERIAL COUNTY; 100-400 FT ELEVATION.

**Micro Habitat:**

INHABITS BOTH SURFACE AND SUB-SURFACE OF SAND, UTILIZING THE WET SAND INTERFACE AS PROTECTION FROM THE HEAT OF THE DAY.

**Last Date Observed:** 1979-04-12

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1979-04-12

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

ALGODONES DUNE SYSTEM, 4 MI SSW OF OGILBY.

**Detailed Location:**

ENDEMIC TO THE ALGODONES DUNES.

**Ecological:**

FLIGHT ACTIVITY 10-30 MINUTES AFTER SUNSET, DIGGING IN 1-2 MINUTES AFTER LANDING, DESCENDING TO THE WET SAND INTERFACE (USUALLY 5-8 CM, UP TO 30 CM). HOST PLANT UNKNOWN, ALTHOUGH MOST ADULTS SWARM AROUND CREOSOTE.

**Threats:**

OHVS. THE DUNES SOUTH OF HWY 78 ARE THE IMPERIAL SAND DUNES OHVA.

**General:**

ADULTS SWARM FROM APRIL TO MID-MAY.

**PLSS:** T16S, R20E, Sec. 22 (S)

**Accuracy:** 1/5 mile

**Area (acres):** 0

**UTM:** Zone-11 N3626372 E700427

**Latitude/Longitude:** 32.75699 / -114.86051

**Elevation (feet):** 200

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477)

**Sources:**

HAR79R0001 HARDY, A. ET AL. (CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE) - AN INVENTORY OF SELECTED COLEOPTERA FROM THE ALGODONES DUNES. REPORT TO BLM, CONTRACT CA-060-CT 8-68. 1979-XX-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



<b>Map Index Number:</b> B5349	<b>EO Index:</b> 118258
<b>Key Quad:</b> Glamis (3211581)	<b>Element Code:</b> IIDIP07040
<b>Occurrence Number:</b> 1	<b>Occurrence Last Updated:</b> 2020-05-01

<b>Scientific Name:</b> <i>Efferia macroxipha</i>	<b>Common Name:</b> Glamis robberfly
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> None	<b>Other Lists:</b>
<b>CNDDDB Element Ranks:</b>	
<b>Global:</b> G1G2	
<b>State:</b> S1S2	

<b>General Habitat:</b> ENDEMIC TO THE ALGODONES DUNES IN IMPERIAL COUNTY.	<b>Micro Habitat:</b> <input type="checkbox"/>
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<b>Last Date Observed:</b> 1988-09-12	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1988-09-12	<b>Occurrence Rank:</b> Unknown
<b>Owner/Manager:</b> BLM	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**  
MAPPED NON-SPECIFICALLY ACROSS THE EXTENT OF THE ALGODONES DUNES.

**Ecological:**

**Threats:**

**General:**

SPECIMENS WERE COLLECTED IN THIS VICINITY IN 1986, 1987, AND 1988.

<b>PLSS:</b> T14S, R18E, Sec. 53 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 148,089
<b>UTM:</b> Zone-11 N3642497 E681857	<b>Latitude/Longitude:</b> 32.90558 / -115.05548	<b>Elevation (feet):</b> 250

**County Summary:**

Imperial

**Quad Summary:**

Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

FOR88S0001	FORBES, G. - NMSU #48873, 48903, 48905, 48906, 48908-48911, 48914, 48915, 48919, 48922, 48925, 48928, 48929, 48931 & 48933 COLLECTED FROM ALGODONES DUNES, RT 78, 0.8 MI W GECKO RD 1988-09-12
KIM07U0001	KIMSEY, L. (UNIVERSITY OF CALIFORNIA, DAVIS) - COMPILED INVERTEBRATE COLLECTION RECORDS NEAR ALGODONES DUNES FROM VARIOUS INSTITUTIONS (UCB, UCD, UCR, USU, USNM, CAS, MCZ, LAMNH, AMNH, CDFA). 2007-04-XX
KIM17A0001	KIMSEY, L. ET AL. - INSECT BIODIVERSITY OF THE ALGODONES DUNES OF CALIFORNIA 2017-11-24
ROG86S0001	ROGERS, R. - CAS #16132 & NMSU #48932 COLLECTED FROM SAND DUNES, 2 MI W OF GLAMIS, HWY 78 1986-09-19
ROG87S0001	ROGERS, R. - NMSU #48916, 48918, 48926 & 48927 COLLECTED FROM GECKO CAMPGROUND RD, NEAR HWY 78 1987-09-12
ROG87S0002	ROGERS, R. - NMSU #48920 COLLECTED FROM GECKO CAMPGROUND RD, NEAR HWY 78 1987-09-21



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** B5349  
**Key Quad:** Glamis (3211581)  
**Occurrence Number:** 1

**EO Index:** 118240  
**Element Code:** IIDIP54020  
**Occurrence Last Updated:** 2020-04-28

**Scientific Name:** *Apiocera warneri*

**Common Name:** Glamis sand fly

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G1G2  
                                   **State:**     S1S2

**Rare Plant Rank:**  
**Other Lists:**

**General Habitat:**  
 ENDEMIC TO THE ALGODONES DUNES IN IMPERIAL COUNTY.

**Micro Habitat:**

**Last Date Observed:** 1982-09-15  
**Last Survey Date:** 1982-09-15  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**  
 MAPPED NON-SPECIFICALLY ACROSS THE EXTENT OF THE ALGODONES DUNES.

**Ecological:**

**Threats:**

**General:**

THIS SPECIES IS ONLY KNOWN FROM THE TYPE COLLECTIONS. THESE WERE MADE 1.5 MILES WEST OF GLAMIS AND 4 MILES NORTH OF GLAMIS ON 15 SEP 1982.

<b>PLSS:</b> T14S, R18E, Sec. 53 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 148,089
<b>UTM:</b> Zone-11 N3642497 E681857	<b>Latitude/Longitude:</b> 32.90558 / -115.05548	<b>Elevation (feet):</b> 250

**County Summary:**

Imperial

**Quad Summary:**

Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

CAZ85A0002	CAZIER, M. - NEW SPECIES AND NOTES ON FLIES BELONGING TO THE GENUS APIOCERA (DIPTERA, APIOCERIDAE). AMERICAN MUSEUM NOVITATES 2837: 1-28. 1985-11-14
KIM07U0001	KIMSEY, L. (UNIVERSITY OF CALIFORNIA, DAVIS) - COMPILED INVERTEBRATE COLLECTION RECORDS NEAR ALGODONES DUNES FROM VARIOUS INSTITUTIONS (UCB, UCD, UCR, USU, USNM, CAS, MCZ, LAMNH, AMNH, CDFA). 2007-04-XX



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Map Index Number:</b>	B5349	<b>EO Index:</b>	118355
<b>Key Quad:</b>	Glamis (3211581)	<b>Element Code:</b>	IIHYM01130
<b>Occurrence Number:</b>	1	<b>Occurrence Last Updated:</b>	2020-05-06

<b>Scientific Name:</b>	<i>Perdita algodones</i>	<b>Common Name:</b>	Algodones perdita
<b>Listing Status:</b>	<b>Federal:</b> None <b>State:</b> None	<b>Rare Plant Rank:</b>	
<b>CNDDDB Element Ranks:</b>	<b>Global:</b> G1G2 <b>State:</b> S1S2	<b>Other Lists:</b>	

<b>General Habitat:</b>	<b>Micro Habitat:</b>
ENDEMIC TO THE ALGODONES DUNES IN IMPERIAL COUNTY.	<input type="checkbox"/>

<b>Last Date Observed:</b>	1972-04-09	<b>Occurrence Type:</b>	Natural/Native occurrence
<b>Last Survey Date:</b>	1972-04-09	<b>Occurrence Rank:</b>	Unknown
<b>Owner/Manager:</b>	BLM	<b>Trend:</b>	Unknown
<b>Presence:</b>	Presumed Extant		

**Location:**  
 ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**  
 MAPPED NON-SPECIFICALLY ACROSS THE EXTENT OF THE ALGODONES DUNES.

**Ecological:**

**Threats:**

**General:**  
 COLLECTIONS WERE MADE FROM THIS VICINITY IN 1965, 1968, AND 1972.

<b>PLSS:</b>	T14S, R18E, Sec. 53 (S)	<b>Accuracy:</b>	non-specific area	<b>Area (acres):</b>	148,089
<b>UTM:</b>	Zone-11 N3642497 E681857	<b>Latitude/Longitude:</b>	32.90558 / -115.05548	<b>Elevation (feet):</b>	250

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

HAR72S0005	HARDY, A. - UCRC #165955 COLLECTED 3 MILES NW OF GLAMIS, KIPF ROAD, ALGODONES DUNES 1972-04-09
IRW65S0001	IRWIN, M. - UCRC #165956 COLLECTED 1 MILE WEST OF GLAMIS 1965-04-25
KIM07U0001	KIMSEY, L. (UNIVERSITY OF CALIFORNIA, DAVIS) - COMPILED INVERTEBRATE COLLECTION RECORDS NEAR ALGODONES DUNES FROM VARIOUS INSTITUTIONS (UCB, UCD, UCR, USU, USNM, CAS, MCZ, LAMNH, AMNH, CDFW). 2007-04-XX
RAU68S0001	RAUCH, P. - CAS #14416 COLLECTED 3.5 MILES NW OF GLAMIS 1968-04-13
TIM80A0001	TIMBERLAKE, P. - SUPPLEMENTARY STUDIES ON THE SYSTEMATICS OF THE GENUS PERDITA (HYMENOPTERA, ANDRENIDAE), PART II. UNIVERSITY OF CALIFORNIA PUBLICATIONS IN ENTOMOLOGY 85. 1980-05-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



<b>Map Index Number:</b> B5349	<b>EO Index:</b> 119180	
<b>Key Quad:</b> Glamis (3211581)	<b>Element Code:</b> IHHYM01140	
<b>Occurrence Number:</b> 1	<b>Occurrence Last Updated:</b> 2020-09-28	

<b>Scientific Name:</b> <i>Perdita frontalis</i>	<b>Common Name:</b> Imperial Perdita
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	
<b>State:</b> None	<b>Other Lists:</b>
<b>CNDDDB Element Ranks:</b>	
<b>Global:</b> G1G2	
<b>State:</b> S1S2	

<b>General Habitat:</b>	<b>Micro Habitat:</b>
<input type="checkbox"/>	<input type="checkbox"/>

<b>Last Date Observed:</b> 2014-05-10	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 2014-05-10	<b>Occurrence Rank:</b> Unknown
<b>Owner/Manager:</b> BLM	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**

VARIOUS COLLECTION LOCALITIES DESCRIBED AS FROM GLAMIS TO 5.7 MILES WEST OF GLAMIS. MAPPED NON-SPECIFICALLY ACROSS THE EXTENT OF THE ALGODONES DUNES.

**Ecological:**

MOST COLLECTIONS WERE MADE FROM FLOWERS OF TIQUILA PLICATA.

**Threats:**

**General:**

COLLECTIONS WERE MADE IN 1960, 1962, 2012, 2013, AND 2014.

<b>PLSS:</b> T14S, R18E, Sec. 53 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 148,089
<b>UTM:</b> Zone-11 N3642497 E681857	<b>Latitude/Longitude:</b> 32.90558 / -115.05548	<b>Elevation (feet):</b> 250

**County Summary:**

Imperial

**Quad Summary:**

Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

- DIC60S0004 DICKSON, R. - CAS #14531 COLLECTED FROM SAND DUNES, 5.7 MILES WEST OF GLAMIS, IMPERIAL CO, CA, ON ERIOGONUM DESERTICOLA 1960-07-25
- DIC60S0005 DICKSON, R. - UCRC #173923 COLLECTED E BRAWLEY, ON ERIOGONUM DESERTICOLA 1960-06-28
- DIC60S0006 DICKSON, R. - UCRC #173924 COLLECTED FROM SAND DUNES S OF BRAWLEY, ON COLDENIA PLICATA 1960-07-11
- KIM07U0001 KIMSEY, L. (UNIVERSITY OF CALIFORNIA, DAVIS) - COMPILED INVERTEBRATE COLLECTION RECORDS NEAR ALGODONES DUNES FROM VARIOUS INSTITUTIONS (UCB, UCD, UCR, USU, USNM, CAS, MCZ, LAMNH, AMNH, CDFA). 2007-04-XX
- POR16A0001 PORTMAN, Z. ET AL. - TAXONOMIC REVISION OF PERDITA SUBGENUS HETEROPERDITA TIMBERLAKE (HYMENOPTERA: ANDREDIDAE), WITH DESCRIPTIONS OF TWO ANT-LIKE MALES. ZOOTAXA 4214(1): 1-97. 2016-XX-XX
- TIM68A0001 TIMBERLAKE, P. - A REVISIONAL STUDY OF THE BEES OF THE GENUS PERDITA F. SMITH, WITH SPECIAL REFERENCE TO THE FAUNA OF THE PACIFIC COAST. PART VII. UNIVERSITY OF CA PUBLICATIONS IN ENTOMOLOGY 49. 1968-XX-XX
- YAN20U0001 YANEGA, D. (UNIVERSITY OF CALIFORNIA, RIVERSIDE) - EMAIL REGARDING PERDITA FRONTALIS COLLECTION LOCALITES 2020-09-25



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** B5349  
**Key Quad:** Glamis (3211581)  
**Occurrence Number:** 2

**EO Index:** 119019  
**Element Code:** IHHYM01840  
**Occurrence Last Updated:** 2020-08-10

**Scientific Name:** *Perdita stephanomeriae*  
**Listing Status:** **Federal:** None  
**State:** None  
**CNDDDB Element Ranks:** **Global:** GNR  
**State:** S1S2

**Common Name:** a miner bee  
**Rare Plant Rank:**  
**Other Lists:**

**General Habitat:**

**Micro Habitat:**

**Last Date Observed:** 1965-06-13  
**Last Survey Date:** 1965-06-13  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**

ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**

COLLECTION LOCALITY GIVEN ONLY AS "GLAMIS." MAPPED BY CNDDDB NON-SPECIFICALLY ACROSS THE EXTENT OF THE GLAMIS DUNES, ALSO KNOWN AS THE ALGODONES DUNES.

**Ecological:**

**Threats:**

**General:**

COLLECTED ON 13 JUN 1965. SPECIMENS ORIGINALLY USED TO DESCRIBE THE SPECIES PERDITA GLAMIS, BUT THAT SPECIES WAS LATER LUMPED INTO PERDITA STEPHANOMERIAE.

**PLSS:** T14S, R18E, Sec. 53 (S)  
**UTM:** Zone-11 N3642497 E681857

**Accuracy:** non-specific area  
**Latitude/Longitude:** 32.90558 / -115.05548

**Area (acres):** 148,089  
**Elevation (feet):** 250

**County Summary:**

Imperial

**Quad Summary:**

Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

- KIM07U0001 KIMSEY, L. (UNIVERSITY OF CALIFORNIA, DAVIS) - COMPILED INVERTEBRATE COLLECTION RECORDS NEAR ALGODONES DUNES FROM VARIOUS INSTITUTIONS (UCB, UCD, UCR, USU, USNM, CAS, MCZ, LAMNH, AMNH, CDFA). 2007-04-XX
- POR17A0001 PORTMAN, Z. & T. GRISWOLD - REVIEW OF PERDITA SUBGENUS PROCOCKERELLIA TIMBERLAKE (HYMENOPTERA, ANDRENIDAE) AND THE FIRST PERDITA GYNANDROMORPH. ZOOKEYS 712: 87-111. 2017-XX-XX
- TIM80A0001 TIMBERLAKE, P. - SUPPLEMENTARY STUDIES ON THE SYSTEMATICS OF THE GENUS PERDITA (HYMENOPTERA, ANDRENIDAE), PART II. UNIVERSITY OF CALIFORNIA PUBLICATIONS IN ENTOMOLOGY 85. 1980-05-XX
- WAL65S0004 WALLACE, G. - UCRC #174303 & CAS #14544 COLLECTED FROM GLAMIS 1965-06-13





**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** B5349  
**Key Quad:** Glamis (3211581)  
**Occurrence Number:** 1

**EO Index:** 118339  
**Element Code:** IHHYM90010  
**Occurrence Last Updated:** 2020-05-05

**Scientific Name:** *Microbembex elegans*  
**Listing Status:** **Federal:** None  
**State:** None  
**CNDDDB Element Ranks:** **Global:** G1G2  
**State:** S1S2

**Common Name:** Algodones elegant sand wasp  
**Rare Plant Rank:**  
**Other Lists:**

**General Habitat:**  
 ENDEMIC TO THE ALGODONES DUNES IN IMPERIAL COUNTY

**Micro Habitat:**

**Last Date Observed:** 1988-10-10  
**Last Survey Date:** 1988-10-10  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**  
 MAPPED NON-SPECIFICALLY ACROSS THE EXTENT OF THE ALGODONES DUNES.

**Ecological:**  
 FOUND ONLY AROUND THE BASES OF SHRUBS WHERE DETRITUS COLLECTS ON ACTIVE SLIP FACES OF THE DUNES.

**Threats:**  
**General:**  
 THIS SPECIES IS ONLY KNOWN FROM THE TYPE COLLECTIONS. THESE WERE MADE FROM GLAMIS DUNES, 1 MILE WEST OF GLAMIS IN SEP 1987 AND OCT 1988, AND ALSO 4 MILES SOUTH OF OGILBY IN OCT 1988.

<b>PLSS:</b> T14S, R18E, Sec. 53 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 148,089
<b>UTM:</b> Zone-11 N3642497 E681857	<b>Latitude/Longitude:</b> 32.90558 / -115.05548	<b>Elevation (feet):</b> 250

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)
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**Sources:**

GRI96A0001	GRISWOLD, T. (UTAH STATE UNIVERSITY) - A NEW MICROBEMBEX ENDEMIC TO THE ALGODONES DUNES, CALIFORNIA (HYMENOPTERA: SPHECIDAE). PAN-PACIFIC ENTOMOLOGIST 72(3): 142-144. 1996-XX-XX
KIM07U0001	KIMSEY, L. (UNIVERSITY OF CALIFORNIA, DAVIS) - COMPILED INVERTEBRATE COLLECTION RECORDS NEAR ALGODONES DUNES FROM VARIOUS INSTITUTIONS (UCB, UCD, UCR, USU, USNM, CAS, MCZ, LAMNH, AMNH, CDFA). 2007-04-XX



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** B5349  
**Key Quad:** Glamis (3211581)  
**Occurrence Number:** 1

**EO Index:** 118271  
**Element Code:** IHHYMB010  
**Occurrence Last Updated:** 2020-05-04

**Scientific Name:** *Euparagia unidentata*

**Common Name:** Algodones euparagia

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G1G2  
                               **State:**     S1S2

**Rare Plant Rank:**  
**Other Lists:**

**General Habitat:**

**Micro Habitat:**

**Last Date Observed:** 2008-06-03  
**Last Survey Date:** 2008-06-03  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**

ALGODONES DUNES, SE OF THE SALTON SEA.

**Detailed Location:**

MAPPED NON-SPECIFICALLY ACROSS THE EXTENT OF THE ALGODONES DUNES.

**Ecological:**

**Threats:**

**General:**

COLLECTIONS WERE MADE FROM THIS VICINITY IN 1960 AND 2008.

**PLSS:** T14S, R18E, Sec. 53 (S)  
**UTM:** Zone-11 N3642497 E681857

**Accuracy:** non-specific area  
**Latitude/Longitude:** 32.90558 / -115.05548

**Area (acres):** 148,089  
**Elevation (feet):** 250

**County Summary:**

Imperial

**Quad Summary:**

Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

- ANONDS0367 ANONYMOUS - AMNH #178751 COLLECTED FROM GECKO RD S OF ALGODONES DUNES WILDERNESS AREA XXXX-XX-XX
- CAR09A0001 CARPENTER, J. & L. KIMSEY - THE GENUS EUPARAGIA CRESSON (HYMENOPTERA: VESPIDAE; EUPARAGIINAE). AMERICAN MUSEUM NOVITATES 3643: 1-11. 2009-03-31
- DIC60S0001 DICKSON, R. - UCRC #71283 & 71284 COLLECTED FROM ERIOGONUM DESERTICOLA AT SAND DUNES EAST OF BRAWLEY 1960-06-13
- DIC60S0002 DICKSON, R. - UCRC #71288 COLLECTED FROM ERIOGONUM DESERTICOLA 7 MILES WEST OF GLAMIS 1960-07-25
- DIC60S0003 DICKSON, R. - UCRC #71285, 71286, 71287 & 71289 COLLECTED FROM COLDENIA PPLICATA 2 MILES WEST OF GLAMIS 1960-07-25
- KIM17A0001 KIMSEY, L. ET AL. - INSECT BIODIVERSITY OF THE ALGODONES DUNES OF CALIFORNIA 2017-11-24



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 77872  
**Key Quad:** Glamis (3211581)  
**Occurrence Number:** 1

**EO Index:** 6544  
**Element Code:** PDAST6T012  
**Occurrence Last Updated:** 2014-05-28

**Scientific Name:** *Palafoxia arida* var. *gigantea*  
**Listing Status:** **Federal:** None  
**State:** None  
**CNDDB Element Ranks:** **Global:** G5T3?  
**State:** S2

**Common Name:** giant spanish-needle  
**Rare Plant Rank:** 1B.3  
**Other Lists:** BLM\_S-Sensitive  
 SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 DESERT DUNES.

**Micro Habitat:**  
 ACTIVE AND STABLE DUNE AREAS; ASSOCIATED WITH AMMOBROMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ETC. 20-95 M.

**Last Date Observed:** 2013-04-20  
**Last Survey Date:** 2013-04-20  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 ALGODONES DUNES.

**Detailed Location:**  
 SCATTERED THROUGHOUT THE DUNES FROM SOUTHERN PACIFIC RR TRACKS WEST TO THE COACHELLA CANAL AND FROM MAMMOTH WASH SOUTH TO THE CA/MEXICO BORDER. MAPPED BY CNDDB USING MULTIPLE MAP SOURCES.

**Ecological:**  
 SAND DUNES WITHIN DESERT PSAMMOPHYTIC SCRUB (STABILIZED AND PARTIALLY STABILIZED DESERT DUNES). ASSOCIATES INCLUDE SEVERAL RARE PLANTS: AMMOBROMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ERIOGONUM DESERTICOLA, PILOSTYLES THURBERI, ETC.

**Threats:**  
 ORV USE.

**General:**  
 >3,000 PLANTS SEEN ALONG ALL AMERICAN CANAL IN 1993. 34,649 IN 1998; 1,458 IN 1999; 13,933 IN 2000. 25 PLANTS ALONG HWY 78 JUST E OF GECKO RD IN 2009. 80+ PLANTS N OF HWY 78 ~1 MI NW OF OSBORNE LOOKOUT IN 2013. INCL FRMR EOS 2-49, 51, 52.

**PLSS:** T14S, R18E, Sec. 51 (S)      **Accuracy:** specific area      **Area (acres):** 118,017  
**UTM:** Zone-11 N3644086 E681072      **Latitude/Longitude:** 32.92004 / -115.06355      **Elevation (feet):**

**County Summary:**  
 Imperial, Mexico

**Quad Summary:**  
 Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

ALE41S0030	ALEXANDER, A. & L. KELLOGG - ALEXANDER #1936 UC #669289 POM #115609, GH #427281 1941-03-14
AND09S0005	ANDRE, J. & T. LA DOUX - ANDRE #9871 UCR #211316, RSA #760079, GMDRC #2967 (CITED IN AND10D0001) 2009-02-26
AND10D0001	ANDRE, J. - EXCEL TABLE OF MULTIPLE PLANT COLLECTIONS 2010-01-18
ANO69S0003	ANONYMOUS - ANONYMOUS #11 UCR #16704 1969-05-24
BAR67S0001	BARR, R. - BARR #67-128 UA (AS CITED IN WAR87R0001) 1967-04-16
BEL13S0009	BELL, D. ET AL. - BELL #4823 RSA #806857 2013-04-20
BEL13U0002	BELL, D. - OBSERVATIONS OF RARE PLANT TAXA FROM DESERT CNPS RARE PLANT TREASURE HUNT SURVEYS, SPRING 2013 2013-03-XX
BEN33S0011	BENSON, L. - BENSON #4223 RSA #431136 1933-04-01



**Occurrence Report**  
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BLM00R0001 BLM-BUREAU OF LAND MANAGEMENT - MONITORING OF SPECIAL STATUS PLANTS IN THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA: RESULTS OF 1998 MONITORING AND COMPARISON WITH THE DATA FROM WESTECS 1977 MONITORING STUDY 2000-11-XX

BLM01R0001 BLM-BUREAU OF LAND MANAGEMENT - MONITORING OF SPECIAL STATUS PLANTS IN THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA: 1977, 1998, 1999, AND 2000 2001-06-XX

BLM77F0001 BLM-BUREAU OF LAND MANAGEMENT - FIELD SURVEY FORM FOR PALAFOXIA ARIDA VAR. GIGANTEA 1977-10-13

BLM78F0001 SEARS, W. - BLM (S-II) FIELD SURVEY FORM FOR PALAFOXIA ARIDA VAR. GIGANTEA 1978-XX-XX

BLM86R0002 BLM-BUREAU OF LAND MANAGEMENT - PROPOSED 1985 PLAN AMENDMENTS VOL. 2 1986-01-XX

BOW70S0001 BOWERS, D. - BOWERS #1608 RSA #786954 1970-12-29

BOW81S0001 BOWERS, J. - BOWERS #2076 UA (AS CITED IN WAR87R0001) 1981-03-14

BOW83S0003 BOWERS, J. & S. MCLAUGHLIN - BOWERS #2785 UCR #46271 1983-11-12

BRO80S0003 BROWNELL, K. - BROWNELL #206 UCSB #36654 1980-05-17

CHM00R0001 CH2M HILL - IMPERIAL IRRIGATION DISTRICT (IID)/SAN DIEGO COUNTY WATER AUTHORITY (SDCWA) WATER CONSERVATION AND TRANSFER PROJECT EIR/EIS, SCOPING SUMMARY REPORT 2000-03-10

DAV79S0003 DAVIDSON, C. ET AL. - DAVIDSON #7742 HSU #82914 POM #363734 1979-04-28

DAV79S0004 DAVIDSON, C. ET AL. - DAVIDSON #7792 POM #363735 1979-04-28

DEF33S0002 DE FOREST, H. & J. REMPEL - DE FOREST #17695 RSA #363761 1933-04-10

DUN35S0005 DUNKLE, M. - DUNKLE #4586 POM #363736 1935-04-18

FER38S0002 FERRIS, R. & R. ROSSBACH - FERRIS #9588 UC #604962 POM #19546, GH #427279 1938-05-17

FUL59S0002 FULLER, T. - FULLER #3273 CDA #8432 1959-10-07

GIL28S0004 GILMAN, M. - GILMAN SN POM #145269 1928-04-XX

GOR80S0003 GORDON, P. - GORDON #630 UCSB #37387 1980-05-17

GRA78S0002 GRANGER, S. - GRANGER SN RSA #650937 1978-04-03

GUI08S0005 GUILLIAMS, C. & J. MARSHALL - GUILLIAMS #635 SDSU #18373 & #18392 2008-04-23

GUS83S0012 GUSTAFSON, R. & KEELEY - GUSTAFSON #2569 POM #363733 1983-05-06

HIG74S0001 HIGGINS, L. - HIGGINS #8507 ASU (AS CITED IN WAR87R0001) 1974-04-12

HIT66S0008 HITCHCOCK, C. - HITCHCOCK #24287 DAV #134877 1966-03-19

HOW64S0005 HOWE, D. - HOWE #3756 SD #60969 SDSU #369 1964-04-11

HOW80S0004 HOWE, D. - HOWE SN SD #128762 1980-04-14

HUN80S0001 HUNKINS, C. - HUNKINS #80030903, SEINET #2053908, DES #27249, DBG (CITED IN WAR87R0001) 1980-03-09

JEP27S0017 JEPSON, W. - JEPSON #11722 JEPS #34765 1927-04-15

JON31S0014 JONES, M. - JONES #28599 POM #188054 UC #479265 1931-09-24

JOR82S0002 JORGENSEN, J. - JORGENSEN #305 UCSB #39124 1982-03-24

KEL37S0001 KELLER, A. - KELLER SN RSA #603891 SD #17611 1937-05-31

KEL37S0002 KELLER, A. - KELLER SN SD #17612 1937-05-31

KEL41S0001 KELLOGG, L. ET AL. - KELLOGG ET AL. #1936 UA #189037 (AS CITED IN WAR87R0001) 1941-03-14

LAT77S0004 LATTING, J. - LATTING SN UC #1746487 UCR #115382, SEINET #238517, UTC #230538, DAV #134884 1977-12-11

MAC97S0005 MACKAY, P. - MACKAY #130 VVC #648 1997-03-01

MCG71S0001 MCGEHEE, R. - MCGEHEE #352 SJSU #11689 1971-02-13

MIN64S0002 MINNICH, J. - MINNICH #64-3-25-14 UCR 1964-03-25

MUN32S0027 MUNZ, P. & C. HITCHCOCK - MUNZ #12131 UC #495107 1932-04-05

NEL30S0001 NELSON, A. - NELSON #11161 DS #231258 1930-02-27

NEL36A0001 NELSON, A. - ROCKY MOUNTAIN HERBARIUM STUDIES IV. AMERICAN JOURNAL OF BOTANY 23: 265-271. 1936-XX-XX

NIE77U0021 NIEHAUS, T. - CNPS STATUS REPORT 1977-XX-XX

PEI27S0010 PEIRSON, F. - PEIRSON #7198 RSA #92214 SD #87849 1927-04-15

PIT98S0003 PITZER, B. - PITZER #3477 SD #144029 UCR #102678 1998-02-02

POR03S0027 PORTER, J. - PORTER #13491 RSA #767601 2003-03-04



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RAV58S0027 RAVEN, P. - RAVEN #12910 JEPS #30466 RSA #127758 1958-05-06  
REC79R0001 U.S. BUREAU OF RECLAMATION - REPORT ON RARE PLANT POPULATIONS ALONG THE ALL AMERICAN CANAL 1979-XX-XX  
REI96S0007 REINA, A. & T. VAN DEVENDER - REINA #220 RSA #592920, UCR #97014. SEINET #1110597, ASU, SEINET #891496, ASU #324968  
1996-04-27  
RIC79S0004 RICH, B. - RICH #79004 RSA #291588 1979-04-21  
ROM79R0001 ROMSPERT, A. & J. BURK - ALGODONES DUNES SENSITIVE PLANT PROJECT - C.S.U. FULLERTON PREPARED FOR BLM 1979-  
XX-XX  
ROS63S0001 ROSSBACH, G. - ROSSBACH #5239 UC #1351650 1963-07-03  
SEA78S0005 SEARS - SEARS #764 UCR #33542 1978-03-15  
SIM65S0001 SIMPSON, J. - SIMPSON SN SD #103941 1965-05-13  
STE90S0003 STEWART, J. - STEWART #649 UCR #89809 1990-03-14  
STO96S0002 STONE, B. & J. DICE - STONE SN SD #138925 1996-04-29  
SWA11S0038 SWANSON, A. - SWANSON #194 RSA #776107 2011-03-09  
THO64S0037 THORNE, R. & RUTHERFORD - THORNE #33611 RSA #167678, GH #427280 1964-04-11  
THO78S0051 THORNE, R. - THORNE #52150 RSA #336258 1978-05-30  
THO84S0002 THORNE, R. ET AL. - THORNE #58265 RSA #331168 1984-04-27  
TUR62S0001 TURNER, B. - TURNER #4757 SD #108087 1962-04-19  
VAN05S0003 VAN DAM, A. - VAN DAM SN UCR #165596 2005-04-19  
VAS64S0002 VASEK, F. - VASEK #640411-2 UCR #3820, UCSB #38383 1964-04-11  
VAS64S0006 VASEK, F. - VASEK #640411-03 UCR #3819 1964-04-11  
VER64S0005 VERITY, D. ET AL. - VERITY SN SFV #4269A 1964-02-15  
WAR87R0001 WARREN, P. & A. LAURENZI - RARE PLANTS SURVEY OF THE YUMA DISTRICT. 1987-08-XX  
WES77R0003 WESTEC SERVICES, INC. - SURVEY OF SENSITIVE PLANTS OF THE ALGODONES DUNES - PREPARED FOR BLM. 1977-08-XX  
WIE35S0023 WIEGAND, K. & M. WIEGAND - WIEGAND #2578 GH #427282 1935-XX-XX  
WIL05U0001 WILLOUGHBY, J. - EMAIL TO R. BITTMAN REGARDING DATA ON ALGODONES DUNES PLANTS 2005-11-30  
WIL64S0002 WILSON, K. - WILSON #1327 SFV #4068 1964-04-11  
WOL31S0036 WOLF, C. - WOLF #1888 RSA #2149 1931-03-14  
WOLNDS0001 WOLF - WOLF #1888 HERBARIUM UNKNOWN XXXX-XX-XX



**Occurrence Report**  
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**Map Index Number:** 92503  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 56

**EO Index:** 93647  
**Element Code:** PDAST6T012  
**Occurrence Last Updated:** 2014-05-28

**Scientific Name:** *Palafoxia arida var. gigantea*

**Common Name:** giant spanish-needle

**Listing Status:**       **Federal:** None  
                                  **State:** None  
**CNDDB Element Ranks:** **Global:** G5T3?  
                                  **State:** S2

**Rare Plant Rank:** 1B.3  
**Other Lists:** BLM\_S-Sensitive  
                          SB\_CalBG/RSABG-California/Rancho Santa Ana  
                          Botanic Garden

**General Habitat:**  
DESERT DUNES.

**Micro Habitat:**  
ACTIVE AND STABLE DUNE AREAS; ASSOCIATED WITH AMMOBROMA SONORAE, ASTRAGALUS LENTIGINOSUS BORREGANUS, ETC. 20-95 M.

**Last Date Observed:** 2002-03-02  
**Last Survey Date:** 2002-03-02  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
IMPERIAL DUNES RECREATION AREA (ALGODONES DUNES), 0.5 MILE WSW OF OGILBY, WEST OF COUNTY ROAD S34.

**Detailed Location:**  
MAPPED ACCORDING TO COORDINATES PROVIDED ON A 2002 PORTER ET AL. COLLECTION; DATUM UNKNOWN; MAPPED TO ENCOMPASS NAD27 AND NAD83.

**Ecological:**  
SHALLOW DUNES AND SANDY SOILS OF BRAIDED WASH.

**Threats:**  
**General:**  
ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 2002 PORTER ET AL. COLLECTION.

<b>PLSS:</b> T15S, R20E, Sec. 34, E (S)	<b>Accuracy:</b> 80 meters	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3632803 E701564	<b>Latitude/Longitude:</b> 32.81475 / -114.84698	<b>Elevation (feet):</b> 310

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
POR02S0002 PORTER, J. ET AL. - PORTER #13401 RSA #767464, ARIZ #412699 2002-03-02



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 35287  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 1

**EO Index:** 5532  
**Element Code:** PDEUP080L0  
**Occurrence Last Updated:** 1996-08-27

**Scientific Name:** *Ditaxis claryana*

**Common Name:** glandular ditaxis

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDDB Element Ranks:** **Global:** G3G4  
                                   **State:**     S2

**Rare Plant Rank:** 2B.2  
**Other Lists:**

**General Habitat:**  
 MOJAVEAN DESERT SCRUB, SONORAN DESERT SCRUB.

**Micro Habitat:**  
 IN DRY WASHES AND ON ROCKY HILLSIDES. SANDY SOILS. 15-505 M.

**Last Date Observed:** 1978-03-15  
**Last Survey Date:** 1978-03-15  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 ABOUT 1.5 MILES NORTHEAST OF OGILBY, SOUTHWEST OF THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
 OBSERVED AT T15S R20E SECTIONS 24 AND 25.

**Ecological:**  
 GROWING IN LOWER FAN OF DRY WASH ON GRAVELLY/SANDY SOILS WITHIN CREOSOTE SCRUB.

**Threats:**  
**General:**  
 50-100 PLANTS OBSERVED OVER LESS THAN 100 ACRES IN 1978.

<b>PLSS:</b> T15S, R20E, Sec. 24 (S)	<b>Accuracy:</b> 1 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3635326 E704098	<b>Latitude/Longitude:</b> 32.83702 / -114.81938	<b>Elevation (feet):</b> 550

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 SEA78F0003    SEARS, W. - FIELD SURVEY FORM FOR DITAXIS CLARYANA 1978-03-15



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**Map Index Number:** 76081  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 38

**EO Index:** 77074  
**Element Code:** PDEUP0H140  
**Occurrence Last Updated:** 2014-09-17

**Scientific Name:** *Croton wigginsii*

**Common Name:** Wiggins' croton

**Listing Status:**       **Federal:** None  
                              **State:** Rare  
**CNDDDB Element Ranks:** **Global:** G2G3  
                              **State:** S2

**Rare Plant Rank:** 2B.2  
**Other Lists:** BLM\_S-Sensitive  
                      SB\_CalBG/RSABG-California/Rancho Santa Ana  
                      Botanic Garden

**General Habitat:**  
DESERT DUNES, SONORAN DESERT SCRUB.

**Micro Habitat:**  
ON SAND DUNES AND IN SANDY ARROYOS. 0-155 M.

**Last Date Observed:** 2002-07-15  
**Last Survey Date:** 2002-07-15  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
SE END OF THE ALGODONES DUNES; NEAR THE JUNCTION OF INTERSTATE 8 AND BLYTHE OGILBY ROAD.

**Detailed Location:**  
MAPPED BY CNDDDB AS BEST GUESS AROUND SECTION 23 ACCORDING TO TRS INFORMATION ON A 1978 SEARS FIELD SURVEY FORM.

**Ecological:**  
SPARSE DESERT SCRUB ON LOOSE SAND. ASSOCIATES INCLUDE AMMOBROMA SONORAE, PETALONYX THURBERI, TIQUILIA PLICATA, PALAFOXIA ARIDA GIGANTEA, OENOTHERA.

**Threats:**  
**General:**  
SITE BASED ON A VAGUE 1978 SEARS SURVEY FORM. COLLECTIONS FROM "DIRT TRACK HEADING E 3.3 MI FROM GRAYS WELL RD EXIT OFF I-8", "4.1 MI S OF OGILBY AT OGILBY RD, EXIT I-10", AND "OGILBY RD, E SIDE ALGODONES DUNES, S OF I-8" ATTRIBUTED HERE.

<b>PLSS:</b> T16S, R20E, Sec. 23 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 649
<b>UTM:</b> Zone-11 N3626368 E702733	<b>Latitude/Longitude:</b> 32.75652 / -114.83591	<b>Elevation (feet):</b> 200

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Grays Well NE (3211467), Ogilby (3211477)
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**Sources:**  
DAV79S0009 DAVIDSON, C. - DAVIDSON #7794 RSA #480697 1979-04-28  
SEA78F0001 SEARS, W. - FIELD SURVEY FORM FOR CROTON WIGGINSII 1978-03-15  
SEA78S0010 SEARS - SEARS #765 SEINET #3107109, FLD #4500 1978-XX-XX  
VAN02S0001 VAN DEVENDER, T. ET AL. - VAN DEVENDER #2002-473 SEINET #281192 & #286839, USON #12101 2002-07-15





**Occurrence Report**  
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**Map Index Number:** 28142  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 1

**EO Index:** 17711  
**Element Code:** PDFAB0F491  
**Occurrence Last Updated:** 2011-10-18

**Scientific Name:** *Astragalus insularis* var. *harwoodii*

**Common Name:** Harwood's milk-vetch

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDDB Element Ranks:** **Global:** G5T4  
                                   **State:** S2

**Rare Plant Rank:** 2B.2  
**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

**General Habitat:**  
 DESERT DUNES, MOJAVEAN DESERT SCRUB.

**Micro Habitat:**  
 OPEN SANDY FLATS AND SANDY OR STONY DESERT WASHES;  
 MOSTLY IN CREOSOTE BUSH SCRUB. -45-700 M.

**Last Date Observed:** 2008-03-20  
**Last Survey Date:** 2008-03-20  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 VICINITY OF THE INTERSECTION OF OLD HIGHWAY 80 (NOW I-8) AND OGILBY ROAD (HWY S34), SE END OF PILOT KNOB MESA.

**Detailed Location:**  
 MAPPED BY CNDDDB AS A NON-SPECIFIC POLYGON ALONG OLIGBY RD (HWY S34) TO ENCOMPASS 3 COLLECTIONS FROM "0.5 MI N OF INTERSECTION", "100 M N OF JUNCTION, W SIDE OF ROAD" AND "SE OF INTERSECTION, 30 M E OF OGILBY ROAD".

**Ecological:**  
 SPARSE CREOSOTE BUSH SCRUB WITH ASCLEPIAS SP, STEPHANOMERIA SP, AMBROSIA DUMOSA, AND ABRONIA VILLOSA. IN SUN ON DRY, SANDY FLATS.

**Threats:**  
**General:**  
 SITE BASED ON MULTIPLE COLLECTIONS FROM THIS AREA; LAST COLLECTED BY GUILLIAMS & MARSHALL IN 2008. NEED MAP DETAIL FOR THIS SITE.

<b>PLSS:</b> T16S, R20E, Sec. 14, S (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 69
<b>UTM:</b> Zone-11 N3627208 E702645	<b>Latitude/Longitude:</b> 32.76411 / -114.83667	<b>Elevation (feet):</b> 240

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

- Sources:**
- ARM83S0003 ARMSTRONG, W. - ARMSTRONG SN SD #115067 1983-05-10
  - ATW70S0001 ATWOOD, N. - ATWOOD #2335 NY #1258227 1970-04-02
  - BAL58S0002 BALLS, E. & P. EVERETT - BALLS #22890 UC #1080347, RSA #124371 1958-03-20
  - GUI08S0004 GUILLIAMS, C. & J. MARSHALL - GUILLIAMS #631 SDSU #18741 2008-04-23
  - MCL85S0002 MCLAUGHLIN, S. & J. BOWERS - MCLAUGHLIN #2946 ARIZ #257606 1985-03-10
  - MCL87A0001 MCLAUGHLIN, S. ET AL. - VASCULAR PLANTS OF EASTERN IMPERIAL COUNTY, CA. MADRONO VOL. 34, NO. 4, PP. 359-378, 1987. 1987-XX-XX
  - THO64S0038 THORNE, R. & R. RUTHERFORD - THORNE #33564 RSA #754257 & #800188 1964-04-10



**Occurrence Report**  
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**Map Index Number:** 77752

**EO Index:** 78652

**Key Quad:** Grays Well NE (3211467)

**Element Code:** PDFAB0F491

**Occurrence Number:** 43

**Occurrence Last Updated:** 2009-12-29

**Scientific Name:** *Astragalus insularis* var. *harwoodii*

**Common Name:** Harwood's milk-vetch

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.2

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

**CNDDDB Element Ranks:** **Global:** G5T4

**State:** S2

**General Habitat:**

DESERT DUNES, MOJAVEAN DESERT SCRUB.

**Micro Habitat:**

OPEN SANDY FLATS AND SANDY OR STONY DESERT WASHES; MOSTLY IN CREOSOTE BUSH SCRUB. -45-700 M.

**Last Date Observed:** 1985-03-10

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1985-03-10

**Occurrence Rank:** Unknown

**Owner/Manager:** UNKNOWN

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

I-8 AT JUNCTION WITH SIDEWINDER RD, SE END OF PILOT KNOB MESA.

**Detailed Location:**

MAPPED BY CNDDDB AS BEST GUESS AT THE JUNCTION OF I-8 AND SIDEWINDER RD.

**Ecological:**

SANDY SOIL WITH LARREA AND CROTON CALIFORNICUS.

**Threats:**

**General:**

ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1985 MCLAUGHLIN & BOWERS COLLECTION, MENTIONED AS "UNCOMMON" IN 1985.

**PLSS:** T16S, R21E, Sec. 21 (S)

**Accuracy:** 3/5 mile

**Area (acres):** 0

**UTM:** Zone-11 N3625454 E710370

**Latitude/Longitude:** 32.74686 / -114.75465

**Elevation (feet):** 250

**County Summary:**

Imperial

**Quad Summary:**

Yuma West (3211466), Grays Well NE (3211467), Araz (3211476), Ogilby (3211477)

**Sources:**

MCL85S0001 MCLAUGHLIN, S. & J. BOWERS - MCLAUGHLIN #2942 ARIZ #257607 1985-03-10

MCL87A0001 MCLAUGHLIN, S. ET AL. - VASCULAR PLANTS OF EASTERN IMPERIAL COUNTY, CA. MADRONO VOL. 34, NO. 4, PP. 359-378, 1987. 1987-XX-XX



**Occurrence Report**  
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**Map Index Number:** 36276  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 1

**EO Index:** 31273  
**Element Code:** PDFAB0N040  
**Occurrence Last Updated:** 2014-08-25

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDDB Element Ranks:** **Global:** G5  
                                   **State:** S3

**Rare Plant Rank:** 2B.3  
**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 SONORAN DESERT SCRUB.

**Micro Habitat:**  
 SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1990-XX-XX  
**Last Survey Date:** 1990-XX-XX  
**Owner/Manager:** BLM?  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 VICINITY OF AMERICAN GIRL MINE, CARGO MUCHACHO MOUNTAINS, EAST OF OGILBY.

**Detailed Location:**  
 E POLYGON: EXACT LOCATION OF POPULATION(S) NOT PROVIDED; PROJECT SITES ARE WITHIN LARGE PORTIONS OF T15S R21E SECTIONS 17, 18, 19 AND THE SW 1/4 OF SEC 20. W POLYGON: EXACT LOCATION UNKNOWN; MAPPED BASED ON TRS FROM 1978 SEARS COLLECTION.

**Ecological:**  
 GROWING IN SHALLOW, STABLE HEAD WASHES AT THE BASE OF THE MOUNTAINS AND ON THE SHALLOW FAN WASHES OUT ON THE ALLUVIAL FANS WHERE THE WASHES BRANCH OUT AND FLOOD WATERS LOSE VELOCITY. DESERT PAVEMENT & WASHES; SANDY SOIL; WITH LARREA.

**Threats:**  
 MINING ACTIVITY. PLANTS REPORTEDLY RECOLONIZE DISTURBED AREAS.

**General:**  
 W POLYGON IS BASED ON A 1978 SEARS COLLECTION FROM "1 MI N OF OGILBY, 2 MI DOWN DESERT RAT TRAILER PARK RD" WITH GIVEN TRS "T15S R20E S24 & S25" AND GIVEN ELEVATION OF 500 TO 650 FT. E POLYGON OBSERVED IN 1990. NEEDS FIELDWORK.

<b>PLSS:</b> T15S, R21E, Sec. 17 (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 3,278
<b>UTM:</b> Zone-11 N3636835 E706926	<b>Latitude/Longitude:</b> 32.85010 / -114.78884	<b>Elevation (feet):</b> 1,000

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 NEW91U0001 NEWTON, G. - PORTION OF ENVIRONMENTAL DOCUMENT FOR AMERICAN GIRL CANYON PROJECT AND MESQUITE PROJECT. 1991-03-06  
 SEA78S0009 SEARS - SEARS #776 SEINET #3107285, FLD #4678 1978-XX-XX



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 36283  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 2

**EO Index:** 31280  
**Element Code:** PDFAB0N040  
**Occurrence Last Updated:** 1997-07-30

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:**       **Federal:** None  
                               **State:**     None  
**CNDDB Element Ranks:** **Global:** G5  
                                   **State:**     S3

**Rare Plant Rank:** 2B.3  
**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 SONORAN DESERT SCRUB.

**Micro Habitat:**  
 SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1979-04-29  
**Last Survey Date:** 1979-04-29  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 ALONG RAILROAD ACCESS ROAD 2.2 MILES SOUTHEAST OF CACTUS, PILOT KNOB MESA.

**Detailed Location:**  
 NEAR RAILROAD BRIDGE 714-12.

**Ecological:**  
 ROCKY WASH CHANNEL. CREOSOTE BUSH SCRUB WITH BEBBIA, OLNEYA, AND CERCIDIUM.

**Threats:**  
**General:**  
 ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1979 COLLECTION BY DAVIDSON ET AL.

**PLSS:** T15S, R20E, Sec. 21 (S)  
**UTM:** Zone-11 N3635628 E699398

**Accuracy:** non-specific area  
**Latitude/Longitude:** 32.84061 / -114.86950

**Area (acres):** 85  
**Elevation (feet):** 390

**County Summary:**  
 Imperial

**Quad Summary:**  
 Ogilby (3211477), Cactus (3211478)

**Sources:**  
 DAV79S0001    DAVIDSON, C. ET AL. - DAVIDSON #7803 HSC #66468, POM #347335 1979-04-29



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 36278  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 3

**EO Index:** 31275  
**Element Code:** PDFAB0N040  
**Occurrence Last Updated:** 2014-08-25

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDB Element Ranks:** **Global:** G5  
                               **State:** S3

**Rare Plant Rank:** 2B.3  
**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 SONORAN DESERT SCRUB.

**Micro Habitat:**  
 SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1958-03-20  
**Last Survey Date:** 2013-03-10  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 3.5 MILES NORTH OF OGILBY ON ROAD TO BLYTHE.

**Detailed Location:**  
 EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BASED ON 1958 BALLS COLLECTION WITH GIVEN ELEV OF 499 FT. A 1937 WIGGINS COLLECTION FROM "3.5 MI N OF OGILBY ON ROAD TO PALO VERDE, ELEV 440 FT" IS ATTRIBUTED HERE; ELEV DOES NOT MATCH LOCALITY.

**Ecological:**  
 GRAVELLY SLOPES AND RUNNEL-INTERFLUVE SYSTEM. PONDEROSA PINE COMMUNITY IN CLAY SOIL, SOUTH ASPECT.

**Threats:**  
**General:**  
 MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1958 BALLS COLLECTION. A 1940 WOGLUM COLLECTION FROM "4 MILES NORTH OF OGILBY" IS ALSO ATTRIBUTED TO THIS SITE. BELL SURVEYED THIS AREA IN 2013, BUT NO PLANTS WERE FOUND.

<b>PLSS:</b> T15S, R20E, Sec. 11, SW (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 31
<b>UTM:</b> Zone-11 N3638658 E702214	<b>Latitude/Longitude:</b> 32.86740 / -114.83877	<b>Elevation (feet):</b> 499

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

- Sources:**
- BAL58S0015    BALLS, E. & P. EVERETT - BALLS #22923 SD #48547, RSA #124333 1958-03-20
  - BEL13U0002    BELL, D. - OBSERVATIONS OF RARE PLANT TAXA FROM DESERT CNPS RARE PLANT TREASURE HUNT SURVEYS, SPRING 2013 2013-03-XX
  - WIG37S0002    WIGGINS, I. - WIGGINS #8557 POM #265282, DS #278459, SEINET #902098, ARIZ #137709 1937-02-17
  - WOG40S0014    WOGLUM, R. - WOGLUM #2460 RSA #28737 & 630291, SEINET #2011354, SJNM 1940-03-10



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 36282

**EO Index:** 31279

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 5

**Occurrence Last Updated:** 2010-07-09

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

**CNDDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1987-01-10

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1987-01-10

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

IN WASHES ALONG THE HYDUKE MINE ROAD NORTH OF THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

ALONG ROAD ON THE SOUTH SIDE OF INDIAN WASH. MAPPED AS LARGE AREA EXTENDING FROM T14S R20E S 1/2 SEC 13 AT THE W END TO T14S R21E N 1/2 SEC 10 (PROJECTED) AT THE E END. APPARENTLY RESTRICTED TO "BLUE DOTTED LINE" WASHES ON MAP PROVIDED.

**Ecological:**

LOW TOTAL COVER (<5%) IN SMALL WASHES WITH LARREA TRIDENTATA, FOQUIERIA SPLENDENS, FRANSERIA DUMOSA, ACACIA GREGGII, AND KRAMERIA PARVIFLORA. LARGER WASHES SUPPORT OLNEYA TESOTA-CERCIDIUM FLORIDUM WOODLAND.

**Threats:**

**General:**

FEWER THAN 5 PLANTS PER ACRE OBSERVED BY HOLLAND AND DAINS IN 1987.

**PLSS:** T14S, R21E, Sec. 17 (S)

**Accuracy:** non-specific area

**Area (acres):** 757

**UTM:** Zone-11 N3647996 E706948

**Latitude/Longitude:** 32.95070 / -114.78611

**Elevation (feet):** 720

**County Summary:**

Imperial

**Quad Summary:**

Picacho Peak (3211486), Hedges (3211487)

**Sources:**

HOL87F0070 HOLLAND, R. & V. DAINS - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 1987-01-10



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 36284

**EO Index:** 31281

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 6

**Occurrence Last Updated:** 2008-09-05

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1932-04-05

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1932-04-05

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

NEAR TUMCO IN THE CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS A BEST GUESS IN THE VICINITY OF THE TUMCO MINE NEAR THE HEAD OF TUMCO WASH.

**Ecological:**

IN SMALL GULLIES.

**Threats:**

**General:**

SITE KNOWN FROM A 1932 COLLECTION BY MUNZ & HITCHCOCK. NEEDS FIELDWORK.

**PLSS:** T15S, R20E, Sec. 12 (S)

**Accuracy:** 3/5 mile

**Area (acres):** 0

**UTM:** Zone-11 N3640164 E704289

**Latitude/Longitude:** 32.88060 / -114.81628

**Elevation (feet):**

**County Summary:**

Imperial

**Quad Summary:**

Ogilby (3211477), Hedges (3211487)

**Sources:**

MUN32S0020 MUNZ, P. & C. HITCHCOCK - MUNZ #12134 POM #184095, DS #221047 & #690509 1932-04-05



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 62018

**EO Index:** 62054

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 13

**Occurrence Last Updated:** 2005-07-19

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1991-04-10

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1991-04-10

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

IN AND ADJACENT TO INDIAN WASH; 6 MILES NORTH OF CARGO MUCHACHO MOUNTAINS, AND 7 TO 8 MILES NORTH OF HEDGES.

**Detailed Location:**

AROUND 800 FOOT ELEVATION.

**Ecological:**

DESERT PAVEMENT/DESERT WASH. FOUND WITH FOUQUIERIA SPLENDENS, LARREA TRIDENTATA, AMBROSIA DUMOSA, OLNEYA TESOTA, ENCELIA FARINOSA, ET AL.

**Threats:**

**General:**

1991 LARUE COLLECTION IS THE ONLY SOURCE FOR THIS SITE. NEEDS FIELDWORK.

**PLSS:** T14S, R21E, Sec. 05 (S)

**Accuracy:** 1 mile

**Area (acres):** 0

**UTM:** Zone-11 N3651157 E707383

**Latitude/Longitude:** 32.97910 / -114.78074

**Elevation (feet):** 800

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

LAR91S0001 LARUE, E. - LARUE #91-32 UCR #67337, RSA #528113, CAS #850219, SEINET #902096, ARIZ #294039 1991-04-10





**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62020

**EO Index:** 62056

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 14

**Occurrence Last Updated:** 2005-07-19

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Fair

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

1.4 AIR MILES NNW OF GOLD ROCK RANCH.

**Detailed Location:**

IN THE NW 1/4 OF THE SW 1/4 OF SECTION 34.

**Ecological:**

STRINGER WASH, FOUND WITH OCOTILLO, CREOSOTE BUSH, AND WHITE BURSAGE.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT, LITTER, AND ORV USE.

**General:**

10 PLANTS SEEN IN 2001.

**PLSS:** T14S, R20E, Sec. 34, SW (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3642412 E699726

**Latitude/Longitude:** 32.90170 / -114.86453

**Elevation (feet):** 545

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 62021

**EO Index:** 62057

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 15

**Occurrence Last Updated:** 2005-07-19

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Good

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

ABOUT 0.7 AIR MILE NNE OF GOLD ROCK RANCH, NORTHWEST OF HEDGES.

**Detailed Location:**

**Ecological:**

FOUND WITH OCOTILLO, CREOSOTE BUSH, CHOLLA, WHITE BURSAGE, IRONWOOD, CAT CLAW, AND BOX THORN.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT.

**General:**

84 PLANTS TOTAL (FOR 8 SMALL COLONIES) OBSERVED IN 2001.

**PLSS:** T15S, R20E, Sec. 03, NW (S)

**Accuracy:** specific area

**Area (acres):** 39

**UTM:** Zone-11 N3641423 E700606

**Latitude/Longitude:** 32.89262 / -114.85533

**Elevation (feet):** 540

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62023

**EO Index:** 62059

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 16

**Occurrence Last Updated:** 2014-08-22

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2013-03-10

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2013-03-10

**Occurrence Rank:** Good

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

0.7 AIR MILE NORTHWEST OF HEDGES, 0.2 TO 0.6 MILE NORTH OF TUMCO WASH. NW SLOPES OF CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

IN THE SE 1/4 OF SECTION 3 AND THE SW 1/4 OF SECTION 2. 1958 BACIGALUPI COLLECTION FROM 4.8 MI N OF OGILBY, ON NW SLOPES OF CARGO MUCHACHO MTNS AND 1941 ALEXANDER & KELLOGG COLLECITON FROM 5 MI N OF OGILBY ALSO ATTRIBUTED TO THIS SITE.

**Ecological:**

OPEN ROCKY AREAS WITH SMALL DRAINAGES AND MICROPHYLL WOODLAND. FOUND WITH CREOSOTE BUSH, CHOLLA, WHITE BURSAGE, OCOTILLO, IRONWOOD, GALLET, LUPINE, AND WHITE RATANY.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT. LITTER, DUMPING, AND ORV USE MAY ALSO THREATEN.

**General:**

91 PLANTS TOTAL OBSERVED IN 2001. GREATER THAN 30 PLANTS OBSERVED IN THE SE CORNER OF POLYGON IN 2013.

**PLSS:** T15S, R20E, Sec. 02, SW (S)

**Accuracy:** specific area

**Area (acres):** 72

**UTM:** Zone-11 N3640268 E701986

**Latitude/Longitude:** 32.88196 / -114.84084

**Elevation (feet):** 560

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

- ALE41S0025 ALEXANDER, A. & L. KELLOGG - ALEXANDER #1894 POM #211622, A #366147, DS #333554, SEINET #902097, ARIZ #34444 1941-03-04
- AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26
- AND13S0001 ANDRE, J. - ANDRE #24103 RSA #806146 2013-03-04
- BAC58S0014 BACIGALUPI, R. & P. HUTCHINSON - BACIGALUPI #6123 JEPS #22127 1958-02-17
- BEL13U0002 BELL, D. - OBSERVATIONS OF RARE PLANT TAXA FROM DESERT CNPS RARE PLANT TREASURE HUNT SURVEYS, SPRING 2013 2013-03-XX



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 62024

**EO Index:** 62060

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 17

**Occurrence Last Updated:** 2005-07-19

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Fair

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

1.3 MILES NORTHWEST OF HEDGES.

**Detailed Location:**

SOUTH EDGE OF SW 1/4 OF SW 1/4 OF SECTION 35.

**Ecological:**

FOUND WITH WHITE BURSAGE, OCOTILLO, AND CREOSOTE BUSH.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT. LITTER AND ORV USE MAY ALSO THREATEN.

**General:**

2 PLANTS SEEN IN 2001.

**PLSS:** T14S, R20E, Sec. 35, SW (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3641836 E701852

**Latitude/Longitude:** 32.89612 / -114.84194

**Elevation (feet):** 605

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62025

**EO Index:** 62061

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 18

**Occurrence Last Updated:** 2008-09-05

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Fair

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

1.8 AIR MILES NORTHEAST OF GOLD ROCK RANCH, NORTHWEST OF HEDGES.

**Detailed Location:**

NE 1/4 OF NW 1/4 OF SW 1/4 OF SECTION 35.

**Ecological:**

FOUND WITH CREOSOTE BUSH, WHITE BURSAGE, PALO VERDE, IRONWOOD.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT. LITTER AND ORV USE MAY ALSO THREATEN.

**General:**

5 PLANTS SEEN IN 2001. A 1932 PERISON COLLECTION FROM "6 MILES NORTH OF OGILBY" IS ALSO ATTRIBUTED TO THIS SITE.

**PLSS:** T14S, R20E, Sec. 35, SW (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3642614 E701643

**Latitude/Longitude:** 32.90317 / -114.84399

**Elevation (feet):** 615

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26

PEI32S0009 PEIRSON, F. - PEIRSON #9788 RSA #86977, DS #690508 1932-03-21



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62028

**EO Index:** 62064

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 19

**Occurrence Last Updated:** 2005-07-20

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Good

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

SOUTH OF INDIAN WASH; ON WEST SIDE OF TRANSMISSION LINE, ABOUT 2.2 TO 3.3 AIR MILES NNW OF HEDGES.

**Detailed Location:**

EAST EDGE OF SECTION 27, THE SW 1/4 OF SW 1/4 OF SECTION 26, AND NW 1/4 OF NW 1/4 OF SECTION 35.

**Ecological:**

FOUND WITH CREOSOTE BUSH, OCOTILLO, WHITE BURSAE, CHOLLA, PALO VERDE, IRONWOOD, AFRICAN MUSTARD, ENCELIA, WHITE RATANY, MEDITERRANEAN GRASS, AND BOX THORN.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT. LITTER AND ORV USE MAY ALSO THREATEN.

**General:**

56 PLANTS TOTAL (FOR 11 COLONIES) OBSERVED IN 2001.

**PLSS:** T14S, R20E, Sec. 27, E (S)

**Accuracy:** specific area

**Area (acres):** 75

**UTM:** Zone-11 N3644485 E701088

**Latitude/Longitude:** 32.92013 / -114.84952

**Elevation (feet):**

**County Summary:**

**Quad Summary:**

Imperial

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62030

**EO Index:** 62066

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 20

**Occurrence Last Updated:** 2005-07-20

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Fair

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

NORTH OF INDIAN WASH; ON WEST SIDE OF TRANSMISSION LINE, 5.4 AIR MILES NNW OF HEDGES.

**Detailed Location:**

IN THE SE 1/4 OF THE SW 1/4 OF SECTION 10.

**Ecological:**

FOUND WITH WHITE BURSAGE, CREOSOTE BUSH, OCOTILLO, AND ENCELIA.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT. LITTER AND ORV USE MAY ALSO THREATEN.

**General:**

5 PLANTS OBSERVED IN 2001.

**PLSS:** T14S, R20E, Sec. 10, SW (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3648284 E700188

**Latitude/Longitude:** 32.95455 / -114.85831

**Elevation (feet):** 650

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62032

**EO Index:** 62068

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 21

**Occurrence Last Updated:** 2005-07-20

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Excellent

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

6.3 AIR MILES SW OF INDIAN PASS; ABOUT 2 AIR MILES NW OF INDIAN WASH, NW OF HEDGES.

**Detailed Location:**

NW 1/4 OF SECTION 10, AND INTO SW 1/4 OF SW 1/4 OF SECTION 3.

**Ecological:**

FOUND WITH WHITE BURSAGE, IRONWOOD, GALLETA, BOX THORN, WHITE RATANY, AFRICAN MUSTARD, CREOSOTE BUSH, OCOTILLO, MEDITERRANEAN GRASS, AND ENCELIA.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT. LITTER AND ORV USE MAY ALSO THREATEN.

**General:**

304 PLANTS TOTAL (FOR 6 COLONIES) OBSERVED IN 2001.

**PLSS:** T14S, R20E, Sec. 10, NW (S)

**Accuracy:** specific area

**Area (acres):** 40

**UTM:** Zone-11 N3649280 E699895

**Latitude/Longitude:** 32.96358 / -114.86123

**Elevation (feet):** 690

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26





**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62091

**EO Index:** 62127

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 30

**Occurrence Last Updated:** 2005-07-22

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2001-03-26

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2001-03-26

**Occurrence Rank:** Fair

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

ALONG WEST SIDE OF TRANSMISSION LINE, 3.1 MILES NORTHWEST OF INDIAN WASH.

**Detailed Location:**

IN THE SE 1/4 OF THE NE 1/4 OF SECTION 4, AND INTO SW 1/4 OF THE NW 1/4 OF SECTION 3.

**Ecological:**

STRINGER WASH FOUND WITH IRONWOOD, CREOSOTE BUSH, ENCELIA, AND WHITE BURSAGE.

**Threats:**

THREATENED BY NORTH BAJA PIPELINE PROJECT. LITTER AND ORV USE MAY ALSO BE THREATS.

**General:**

15 PLANTS OBSERVED IN 2001.

**PLSS:** T14S, R20E, Sec. 04, NE (S)

**Accuracy:** specific area

**Area (acres):** 8

**UTM:** Zone-11 N3650791 E699529

**Latitude/Longitude:** 32.97726 / -114.86482

**Elevation (feet):** 710

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND01F0024 ANDERSON, B. & J. SCHEFFEL - FIELD SURVEY FORM FOR CALLIANDRA ERIOPHYLLA 2001-03-26



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 62098  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 31

**EO Index:** 62134  
**Element Code:** PDFAB0N040  
**Occurrence Last Updated:** 2014-08-25

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDDB Element Ranks:** **Global:** G5  
                                   **State:** S3

**Rare Plant Rank:** 2B.3  
**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 SONORAN DESERT SCRUB.

**Micro Habitat:**  
 SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1978-04-30  
**Last Survey Date:** 2013-03-10  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 IN WASH ON ROAD S34 (OGILBY ROAD) NORTH OF I-8.

**Detailed Location:**  
 EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDDB ALONG S34 NEAR AMERICAN GIRL WASH NORTH OF OGILBY.

**Ecological:**  
 WASH WOODLAND WITH OLNEYA, CERCIDIUM FLORIDUM, KRAMERIA GRAYI, LARREA, ETC. OPEN ROCKY AREAS WITH SMALL DRAINAGES AND MICROPHYLL WOODLAND.

**Threats:**  
**General:**  
 1978 LATTING COLLECTION IS THE MAIN SOURCE OF INFORMATION FOR THIS SITE. BELL SURVEYED THIS AREA IN 2013, BUT NO PLANTS WERE FOUND.

<b>PLSS:</b> T15S, R20E, Sec. 26, W (S)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 112
<b>UTM:</b> Zone-11 N3634801 E702396	<b>Latitude/Longitude:</b> 32.83260 / -114.83766	<b>Elevation (feet):</b> 400

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 BEL13U0002 BELL, D. - OBSERVATIONS OF RARE PLANT TAXA FROM DESERT CNPS RARE PLANT TREASURE HUNT SURVEYS, SPRING 2013 2013-03-XX  
 LAT78S0002 LATTING, J. - LATTING SN UCR #137366 1978-04-30



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 72157  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 35

**EO Index:** 73122  
**Element Code:** PDFAB0N040  
**Occurrence Last Updated:** 2008-09-05

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDDB Element Ranks:** **Global:** G5  
                                   **State:** S3

**Rare Plant Rank:** 2B.3  
**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 SONORAN DESERT SCRUB.

**Micro Habitat:**  
 SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1970-04-06  
**Last Survey Date:** 1970-04-06  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 3 MILES EAST OF OGILBY, ON DIRT ROAD WEST OF CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
 EXACT LOCATION UNKNOWN. MAPPED BY CNDDDB AS A BEST GUESS.

**Ecological:**  
 LOW DESERT SCRUB, SANDY SOIL.

**Threats:**  
**General:**  
 ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1970 COLLECTION BY NIILUS. NEEDS FIELDWORK.

<b>PLSS:</b> T15S, R21E, Sec. 31 (S)	<b>Accuracy:</b> 1 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3633145 E706984	<b>Latitude/Longitude:</b> 32.81682 / -114.78905	<b>Elevation (feet):</b> 360

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**  
 NII70S0001      NILUS, T. - NIILUS #173 RSA #658024 1970-04-06



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 72161

**EO Index:** 73127

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 38

**Occurrence Last Updated:** 2014-08-27

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

**CNDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 2013-03-04

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2013-03-04

**Occurrence Rank:** Unknown

**Owner/Manager:** BLM

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

ON BLM RD 664, 0.5 MILE EAST OF OGILBY RD, CARGO MUCHACO MOUNTAINS.

**Detailed Location:**

MAPPED ACCORDING TO COORDINATES PROVIDED ON A 2013 ANDRE COLLECTION, IN THE NW 1/4 OF THE SE 1/4 OF SECTION 26.

**Ecological:**

SPARSELY VEGETATED GRAVELLY TO ROCKY VOLCANIC HILLS AND PAVEMENTS. ASSOCIATED WITH ENCELIA FARINOSA, FOUQUIERIA, AMBROSIA DUMOSA, ERIOGONUM THOMASII, LARREA TRIDENTATA, AND FAGONIA PACHYACANTHA.

**Threats:**

**General:**

MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 2013 ANDRE COLLECTION; DESCRIBED AS "OCCASIONAL". A 2001 COLLECTION BY PITZER & BALLMER FROM "VICINITY OF INDIAN WASH, 13.9 MILES SOUTH OF HIGHWAY 78 ON OGILBY RD" IS ALSO ATTRIBUTED HERE.

**PLSS:** T14S, R20E, Sec. 26, SE (S)

**Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** Zone-11 N3644031 E702274

**Latitude/Longitude:** 32.91583 / -114.83695

**Elevation (feet):** 640

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

AND13S0002 ANDRE, J. - ANDRE #24139 RSA #806150 2013-03-04

PIT01S0001 PITZER, B. & G. BALLMER - PITZER #4264 UCR #163763 2001-03-17



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



<b>Map Index Number:</b> 79366	<b>EO Index:</b> 80349
<b>Key Quad:</b> Hedges (3211487)	<b>Element Code:</b> PDFAB0N040
<b>Occurrence Number:</b> 42	<b>Occurrence Last Updated:</b> 2010-07-09

<b>Scientific Name:</b> <i>Calliandra eriophylla</i>	<b>Common Name:</b> pink fairy-duster
<b>Listing Status:</b>	<b>Rare Plant Rank:</b> 2B.3
<b>Federal:</b> None	<b>Other Lists:</b> SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden
<b>State:</b> None	
<b>CNDDDB Element Ranks:</b>	
<b>Global:</b> G5	
<b>State:</b> S3	

<b>General Habitat:</b> SONORAN DESERT SCRUB.	<b>Micro Habitat:</b> SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.
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<b>Last Date Observed:</b> 1998-03-22	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1998-03-22	<b>Occurrence Rank:</b> Unknown
<b>Owner/Manager:</b> BLM	<b>Trend:</b> Unknown
<b>Presence:</b> Presumed Extant	

**Location:**  
APPROXIMATELY 1 MILE EAST OF OGILBY ROAD AND SOUTH OF INDIAN PASS ROAD, NORTH END OF CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**  
MAPPED BY CNDDDB AS BEST GUESS BASED ON COORDINATES ON COLLECTION LABEL; COORDINATES ARE FROM 1998 WITH NO DATUM SPECIFIED.

**Ecological:**  
VOLCANIC SUBSTRATES WITH LARREA TRIDENTATA, OLNEYA TESOTA, AND FOUQUIERIA SPLENDENS.

**Threats:**  
**General:**  
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1998 REBMAN COLLECTION.

<b>PLSS:</b> T14S, R20E, Sec. 25, NW (S)	<b>Accuracy:</b> 1/10 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3644635 E703112	<b>Latitude/Longitude:</b> 32.92112 / -114.82786	<b>Elevation (feet):</b> 787

<b>County Summary:</b> Imperial	<b>Quad Summary:</b> Hedges (3211487)
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**Sources:**  
REB98S0001 REBMAN, J. ET AL. - REBMAN #4946 UCR #112167, SD #144883, RSA #643389 1998-03-22



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Map Index Number:** 86962

**EO Index:** 87923

**Key Quad:** Hedges (3211487)

**Element Code:** PDFAB0N040

**Occurrence Number:** 49

**Occurrence Last Updated:** 2012-10-16

**Scientific Name:** *Calliandra eriophylla*

**Common Name:** pink fairy-duster

**Listing Status:** **Federal:** None

**Rare Plant Rank:** 2B.3

**State:** None

**Other Lists:** SB\_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

**CNDDDB Element Ranks:** **Global:** G5

**State:** S3

**General Habitat:**

SONORAN DESERT SCRUB.

**Micro Habitat:**

SANDY OR ROCKY SITES IN THE DESERT. 105-1015 M.

**Last Date Observed:** 1985-03-09

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 1985-03-09

**Occurrence Rank:** Unknown

**Owner/Manager:** UNKNOWN

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

ENTRENCHED WASH NORTH END OF CARGO MUCHACHO MOUNTAINS.

**Detailed Location:**

MAPPED ALONG WASH NEAR COORDINATES PROVIDED ON HERBARIUM PRINTOUT FOR 1985 MCLAUGHLIN COLLECTION. SOURCE OF COORDINATES IS UNKNOWN; COORDINATES ARE LOCATED ON A SLOPE ON THE SOUTH SIDE OF THE WASH.

**Ecological:**

ASSOCIATED WITH ASCLEPIAS ALBICANS.

**Threats:**

**General:**

ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1985 MCLAUGHLIN COLLECTION. NEEDS FIELDWORK.

**PLSS:** T14S, R20E, Sec. 36 (S)

**Accuracy:** non-specific area

**Area (acres):** 73

**UTM:** Zone-11 N3642459 E704203

**Latitude/Longitude:** 32.90129 / -114.81668

**Elevation (feet):** 800

**County Summary:**

Imperial

**Quad Summary:**

Hedges (3211487)

**Sources:**

MCL85S0005 MCLAUGHLIN, S. & J. BOWERS - MCLAUGHLIN #2931, SEINET #902093, ARIZ #257518 1985-03-09



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 46437  
**Key Quad:** Glamis (3211581)  
**Occurrence Number:** 2

**EO Index:** 46437  
**Element Code:** PDLNN02020  
**Occurrence Last Updated:** 2019-01-03

**Scientific Name:** *Pholisma sonorae*

**Common Name:** sand food

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDDB Element Ranks:** **Global:** G2  
                                   **State:** S2

**Rare Plant Rank:** 1B.2  
**Other Lists:** BLM\_S-Sensitive  
 SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 DESERT DUNES, SONORAN DESERT SCRUB.

**Micro Habitat:**  
 LOOSE, DEEP SAND DUNES, USUALLY ON THE MORE STABLE,  
 WINDWARD FACE. 0-125 M.

**Last Date Observed:** 2018-04-22  
**Last Survey Date:** 2018-04-22  
**Owner/Manager:** BLM  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Good  
**Trend:** Unknown

**Location:**  
 ALGODONES DUNES.

**Detailed Location:**

MAPPED BY CNDDDB TO ENCOMPASS VARIOUS SOURCES OF MAP INFORMATION. INCLUDES FORMER EO #S 3-11, 13-25, 28-41, 43-45, 47-49, 51, 52. IN 2013, THE 4 PLANTS OBSERVED N OF HWY 78 WERE THE ONLY INDIVIDUALS SEEN OVER A LARGE AREA.

**Ecological:**

MOST COMMONLY FOUND IN SHELTERED STABILIZED SAND DUNES BUT IT MAY OCCUR IN LOOSE DEEP SAND ON THE WINDWARD FACES OF SAND DUNES. ROOT PARASITE ON COLDENIA PPLICATA, ERIOGONUM DESERTICOLA, AND COLDENIA PALMERI.

**Threats:**

ORV ACTIVITY, BORDER PATROL USE.

**General:**

SEEN IN 1977 THROUGHOUT DUNES. POPULATION NUMBERS FOR PARTS OF OCC: 571 IN 1994, ~486 FLOWER HEADS IN '98, 385 IN '99, 1576 IN '00, 3740 IN '01, 3317 IN '02, 78,417 IN '04, 4 IN '13, 24 IN '17, 94 IN '18.

<b>PLSS:</b> T14S, R18E, Sec. 57, N (S)	<b>Accuracy:</b> specific area	<b>Area (acres):</b> 78,858
<b>UTM:</b> Zone-11 N3640419 E682852	<b>Latitude/Longitude:</b> 32.88668 / -115.04526	<b>Elevation (feet):</b> 300

**County Summary:**

Imperial

**Quad Summary:**

Grays Well NE (3211467), Grays Well (3211468), Ogilby (3211477), Cactus (3211478), Clyde (3211488), Glamis SE (3211571), Glamis (3211581), Glamis NW (3211582), East of Acolita (3311511), Acolita (3311512), Amos (3311513), Tortuga (3311523)

**Sources:**

- ANO36S0002 ANONYMOUS - ANONYMOUS SN SD #15582 1936-05-XX
- AUB59S0001 AUBREY, F. - AUBREY SN UCR #16469 1959-04-25
- BAR66S0001 BARR, R. - BARR #66-36 US ARIZ #161673 (AS CITED IN WAR87R0001) 1966-05-30
- BEL13U0002 BELL, D. - OBSERVATIONS OF RARE PLANT TAXA FROM DESERT CNPS RARE PLANT TREASURE HUNT SURVEYS, SPRING 2013 2013-03-XX
- BEN10I0002 BENNETT, A. - PHOTOS OF PHOLISMA SONORAE, CALPHOTOS ID #0000 0000 0510 2064-2072 2010-05-16
- BEZ65S0001 BEZY, R. - BEZY SN UA #231779 (AS CITED IN WAR87R0001) 1965-05-28
- BLM00R0001 BLM-BUREAU OF LAND MANAGEMENT - MONITORING OF SPECIAL STATUS PLANTS IN THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA: RESULTS OF 1998 MONITORING AND COMPARISON WITH THE DATA FROM WESTECS 1977 MONITORING STUDY 2000-11-XX
- BLM01R0001 BLM-BUREAU OF LAND MANAGEMENT - MONITORING OF SPECIAL STATUS PLANTS IN THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA: 1977, 1998, 1999, AND 2000 2001-06-XX



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



BLM04R0002	BLM-BUREAU OF LAND MANAGEMENT - MONITORING OF SPECIAL STATUS PLANTS IN THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA: 1977, 1998, 1999, 2000, 2001, AND 2002 2004-10-XX
BLM04R0003	BLM-BUREAU OF LAND MANAGEMENT - MONITORING OF SPECIAL STATUS PLANTS IN THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA, RESULTS OF 2003 PILOT SAMPLING 2004-01-05
BLM05R0001	BLM-BUREAU OF LAND MANAGEMENT - 2004 MONITORING OF SPECIAL STATUS PLANTS IN THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA 2005-03-24
BLM80M0001	BUREAU OF LAND MANAGEMENT - CALIFORNIA DESERT CONSERVATION AREA - MAP OF RARE, THREATENED, AND ENDANGERED PLANT SPECIES 1980-XX-XX
BLM86R0002	BLM-BUREAU OF LAND MANAGEMENT - PROPOSED 1985 PLAN AMENDMENTS VOL. 2 1986-01-XX
BRU17F0017	BRUNER, C. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2017-04-05
BRU17F0020	BRUNER, C. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2017-04-06
BRU17F0021	BRUNER, C. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2017-04-06
BRU17F0022	BRUNER, C. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2017-04-05
BRU18F0021	BRUNER, C. ET AL. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2018-03-27
BRU18F0035	BRUNER, C. ET AL. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2018-03-29
BRU18F0040	BRUNER, C. ET AL. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2018-03-29
BRU18F0045	BRUNER, C. ET AL. (U.S. BUREAU OF LAND MANAGEMENT) - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2018-04-22
CAR73S0005	CARLQUIST, S. & WALLACE - CARLQUIST #4365 RSA #239048, SD #90614, NY #37805, CAS #577823, MO #100679897, SEINET #10847674, CAS-BOT-BC #230596 1973-05-14
CHA08I0001	CHARTERS, M. - PHOTOS OF PHOLISMA SONORAE, CALPHOTOS ID #0000 0000 0508 0614-0620 2008-05-05
CHM00R0001	CH2M HILL - IMPERIAL IRRIGATION DISTRICT (IID)/SAN DIEGO COUNTY WATER AUTHORITY (SDCWA) WATER CONSERVATION AND TRANSFER PROJECT EIR/EIS, SCOPING SUMMARY REPORT 2000-03-10
COO36S0001	COOK, L. - COOK SN UCR #95847 SD #16026 1936-06-13
COT67S0001	COTHRUN, D. - COTHRUN SN ASU #37347 (AS CITED IN WAR87R0001) 1967-07-07
COX63S0001	COX, G. - COX SN SDSU #7874 1963-04-28
DAV79F0001	DAVIDSON, C. ET AL. - FIELD SURVEY FORM FOR ASTRAGALUS MAGDALENAE VAR. PEIRSONII & PHOLISMA SONORAE 1979-04-28
DAV79S0010	DAVIDSON, C. ET AL. - DAVIDSON #7759 RSA #446408 1979-04-28
DAV79S0011	DAVIDSON, C. ET AL. - DAVIDSON #7793 RSA #446407, HSC #82769 1979-04-28
DEF34S0001	DEFOREST, H. - DE FOREST #18614 RSA #446409 1934-03-29
DICNDU0001	DICE, J. - LOCATION OF PHOLISMA SONORAE IN COMMENTS OF SKI95F0013. XXXX-XX-XX
DIR03S0001	DIRIDONI, G. - DIRIDONI SN SD #243934 2003-01-21
ENG79S0001	ENGARD, R. - ENGARD #1132 DBG (AS CITED IN WAR87R0001) 1979-04-14
FIL18F0005	FILLIPI, D. - FIELD SURVEY FORM FOR PHOLISMA SONORAE 2018-04-18
GIL28S0005	GILMAN, M. - GILMAN SN POM #145275 & #145276, SBBG #59874, CAS #154857, DS #171324, CAS-BOT-BC #230598 & #230595 1928-04-25
GUI08S0006	GUILLIAMS, C. & J. MARSHALL - GUILLIAMS #634 (A-D) SDSU #18394, #18388, #18364, & #18358 2008-04-23
GUS83S0013	GUSTAFSON, R. & KEELEY - GUSTAFSON #2571 RSA #446405 1983-05-06
HAR65S0004	HARWOOD, R. - HARWOOD SN SDSU #7880 1965-05-09
HEN64S0001	HENRICKSON, J. & RUTHERFORD - HENRICKSON #1836 RSA #182256, GH #376183 1964-05-16
HIL01S0005	HILL, S. & K. KRAMER - HILL #33499 UCR #123800, ILLS #211703, SEINET #7048030 2001-04-27
HOW64S0006	HOWE, D. - HOWE #3761 SDSU #8108 1964-04-12
HOW64S0007	HOWE, D. - HOWE #10193 RSA #172241 & #446406 1964-05-13
KOL46S0001	KOLUVEK, P. - KOLUVEK SN UC #775203, NY #37804, DS #342223, MO #100679895, SEINET #10946708, CAS-BOT-BC #230599 1946-06-11
LUC83R0001	LUCKENBACH, R. A. & R. B. BURY - EFFECTS OF OFF-ROAD VEHICLES ON THE BIOTA OF THE ALGODONES DUNES, IMPERIAL COUNTY, CALIFORNIA; JOURNAL OF APPLIED ECOLOGY (1983); 20; PG. 265-286 1983-XX-XX
MCC93R0003	MCCALVIN, C. (U.S. FISH AND WILDLIFE SERVICE) - SURVEYS FOR SEVEN RARE PLANT SPECIES, THE FLAT-TAILED HORNED LIZARD, AND THE COLORADO DESERT FRINGED-TOED LIZARD, ALL-AMERICAN CANAL LINING PROJECT, IMPERIAL COUNTY, CALIFORNIA 1993-08-XX
MOR81U0007	MOREY, S. - MAPS OF BOUNDED AREAS REPRESENTATIVE OF DATA POINTS FROM WES77R0004. 1981-04-24





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OESNDF0001 OESTERREIC, W. - BLM FIELD SURVEY FORM FOR PHOLISMA SONORAE XXXX-07-19  
PEI32S0013 PEIRSON, M. - PEIRSON #9781 RSA #77813 1932-03-21  
POR03S0028 PORTER, J. - PORTER #13491 RSA #0084082 2003-04-08  
REC79R0001 U.S. BUREAU OF RECLAMATION - REPORT ON RARE PLANT POPULATIONS ALONG THE ALL AMERICAN CANAL 1979-XX-XX  
ROM79R0001 ROMSPERT, A. & J. BURK - ALGODONES DUNES SENSITIVE PLANT PROJECT - C.S.U. FULLERTON PREPARED FOR BLM 1979-XX-XX  
ROO49S0046 ROOS, J. - ROOS #4984 RSA #89981 1949-04-07  
RYA69S0007 RYAN, J. - RYAN #50 RSA #209611 1969-04-11  
SDNNDU0003 SAN DIEGO NATURAL HISTORY MUSEUM - NOTES ON GENERAL LOCATIONS OF (AMMOBROMA) PHOLISMA SONORAE. XXXX-XX-XX  
SKI95F0013 SKINNER, M. - FIELD SURVEY FORM FOR PHOLISMA SONORAE 1995-04-08  
SPJ80S0003 SPJUT, R. & J. ADAMS - SPJUT #6153 HSC #66961 1980-04-30  
THO78S0030 THORNE, R. - THORNE #52167 RSA #336093 1978-05-30  
THO84S0003 THORNE, R. ET AL. - THORNE #58267 RSA #331172 & #0109169, NY #37806 1984-04-27  
WAL73S0004 WALLACE, G. & CARLQUIST - WALLACE #1193 RSA #257643, CAS #763732, CAS-BOT-BC #293705 1973-05-14  
WAL98F0006 WALL, M. - FIELD SURVEY FORM FOR PHOLISMA SONORAE 1998-06-08  
WAL98F0007 WALL, M. - FIELD SURVEY FORM FOR PHOLISMA SONORAE 1998-06-08  
WAL98F0008 WALL, M. - FIELD SURVEY FORM FOR PHOLISMA SONORAE 1998-06-08  
WAR87R0001 WARREN, P. & A. LAURENZI - RARE PLANTS SURVEY OF THE YUMA DISTRICT. 1987-08-XX  
WED66S0002 WEDBERG, H. - WEDBERG #1234 SDSU #8102 1966-05-02  
WES77R0003 WESTEC SERVICES, INC. - SURVEY OF SENSITIVE PLANTS OF THE ALGODONES DUNES - PREPARED FOR BLM. 1977-08-XX  
WES77R0004 WESTEC SERVICES, INC. - SURVEY OF SENSITIVE PLANTS OF THE ALGODONES DUNES - PREPARED FOR BLM BY WESTEC. 1977-XX-XX  
WIE03A0001 WIESENBORN, W. - INSECTS ON PHOLISMA SONORAE FLOWERS AND THEIR CONSPECIFIC POLLEN LOADS, MADRONO VOL. 50, NO. 2, PP. 110-114, 2003 2003-XX-XX  
WIL66S0003 WILGUS, J. - WILGUS SN ARIZ #159492 (AS CITED IN WAR87R0001) 1966-05-15  
YAT80S0001 YATSKIEVYCH, G. - YATSKIEVYCH #80-129 ARIZ #221475, MO #100654470, SEINET #10743474 (ALSO CITED IN WAR87R0001) 1980-04-26



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Map Index Number:** 06550  
**Key Quad:** Ogilby (3211477)  
**Occurrence Number:** 12

**EO Index:** 46458  
**Element Code:** PDLNN02020  
**Occurrence Last Updated:** 2001-11-09

**Scientific Name:** *Pholisma sonorae*

**Common Name:** sand food

**Listing Status:**       **Federal:** None  
                               **State:** None  
**CNDDDB Element Ranks:** **Global:** G2  
                                   **State:** S2

**Rare Plant Rank:** 1B.2  
**Other Lists:** BLM\_S-Sensitive  
 SB\_CalBG/RSABG-California/Rancho Santa Ana  
 Botanic Garden

**General Habitat:**  
 DESERT DUNES, SONORAN DESERT SCRUB.

**Micro Habitat:**  
 LOOSE, DEEP SAND DUNES, USUALLY ON THE MORE STABLE,  
 WINDWARD FACE. 0-125 M.

**Last Date Observed:** 1902-05-XX  
**Last Survey Date:** 1902-05-XX  
**Owner/Manager:** UNKNOWN  
**Presence:** Presumed Extant

**Occurrence Type:** Natural/Native occurrence  
**Occurrence Rank:** Unknown  
**Trend:** Unknown

**Location:**  
 OGILBY, NEAR HEDGES MINES.

**Detailed Location:**  
 EXACT LOCATION UNKNOWN, MAPPED AS BEST GUESS BY CNDDDB AT OGILBY.

**Ecological:**

**Threats:**

**General:**  
 SITE BASED ON A 1902 COLLECTION BY STOCKTON. NEEDS FIELDWORK.

<b>PLSS:</b> T15S, R20E, Sec. 35, N (S)	<b>Accuracy:</b> 1 mile	<b>Area (acres):</b> 0
<b>UTM:</b> Zone-11 N3633124 E702138	<b>Latitude/Longitude:</b> 32.81754 / -114.84079	<b>Elevation (feet):</b> 400

<b>County Summary:</b>	<b>Quad Summary:</b>
Imperial	Ogilby (3211477)

**Sources:**

SDNNDU0003	SAN DIEGO NATURAL HISTORY MUSEUM - NOTES ON GENERAL LOCATIONS OF (AMMOBROMA) PHOLISMA SONORAE. XXXX-XX-XX
STO02S0001	STOCKTON, A. - STOCKTON SN UC #105882 1902-05-XX

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## **APPENDIX E**

**Photo pages**



**Photo 1.**

Representative photo of the *Brassica (nigra)* and other mustards semi-natural stands CNPS vegetation category.



**Photo 2.**

Representative photo of the *Larrea tridentata* *Encelia farinosa* alliance CNPS vegetation category.



**Photo 3.**

Representative photo of the *Parkinsonia florida*—*Olneya tesota* alliance CNPS vegetation category.



**Photo 4.**  
Example Observation point during raptor surveys.



**Photo 5.**  
Example Observation point used during raptor surveys.



**Photo 6.**  
Example Observation point used during raptor surveys.



**Photo 7.**  
Example Observation point used during raptor surveys.



**Photo 8.**  
Active eyrie for prairie falcon observed during raptor surveys.



**Photo 9.**  
Active eyrie for prairie falcon observed during raptor surveys.



**Photo 10.**  
Red-tailed hawk roost detected.



**Photo 11.**  
Potentially suitable western burrowing owl habitat within the Analysis Area.



**Photo 12.**  
Potentially suitable western burrowing owl habitat within the Analysis Area.



**Photo 13.**

Habitat assessed for Colorado desert fringe-toed lizard. Sandy area was assessed for potential habitat for the lizard.



**Photo 14.**

Habitat assessed for Colorado desert fringe-toed lizard.



**Photo 15.**

Abandoned underground mine assessed for bat use. There is a bat compatible closure (angle-iron gate) in the mine portal.





**Photo 16.**  
Abandoned underground mine assessed for bat use.



**Photo 17.**  
Location of Gila woodpecker historical detection location outside of Analysis Area.



**Photo 18.**  
Representative small wash assessed for Gila woodpecker habitat within the Analysis Area.



**Photo 19.**  
Active desert tortoise burrow observed.

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## **APPENDIX F**

### **BLM Sensitive Species 'Non' List**

**Appendix F. BLM Sensitive Species for the El Centro Field Office with a Potential to Occur of “None”.**

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<b>AMPHIBIANS</b>					
<i>Lithobates yavapaiensis</i> Lowland leopard frog	Occurs in a variety of perennial to near perennial waters in desert grasslands to pinyon juniper biotic communities (AGFD 2006). Inhabits large rivers, streams, canals, cienegas, cattle tanks or other aquatic features (Rorabaugh 2008). Can survive in semi-permanent aquatic systems by retreating into deep mud cracks, mammal burrows, or rock fissures, but large pools are required for adult survival and reproductive efforts (Bureau of Reclamation 2016).  Elevation: In California, from near sea level to 5,961 ft (CDFW 2018).	Historic range included Arizona, California, Nevada, New Mexico, U.S. and extreme northeastern Baja California, northern Sonora, and possibly northwestern Chihuahua, Mexico (AGFD 2006, Bureau of Reclamation 2016). Current range is restricted to southern Arizona and adjacent portions of Sonora (Bureau of Reclamation 2016).	Assumed to be extirpated from California, otherwise extremely rare (CDFW 2018). Historically inhabited San Bernardino, Riverside and Imperial counties, along the Colorado River Valley and Imperial Valley (CDFW 2018).	<b>None.</b> There is no perennial water in the Analysis Area and this species is considered extirpated from California.	
<b>BIRDS</b>					
<i>Agelaius tricolor</i> Tricolored blackbird	Occupies areas near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs (CDWF 2008c). Feeds in grasslands and cropland habitats. Seeks cover in emergent wetland vegetation and also in trees and shrubs (CDWF 2008c).	Historically the ranged throughout most of lower-elevation California, with smaller nesting colonies known from Baja California, Nevada, and Oregon (USFWS 2019). The majority of the breeding population was found in the Central Valley, along the California coast, in the Sierra Nevada foothills, and in southern California (USFWS 2019).	Common locally throughout Central Valley and in coastal districts from Sonoma County (CDWF 2008c). More widespread in winter along the central coast and San Francisco Bay area and in portions of the Colorado Desert (CDWF 2008c).	<b>None.</b> The Analysis Area does not contain appropriate habitat for this species are no occurrence records for this species within the California Natural Diversity Database in these quadrangles (CDFW 2020).	
<i>Charadrius montanus</i> Mountain plover	Utilizes short grasslands, plowed fields with little vegetation, and open sagebrush areas. Avoids areas with dense cover. Nests in open areas in high-elevation grassland, often blue gramma and buffalo grass patches (CDFW 2008a). Does not nest in California (CDFW 2008a).  Elevation: In California, below 3,200 ft in winter (CDFW 2008a).	Breeds in western Great Plains and Rocky Mountains States from the Canadian border to Northern Mexico (USFWS 2021). In the U.S., breeding occurs in Colorado, Montana, Nebraska, New Mexico and Wyoming and less frequently in Kansas, Oklahoma, Texas, and Utah (USFWS 2021).	In California, winter resident September through March in Central Valley from Sutler and Yuba counties southward. Also in foothills west of San Joaquin Valley, Imperial Valley, Los Angeles County, and San Bernardino County and along the central Colorado river valley (CDFW 2008a, b). Extralimital records along the northern coast (CDFW 2008a).	<b>None.</b> This species is only known to winter in California and is outside the known range. There are no records for this species within the California Natural Diversity Database in these quadrangles (CDFW 2020).	

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<p><i>Colaptes chrysoides</i></p> <p>Gilded flicker</p>	<p>This species is most common in riparian areas, desert washes, and other habitats with Joshua trees or saguaro cacti (CDFW 1997). Typically avoids urban and rural neighborhoods, even when saguaros are present (CDFW 1997, Corman and Wise-Gervais 2005). This species hybridizes with the Northern Flicker (Wiebe and Moore 2017). Hybrids are typically found in riparian woodlands at the upper end of the species' elevational range (Corman 2005b). This species is non-migratory and uses similar habitats year-round (Moore, Pyle, and Wiebe 2017). Nest in soft wood of a snag or dead branches of live cottonwood, willow, Joshua tree, or saguaro cacti (CDFW 1997).</p> <p>Elevation: In Arizona, typically 200–3,200 ft but occasionally up to 4,600 ft in riparian areas (Corman 2005b).</p>	<p>This species is non-migratory (Moore, Pyle, and Wiebe 2017). Occurs in Arizona, California and Nevada, U.S. and the Mexican states of Baja California, Baja California Sur, Sinaloa and Sonora (Moore, Pyle, and Wiebe 2017).</p>	<p>Considered nearly extirpated in California (CDFW 1997).</p>	<p><b>None.</b> This species is considered extirpated, the Analysis Area lacks appropriate habitat, and there are no records for this species within the California Natural Diversity Database in these quadrangles (CDFW 2020).</p>	
<p><i>Laterallus jamaicensis coturniculus</i></p> <p>California black rail</p>	<p>This species breeds in tidal marshes, shallow freshwater marshes, wet meadows, flooded grassy areas and wetlands fed by irrigation with persistent emergent vegetation (Eddleman, Flores, and Legare 1994, Richmond et al. 2010). Uses areas with water depths of roughly one inch or less (Dodge 2019). The <i>coturniculus</i> subspecies is non-migratory, although juveniles disperse erratically from their natal sites (Eddleman, Flores, and Legare 1994). Uses similar habitat year-round (Eddleman, Flores, and Legare 1994). Along the Colorado River they prefer dense bulrush stands, shallow water, and gently sloping shorelines (CDFW 1990b).</p> <p>Elevation: In Arizona, 150–600 ft (AGFD 2002a, Corman 2005a).</p>	<p>The <i>coturniculus</i> subspecies occurs in Arizona and California, U.S. and Baja California and Sonora, Mexico (Eddleman, Flores, and Legare 1994, Hinojosa-Huerta et al. 2013).</p>	<p>Scarce, yearlong resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area, Sacramento-San Joaquin Delta, coastal southern California at Morro Bay and a few other locations, the Salton Sea, and lower Colorado River area (CDFW 1990b). Formerly a local resident in coastal wetlands from Santa Barbara County to San Diego County (CDFW 1990b).</p>	<p><b>None.</b> The Analysis Area lacks appropriate habitat and is outside the known ranged, and there are no records for this species within the California Natural Diversity Database in these quadrangles (CDFW 2020).</p>	

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<i>Micrathene whitneyi</i> Elf owl	Occupies desert riparian habitat of moderate to open canopy, often with a moderate to sparse shrub understory, and typically bordering desert wash, desert scrub, or grassland habitats (CDFW 1990c). Taller trees with a shrub understory may be required. Utilizes moderately tall trees and snags, including cottonwood, sycamore, willow, mesquite, and saguaros often using cavities made by other birds (CDFW 1990c). Nested in cottonwood and saguaro in California but also nests in willow, sycamore, and mesquite trees or snags of moderate height (CDFW 1990c). In the Sonoran Desert regions they are found mainly in riparian habitats or in areas with numerous saguaro (Wise-Gervais 2005).  Elevation: up to 7,000 ft (CDFW 1990c).	Found from the southwest U.S. to central Mexico and Baja California. Northern populations winter in central Mexico and on the Pacific slope north to Sinaloa, Mexico (Wise-Gervais 2005).	Rarely seen spring and summer resident of the Colorado River Valley. Records at Cottonwood Springs and Corn Springs in Riverside County (CDFW 1990c). Now nearly extirpated along the length of Colorado River. Reported only north of Needles, San Bernadino County, roughly 22 miles north of Blythe, Riverside County, and at Corn Springs since 1970 (CDFW 1990c).	<b>None.</b> This Analysis Area lacks appropriate habitat and there are no records for this species within the California Natural Diversity Database in these quadrangles (CDFW 2020)	
<i>Pelecanus occidentalis</i> Brown pelican	Inhabits estuarine, marine subtidal, and marine pelagic waters along the coasts (CDFW 1990b). Usually rests on water or inaccessible rocks, but uses mudflats, sandy beaches, wharfs, and jetties. Nests on rocky or low and brushy slopes of undisturbed islands, usually on the ground, but less often in bushes. Requires undisturbed lands adjacent to good marine fishing areas.	Found along the Atlantic, Pacific, and Gulf coasts of North and South America (USFWS 2009). Can also be found from Nova Scotia to Venezuela and on the Pacific Coast from British Columbia to south-central Chile and the Galapagos Islands (USFWS 2009). On the Gulf Coast they occur in Florida, Alabama, Louisiana, Texas, Mississippi, and Mexico. Can use the Salton Seas in California, lakes in Florida, and bodies of water in southeast Arizona (USFWS 2009).	Breeds on the Channel Islands, Anacapa in Santa Barbara and Santa Cruz counties (CDFW 1990b). Rare to uncommon on the Salton Sea and Colorado River reservoirs (CDFW 1990b).	<b>None.</b> The analysis area occurs outside of this species range and no suitable aquatic habitat exists within the Analysis Area.	

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<p><i>Strix occidentalis occidentalis</i></p> <p>California spotted owl</p>	<p>Inhabits forests and woodlands with large old trees and snags, high basal areas of trees and snags, dense canopies, multiple canopy layers, and downed woody debris (Shuford and Garadali 2008). In southern California, occupies montane hardwood and montane hardwood-conifer forests, especially with Canyon Live Oak and Bigcone Douglas fir and mid to high elevations. Uses coastal oak woodland, valley foothill riparian, and redwood forests at low elevations (Shuford and Garadali 2008)..</p> <p>Elevation: seal level in San Diego County to 6,600 ft in Tulare County (Shuford and Garadali 2008)..</p>	<p>Includes three resident subspecies: the Northern Spotted Owl (<i>S. o. caturina</i>) in the mountains of the Pacific coast from southwestern British Columbia south through western Washington and Oregon to San Francisco Bay, California; the Mexican Spotted Owl (<i>S. o. lucida</i>) in forested mountains from southern Utah and Colorado south to Michoacan Mexico; and the California Spotted Owl of northern California south along the western slope of Sierra Nevada and in mountains of central and southern California nearly to the Mexican border with three sight records from the Sierra San Pedro Matir in northern Baja California (Shuford and Garadali 2008).</p>	<p>In the southern California mountains, they are known to occur in the southern Coast ranges from Monterey County south through the Traverse and Peninsular ranges to southern San Diego County (Shuford and Garadali 2008). Detected in the Santa Cruz Mountains of San Mateo and Santa Cruz counties. Also observed in the San Bernardino Mountains (Shuford and Garadali 2008).</p>	<p><b>None.</b> The analysis occurs outside this species range and no suitable forested habitat occurs within the Analysis Area.</p>	
<p><i>Vireo bellii arizonae</i></p> <p>Arizona bell's vireo</p>	<p>Inhabits low, dense riparian growth along water or intermittent streams. Typically associated with willow, cottonwood, baccharis, wild blackberry or mesquite in desert localities (CDFW 1990a). Utilizes thickets of willow and other low shrubs. Usually found near water (CDFW 1990a).</p> <p>Elevations: In California, summers below 2,000 ft (CDFW 1990a).</p>	<p>Primarily occurs throughout Arizona, Utah, Nevada, and Sonora Mexico and in California along the lower Colorado River (CDFW 1990a).</p>	<p>Rare summer resident along the Colorado River from Needles in San Bernardino County south to Blythe in Riverside County (CDFW 1990a). Also found at Picacho State Recreation Area and near Laguna Dam in Imperial County (CDFW 1990a).</p>	<p><b>None.</b> No suitable riparian a habitat occurs within the analysis Area.</p>	
<p><i>Vireo bellii pusillus</i></p> <p>Least bell's vireo</p>	<p>Inhabits low, dense riparian growth along water or intermittent streams. Typically associated with willow, cottonwood, baccharis, wild blackberry or mesquite in desert localities (CDFW 1990a). Utilizes thickets of willow and other low shrubs. Usually found near water (CDFW 1990a).</p> <p>Elevations: In California, summers below 2,000 ft (CDFW 1990a).</p>	<p>Endemic to California and northern Baja California (CDFW 1990a).</p>	<p>Summer resident mostly in San Benito and Monterey counties, in coastal southern California from Santa Barbara County south, and along the western edge of the deserts in desert riparian habitat (CDFW 1990a).</p>	<p><b>None.</b> No suitable riparian a habitat occurs within the analysis Area.</p>	

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<b>MAMMALS</b>					
<i>Myotis evotis</i> Long-eared myotis	Inhabits nearly all brush, woodland and forest habitats but coniferous woodlands and forests seem to be preferred. Roosts in buildings, crevices, under bark, and in snags(CDFW 1990g). Occurs in semiarid shrublands, sage, chaparral, and agricultural areas, but usually associated with coniferous forests (WBWG 2018).  Elevation: sea level to at least 9,000 ft (CDFW 1990g).	Found across western North American from southwestern Canada (British Columbia, Alberta, and Saskatchewan) to Baja California and eastward in the U.S. to the western Great Plains (WBWG 2018).	Widespread in California but believed to be uncommon in most of its range. Avoids arid Central Valley and hot deserts, occurring along the entire coast and in the Sierra Nevada, Cascades, and Great Basin from the Oregon border south through the Tehachapi Mountains to the Coast Ranges (CDFW 1990g).	<b>None.</b> No suitable forest or woodland habitats occur within the analysis Area.	
<i>Myotis thysanodes</i> Fringed myotis	Utilizes a wide variety of habitats including pinyon-juniper, valley foothill hardwood and hardwood-conifer forests (CDFW 1990f). Roosts in crevices in buildings, mines, rocks, rock faces, bridges, and in large decadent trees or snags (WBWG 2018).  Elevation: sea level to 9,350 ft but most common between 4,000 and 7,000 ft (WBWG 2018).	Throughout much of western North American from southern British Columbia, Canada, south the Chiapas, Mexico from Santa Cruz Island in California, east to the Black Hills of South Dakota (WBWG 2018).	Widespread in California occurring in all but the Central Valley and Colorado and Mojave deserts. Abundance appears to be irregular (CDFW 1990f).	<b>None.</b> No suitable forest or woodland habitats occur within the analysis Area.	
<i>Perognathus longimembris bangsi</i> Palm Springs little pocket mouse	Known from various vegetation communities including creosote scrub, desert scrub, and grasslands, generally occurring on loosely packed or sandy soils with sparse to moderately dense cover (Bolster 1998).	Historically known from the San Geronimo Pass area east to southern Joshua Tree National Park and Shaver's Valley, south through the Coachella Valley to Ocotillo (Bolster 1998).	Currently found in the northern and western regions of Coachella Valley north of Interstate 10 (Nature Serve 2021).	<b>None.</b> The analysis Area occurs outside the known range of this species.	
<b>PLANTS</b>					
<i>Ambrosia umbellata</i> var. <i>aurita</i> chaparral sand-verbena	Annual herb that blooms March through September. Inhabits chaparral, coastal scrub, and desert dunes (CNPS 2021c).  Elevation: 250 to 5,250 ft (CNPS 2021c).	Known from California, Arizona, and Baja California (CNPS 2021c).	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties (CNPS 2021c). One location in Anza-Borrego does not appear to be naturally occurring.	<b>None.</b> No suitable desert dunes of chaparral habitat occur within the Analysis Area.	



Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<i>Astragalus magdalenae</i> <i>var. peirsonii</i>  Peirson's milk-vetch	Perennial herb that blooms December through April. Inhabits desert dunes (CNPS 2021m).  Elevation: 200 to 750 ft (CNPS 2021m).	Occurs in California, Arizona, Baja California, and Sonora Mexico (CNPS 2021m).	Imperial County and presumed extirpated if once present in San Diego County (CNPS 2021m).	<b>None.</b> No suitable desert dune habitat occurs within the analysis Area.	
<i>Choenactis glabriuscula</i> <i>var. orcuttiana</i>  Orcutt's pincushion	Annual herb that blooms January through August. Inhabits sandy substrates including coastal bluff scrub in coastal dunes (CNPS 2021k).  Elevation: sea level to 325 ft (CNPS 2021k).	Occurs in California and Baja California (CNPS 2021k).	Found in Los Angeles, San Diego, Ventura counties and presume extirpated in Orange County (CNPS 2021k).	<b>None.</b> The analysis Area occurs outside of the range of this species and no suitable coastal dunes occur within the analysis Area.	
<i>Chorizanthe polygonoides</i> <i>var. longispina</i>  Long-spined spineflower	Annual herb that blooms April through July. Inhabits clay substrates in chaparral, coastal scrub, meadows, seeps, valley, foothill grassland, and vernal pools (CNPS 2021f).  Elevations: 100 to 5,000 ft (CNPS 2021f).	Occurs in California and Baja California (CNPS 2021f).	Found in Orange, Riverside, Santa Barbara, and San Diego counties (CNPS 2021f).	<b>None.</b> The analysis Area occurs outside of the range of this species and no suitable coastal dunes occur within the analysis Area.	
<i>Cylindropuntia fosbergii</i>  Pink teddy-bear cholla	Perennial stem succulent that blooms March through May. Inhabits Sonoran desert scrub habitats (CNPS 2021n).  Elevation: 280 to 2,790 ft (CNPS 2021n).	Endemic to California (CNPS 2021n).	Occurs in San Diego County (CNPS 2021n).	<b>None.</b> The Analysis Area occurs outside of the known range of this species.	
<i>Dieteria asteroides</i> <i>var. lagunensis</i>  Mt. Laguna aster	Perennial herb that blooms July through August. Utilizes cismontane woodland and lower montane coniferous forest (CNPS 2021i).  Elevation: 2,600 to 7,900 ft (CNPS 2021i).	Located in California and Baja California (CNPS 2021i).	Found in San Diego County (CNPS 2021i).	<b>None.</b> The Analysis Area is outside the known range of this species.	
<i>Fremontodendron mexicanum</i>  Mexican flannelbush	Perennial evergreen shrub that blooms March through June. Inhabits gabbroic, metavolcanic, or serpentine substrates within closed-cone coniferous forest, chaparral, and cismontane woodlands (CNPS 2021g).  Elevation: 30 to 2,350 ft (CNPS 2021g).	Known from California and Baja California (CNPS 2021g).	Found in San Diego County (CNPS 2021g).	<b>None.</b> Outside known range and no occurrence records.	

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<i>Grindelia hali</i> San Diego gumplant	Perennial herb that blooms May through October. Utilizes chaparral, lower montane coniferous forest, meadow, seeps, valley and foothill grassland (CNPS 2021q).  Elevation: 280 to 5,725 ft (CNPS 2021q).	Endemic to California (CNPS 2021q).	Found in San Diego County (CNPS 2021q).	<b>None.</b> Outside known range and no occurrence records.	
<i>Helianthus niveus</i> subsp. <i>tephrodes</i> Algodones Dunes sunflower	Perennial herb that blooms September to May. Lives on desert dunes (CNPS 2021a).  Elevation: 165 to 330 ft (CNPS 2021a).	Found in California, Arizona, and Sonora Mexico (CNPS 2021a).	Occurs in Imperial and San Diego counties (CNPS 2021a).	<b>None.</b> No suitable dune habitats exist within the Analysis Area and no records of the species occur within the Analysis Area.	
<i>Hulsea californica</i> San Diego sunflower	Perennial herb that blooms April through June. Inhabits openings and burned areas in chaparral, lower montane coniferous forest, and upper montane coniferous forests (CNPS 2021r).  Elevation: 3,000 to 9,565 ft (CNPS 2021r).	Endemic to California (CNPS 2021r).	Found in Riverside and San Diego counties (CNPS 2021r).	<b>None.</b> Outside known range and no occurrence records.	
<i>Lepidium flavum</i> var. <i>felipense</i> Borrego Valley peppergrass	Annual herb that blooms March through May. Inhabits sandy areas in pinyon and juniper woodland and Sonoran desert scrub (CNPS 2021b).  Elevation: 1,495 to 2,755 ft (CNPS 2021b).	Occurs in California and Baja California (CNPS 2021b).	Found in San Diego County (CNPS 2021b).	<b>None.</b> Outside known range and no occurrence records.	
<i>Monardella nana</i> subsp. <i>leptosiphon</i> San Felipe monardella	Perennial rhizomatous herb that blooms June through July. Inhabits chaparral and lower montane coniferous forest (CNPS 2021s).  Elevation: 3,940 to 6,085 ft (CNPS 2021s).	Occurs in California and Baja California (CNPS 2021s).	Found in Riverside and San Diego counties (CNPS 2021s). Note: Known mostly from Hot Springs Mountains. Most of the plants from the Palomar Mountains are mis-identified. May not warrant taxonomic recognition due to problems with type specimen and its distribution and a lot of intermediacy between current subtaxa, and evident integrations (CNPS 2021s).	<b>None.</b> No suitable chaparral, or forest habitats occur within the Analysis Area.	

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<i>Palafoxia arida</i> var. <i>gigantea</i> Giant Spanish needle	Annual/perennial herb that blooms January through May. Inhabits desert dunes (CNPS 2021e).  Elevation: 50 to 330 ft (CNPS 2021e).	Occurs in California and Sonora Mexico (CNPS 2021e).	Known only from Imperial County (CNPS 2021e).	<b>None.</b> No suitable dune habitats exist within the Analysis Area and no records of the species occur within the Analysis Area.	
<i>Streptanthus campestris</i> Southern jewel-flower	Perennial herb that blooms May through July. Inhabits rocky areas in chaparral, lower montane coniferous forest, and pinyon juniper woodland (CNPS 2021u).  Elevation: 2,950 to 7,545 ft (CNPS 2021u).	Found in California and Baja California (CNPS 2021u).	Occurs in Imperial, Los Angeles, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties (CNPS 2021u).	<b>None.</b> No suitable chaparral, woodlands or forest habitats occur within the Analysis Area.	
<i>Symphotrichum defoliatum</i> San Bernardino aster	Perennial rhizomatous herb that blooms July through November. Inhabits areas near ditches, streams and springs in cistomontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grasslands that are vernal mesic (CNPS 2021p).  Elevation: 0.6 to 620 ft (CNPS 2021p).	Endemic to California (CNPS 2021p).	Found in Imperial, Kern, Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and possibly in San Luis Obispo counties (CNPS 2021p).	<b>None.</b> No suitable aquatic habitat occurs within the analysis Area.	
<i>Thermopsis californica</i> var. <i>semota</i> Velvety false lupine	Perennial rhizomatous herb that blooms March through June. Inhabits cismontane woodland, lower montane coniferous forest, meadows and seeps, and valley and foothill grasslands (CNPS 2021v).  Elevation: 305 to 570 ft (CNPS 2021v).	Endemic to California (CNPS 2021v).	Found in San Diego County (CNPS 2021v).	<b>None.</b> Outside known range and no occurrence records.	
<i>Thysanocarpus rigidus</i> rigid fringedpod	Annual herb that blooms February through May. Inhabits dry rocky slopes in pinyon and juniper woodland (CNPS 2021o).  Elevation: 185 to 70 ft (CNPS 2021o).	Occurs in California and Baja California (CNPS 2021o).	Found in Los Angeles, Riverside, San Bernardino, and San Diego counties (CNPS 2021o).	<b>None.</b> Outside the known range and no occurrence records.	

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<b>REPTILES</b>					
<i>Actinemys marmorata pallida</i> Southwestern pond turtle	Inhabit ponds, lakes, rivers, streams, creek, marshes, and irrigation ditches with abundant vegetation and either rocky or muddy bottoms in woodland, forests, grassland (CHS 2021f). Prefers shallower area in pools with logs, rocks, cattail mats, and exposed banks required for basking. May enter brackish water and seawater (CHS 2021f).  Elevation: sea level to 6,696 ft but mostly below 4,890 ft (CHS 2021f).	Occurs in California and Baja California (CHS 2021f).	Found south, east, and west of the San Francisco Bay area with eastern boundary along the edge of the South Coast Ranges with an isolated, relict population along the Mojave River at Campy Cody and at Afton Canyon (CHS 2021f).	<b>None.</b> The analysis Area occurs outside the known range of this species.	
<i>Coleonyx switaki</i> Barefoot banded gecko	Inhabits rocky areas at the heads of canyons. Restricted to areas dominated by massive rock formations (CDFW 1990j). In flatlands, canyons, thornscrub and in where vegetation is sparse (CHS 2021e).  Elevation: near sea level to over 2,000 ft (CHS 2021e).	Occurs in California and Baja California (CDFW 1990j).	Found on the east face of the Peninsular Ranges with unsubstantiated reports near Anza Borrego Desert in San Diego County (CDFW 1990j). Isolated population of subspecies <i>C.s. switaki</i> is known from Coyote Mountains of Imperial County (CHS 1990j).	<b>None.</b> The analysis Area occurs outside the known range of this species.	
<i>Phrynosoma mcallii</i> Flat-tailed horned lizard	Inhabits hard packed sandy flats and low dunes in Lower Colorado River desertscrub community, particularly in areas with creosote-white bursage vegetation (USFWS Brennan 2008, 2011). Restricted to areas of fine sand and sparse vegetation in desert washes and flats (CDFW 2000a). Most common in areas with high density of harvester ants and fine windblow sand but rarely occurs on dunes (CHS 2021b).  Elevation: Below 820 ft (AGFD 2010b, CHS 2021b).	Occurs in Arizona and California, U.S. and the Mexican states of Baja California and Sonora (USFWS 2011).	Found in central Riverside, eastern San Diego and Imperial counties (CDFW 2000a). Throughout most of the Colorado desert from Coachella Valley south through the Imperial Valley and west into the Anza-Borrego desert, south to Baja California, southwestern Arizona, and northwestern Sonora (CHS 2021b).	<b>None.</b> No suitable hard packed sandy flats or low dunes occur within the Analysis Area. No records for this species occur within the Analysis Area.	<i>Phrynosoma mcallii</i> Flat-tailed horned lizard

Species Name	Known Suitable Habitat	Total Range	Distribution in California	Potential to Occur	Effects Determination
<i>Phrynosoma blainvilli</i> Coast horned lizard	Inhabits valley-foothill hardwood, conifer and riparian habitats, pine-cypress, juniper, and annual grassland habitats (CDFW 2000a). Occurs in open areas of sandy soil and low vegetation in valleys, foothills, semiarid mountains and along dirt roads or near ant hills (CHS 2021a).  Elevation: Sea level to 6,000 ft (CDFW 2000a) or 8,000 ft (CHS 2021a).	Endemic to California (CHS 2021a).	Historically found along the Pacific coast from the Bay Area to Baja California border and west the Sierra Nevada Mountains (CHS 2021a).	<b>None.</b> The analysis Area occurs outside the known range of this species.	
<i>Thamnophis hammondi</i> Two-striped gartersnake	Inhabit vegetated areas associated with permanent or semi-permanent bodies of water (CDFW 2000). Associated vegetation includes oak woodland, willow, coastal sage scrub, scrub oak, sparse pine, chaparral, and brushland (CHS 2021g).  Elevation: sea level to 8,000 ft (CDFW 2000).	Occurs in California and Baja California (CHS 2021g)	Found on the southeastern slope of the Diablo Range and the Salinas Valley south along the South Coast and Traverse ranges to the Mexican border and on Santa Catalina Island (CDFW 2000).	<b>None.</b> The analysis Area occurs outside the known range of this species.	

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## Appendix F: Project Design Features, Conservation Management Actions, and Mitigation Measures

SMP would prevent unnecessary or undue degradation of public lands by complying with the performance standards found in 43 CFR 3809.415 and 3809.420, as applicable. SMP would comply with BLM’s terms and conditions related to the specific mining and reclamation activities and with other federal and state laws related to environmental protection and protection of cultural resources. SMP would commit to the following environmental protection measures to prevent unnecessary or undue degradation during Project activities. The measures are derived from the general requirements established in 43 CFR 3809.420, as applicable, as well as other federal and state water and air quality regulations.

**Table F-1: Project Design Features**

Number	Project Design Feature	Resources Impacted
<b>PDF-1</b>	<p>Surface water within the Project Area consists of stormwater runoff within natural ephemeral drainages. The Project would require a California General Permit (CGP) pursuant to CGP Regulation (National Pollutant Discharge Elimination System No. CAS000002; State Water Resources Control Board Order No. 2009-0009-DWQ amended by 2010-0014-DWQ and 2012-0006-DWQ). Construction activities subject to the CGP include:</p> <ul style="list-style-type: none"> <li>• Any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre.</li> <li>• All areas subject to land surface disturbance activities related to the Project including, but not limited to, Project staging areas, immediate access areas, and storage areas. All previously active areas are still considered active areas until final stabilization is complete.</li> </ul>	<b>Water Resources</b>
<b>PDF-2</b>	<p>A BLM approved SWPPP would be developed and implemented to control sedimentation from disturbance associated with Project activities. BMPs would be developed following the BLM’s BMPs for Water Quality 2022 to manage disturbed surfaces. Sediment control structures could include, but not be limited to, fabric and/or hay bale filter fences, siltation or filter berms, and downgradient drainage channels in order to prevent unnecessary or undue degradation.</p>	<b>Water Resources</b>
<b>PDF-3</b>	<p>Water used for dust control would be kept to a practicable minimum in order to minimize the risk of water runoff, and any water runoff would be managed so not to cause downstream erosion or flooding nor cause an exceedance of applicable water quality standards.</p>	<b>Water Resources</b>
<b>PDF-4</b>	<p>Only minor servicing of mobile equipment (greasing and periodic fueling) would be conducted on BLM lands, limiting the potential for diesel fuel spills. Spill response kits would be maintained to ensure that pollutants are prevented from entering into washes. Any pollutants generated by Project activities would be properly disposed of in accordance with applicable regulations. The Project does not trigger any waste</p>	<b>Water Resources</b>

Number	Project Design Feature	Resources Impacted
	discharge requirements under Title 27, California Code of Regulations, Section 20005 et seq.	
<b>PDF-5</b>	SMP would implement BMPs for erosion and sediment control measures that would be identified in the BLM approved SWPPP. The effectiveness of erosion control measures would be monitored throughout the duration of the Project as required by the CGP. SMP would follow all erosion and sediment control measures identified in the Reclamation Plan (Sespe 2022), including, but not limited to, specific prohibitions, effluent limitations, potential contaminant source identification, practices to reduce pollutants, assessment of pollutant sources, materials inventory, preventative maintenance program, spill prevention and response procedures, general stormwater BMPs, training, recordkeeping, and sampling procedures.	<b>Water Resources, Soils</b>
<b>PDF-6</b>	SMP would operate under a monitoring program that would be developed for BLM approval under the Proposed Action.	<b>Water Resources, Soils</b>
<b>PDF-7</b>	Air quality impacts associated with the Project would be primarily from fugitive dust generation by vehicles and equipment during operations and from vehicle and drill powerplant emissions. Road dust emissions and tailpipe emissions from drilling activities and vehicle travel along the access roads have the potential to release regulated pollutants. The Project would comply with applicable State of California and Imperial County Air District rules for fugitive dust emissions and greenhouse gas emissions.	<b>Air Quality</b>
<b>PDF-8</b>	SMP would properly dispose of waste oil, other related fluids, filters, oily rags, etc., in appropriate disposal locations. Litter and trash generated by the contractors would be collected in appropriate containers and removed as required from the Project Area. Project-related refuse would be hauled to an authorized landfill for disposal. No refuse would be disposed on-site.	<b>Hazardous Material/Solid Waste</b>
<b>PDF-9</b>	Portable toilet facilities provided for the duration of the Project would be maintained by contractors, and accumulated human waste would periodically be collected and transported to an approved disposal site. No waste would be buried on-site.	<b>Hazardous Material/Solid Waste</b>
<b>PDF-10</b>	Prior to Project activities, pre-construction migratory bird surveys would be conducted by a BLM-approved Qualified Biologist within 48 hours of proposed disturbance during the migratory bird breeding season (February 15 to August 31). These pre-construction surveys would also include vegetation surveys, including noxious and invasive species and special status species. Should active nests be identified during the pre-construction surveys, the following species-specific avoidance buffers would be implemented: 200 feet for non-ESA listed species; 300 feet for ESA listed species; and 500 feet for raptor species. No work would be conducted within the avoidance buffer areas until a BLM-approved Qualified Biologist determines that the nest is no longer active, fledglings are independent of the nest, the nest has failed, or the BLM approves a buffer reduction deemed appropriate by the Qualified Biologist. If an avoidance buffer needs to be reduced, SMP would contact the U.S. Fish and Wildlife	<b>Wildlife Resources, Vegetation</b>

Number	Project Design Feature	Resources Impacted
	Service (USFWS) and BLM and provide the necessary survey information to support the buffer reduction.	
<b>PDF-11</b>	During the bat maternity season (April 1 to August 31), SMP would implement a 500-foot avoidance buffer for drilling activities around features with evidence of use by BLM sensitive bat species. No prolonged drilling activity (i.e., drill site operations) would occur within this buffer; however, overland travel via access routes through the buffer would be permitted. SMP would utilize shielded lights that would limit nighttime drilling lighting within the avoidance buffers.	<b>Wildlife Resources</b>
<b>PDF-12</b>	To the extent possible, the Project would be completed outside the Mojave Desert tortoise ( <i>Gopherus agassizii</i> ) active season (March 15 to November 1), between November 2 and March 14.	<b>Wildlife Resources</b>
<b>PDF-13</b>	Within 24 hours of the commencement of Project activities, a BLM-approved Authorized or Qualified Biologist would inspect the area to be disturbed plus a 500-foot buffer, focusing on areas that could provide suitable desert tortoise burrow or cover sites, such as dry washes with caliche. This may be combined with the above pre-construction migratory bird survey if taking place during the nesting season. Burrows would be flagged such that they would be avoided by Project activities. When requesting authorization of biologists to handle desert tortoises, the Permittee/BLM will submit credentials to the USFWS for review and approval at least 30 days prior to the need for the biologist to perform those activities in the field.	<b>Wildlife Resources</b>
<b>PDF-14</b>	A BLM-approved Authorized or Qualified Biologist would be on-site prior to and during Project actions involving heavy machinery or any surface disturbing activities to ensure no desert tortoises are killed or burrows crushed, and Project staff are compliant with tortoise best practices.	<b>Wildlife Resources</b>
<b>PDF-15</b>	All surface disturbing activity would be limited to the land area essential for the Project. In determining these limits, consideration would be given to topography, public health and safety, placement of facilities, and other limiting factors. Work area boundaries would be appropriately marked to minimize disturbance. All workers would strictly limit their activities and vehicles to the areas marked. All workers would be trained to recognize work area markers and to understand equipment movement restrictions.	<b>Wildlife Resources</b>
<b>PDF-16</b>	All workers, including all construction and drilling contractor personnel, and others who implement Project activities would be given special instruction, which would include training on desert tortoise distribution, general behavior and ecology, protection afforded by state and federal endangered species acts (including prohibitions and penalties), procedures for reporting encounters, and the importance of following the protection measures. The education program may consist of a class or video presented by a BLM-approved Authorized or Qualified Biologist. The presentation to be used would be reviewed and approved by the BLM Wildlife Biologist or other biologist.	<b>Wildlife Resources</b>
<b>PDF-17</b>	All personnel would be notified that the desert tortoise is a species listed as threatened under the ESA and protected by	<b>Wildlife Resources</b>

Number	Project Design Feature	Resources Impacted
	state and federal law. Fines can be as high as \$50,000 and/or one year in prison for violations.	
<b>PDF-18</b>	Personnel would be notified that desert tortoises are not to be handled, fed, or harassed in any way. If encountered, tortoises would be allowed space and time to move from the area on their own volition. The only exception to this is if the tortoise is in imminent, unavoidable danger (i.e., certain to be injured or killed if no action is taken) and an Authorized Biologist is not present. In this case, Project personnel may move a desert tortoise the shortest distance necessary to remove the tortoise from imminent danger. The desert tortoise shall be monitored until an Authorized Biologist or USFWS is contacted for further instruction.	<b>Wildlife Resources</b>
<b>PDF-19</b>	If a desert tortoise is discovered in harm's way, an Authorized Biologist will move the tortoise into adjacent habitat following the latest USFWS clearance and handling procedures. The tortoise would not be moved more than 300 meters from their capture location. If the Authorized Biologist observes significant clinical signs of ill health, the tortoise should be removed from the wild in coordination with the USFWS. If suitable habitat is not available within 300 meters of the tortoises' capture locations or other land ownership restrictions prevent the release of individuals within 300 meters (e.g., privately owned land lacking permission), the tortoise should be translocated to the Recipient Site identified ( <b>Figure 3-14</b> ).	<b>Wildlife Resources</b>
<b>PDF-20</b>	Personnel who attend tortoise training will sign an attendance sheet, which would be submitted to the BLM for their information. Should BLM staff inspect the site during construction activities, workers on-site should be able to provide proof of tortoise training (a hard hat sticker is recommended for this purpose).	<b>Wildlife Resources</b>
<b>PDF-21</b>	SMP would designate a field contact representative (FCR) who would be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordination on compliance with the BLM. The FCR must be on-site during all Project activities. The FCR would have the authority to halt Project activities that are in violation of the stipulations. The FCR would have a copy of all stipulations when work is being conducted on the site. The FCR may be a crew chief or field supervisor, a project manager, any other employee of the Project Proponent, or a BLM-approved Authorized or Qualified Biologist. Any incident occurring during Project activities that is considered by the FCR to be in non-compliance with the mitigation plan would be documented immediately by the FCR. The FCR would ensure that appropriate corrective action is taken. Corrective actions would be documented by the FCR. The following incidents would require immediate cessation of the construction activities causing the incident, including: <ul style="list-style-type: none"> <li>• Imminent threat of injury or death to a desert tortoise;</li> <li>• Unauthorized handling of a desert tortoise, regardless of intent, except in the instance of imminent, unavoidable danger;</li> </ul>	<b>Wildlife Resources</b>

Number	Project Design Feature	Resources Impacted
	<ul style="list-style-type: none"> <li>• Operation of construction equipment or vehicles outside a project area cleared of desert tortoise, except on designated roads, and</li> <li>• Conducting any construction activity without a biological monitor where one is required. If a tortoise is encountered during construction activities, work would be halted in proximity to the tortoise until an on-call BLM-approved Authorized Biologist can move the animal from harm's way or until the desert tortoise leaves of its own accord.</li> </ul>	
<b>PDF-22</b>	Where possible, motor vehicle access would be limited to maintained roads and designated routes. All vehicle tracks that might encourage public use would be reclaimed after Project-specific use. Barriers would be installed to prevent unauthorized vehicular traffic and signs would be posted indicating these roads would be for authorized use only.	<b>Wildlife Resources</b>
<b>PDF-23</b>	Speed Limits: Vehicle speed within Project area, along right-of-way maintenance roads and on routes designated for limited use, would not exceed 20 miles per hour. Speed limits would be clearly marked by the Proponent, and workers would be made aware of these limits.	<b>Wildlife Resources, Access and Transportation</b>
<b>PDF-24</b>	Tortoises Under Vehicles: Vehicles parked in desert tortoise habitat would be inspected immediately prior to being moved. The practice of placing an orange cone by the driver-side door would be used as a reminder to check for tortoise before re-entering and moving the vehicle. If a tortoise is found beneath a vehicle, a BLM-approved Authorized Biologist would be contacted to move the animal from harm's way, or the vehicle would not be moved until the desert tortoise leaves of its own accord.	<b>Wildlife Resources</b>
<b>PDF-25</b>	Access roadside signs depicting a picture of desert tortoise would be posted to remind workers of the potential presence of tortoise within the Project Area.	<b>Wildlife Resources</b>
<b>PDF-26</b>	Project maintenance and construction, stockpiles of excavated materials, equipment storage, and vehicle parking would be limited to existing disturbed areas wherever possible. Should use of existing disturbed areas prove infeasible, any new disturbance would be confined to the smallest practical area, considering topography, placement of facilities, location of burrows or vegetation, public health and safety, and other limiting factors. Special habitat features, particularly tortoise burrows, would be flagged by the BLM-approved Authorized or Qualified Biologist so that they may be avoided by installation equipment and during placement of poles and anchors.	<b>Wildlife Resources, Vegetation, Soils</b>
<b>PDF-27</b>	All trash and food items generated by construction and maintenance activities would be promptly contained and regularly removed from the Project site to reduce the attractiveness of the area to common ravens and other desert predators. Portable toilets would be provided on-site if appropriate.	<b>Wildlife Resources, Hazardous Material/Solid Waste</b>
<b>PDF-28</b>	Feeding of wildlife and/or leaving of food or trash as an attractive nuisance to wildlife is prohibited. Particular attention would be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small	<b>Wildlife Resources, Hazardous Material/Solid Waste</b>



<b>Number</b>	<b>Project Design Feature</b>	<b>Resources Impacted</b>
	electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny). All trash and food items would be promptly contained within closed, wildlife-proof containers. These would be regularly removed from the Project site to reduce the attractiveness of the area to ravens and other predators.	
<b>PDF-29</b>	Domestic pets are prohibited on-site. This prohibition does not apply to the use of domestic animals that may be used to aid in official and approved monitoring procedures/protocols, or service animals under Titles II and III of the Americans with Disabilities Act.	<b>Wildlife Resources</b>
<b>PDF-30</b>	To prevent the introduction of new noxious and invasive weed species into the Project Area, all vehicles and equipment that will be used on-site transported from outside of the Project Area would be washed and cleaned prior to entering the Project Area at a designated location outside of the Project Area.	<b>Vegetation, Noxious and Non-native Invasive Species</b>
<b>PDF-31</b>	All seed mixes and natural erosion products used for reclamation would be certified weed-free.	<b>Vegetation, Noxious and Non-native Invasive Species</b>
<b>PDF-32</b>	Weed control practices would be implemented as necessary in coordination with the BLM, and non-native invasive plants would be removed manually.	<b>Vegetation, Noxious and Non-native Invasive Species</b>
<b>PDF-33</b>	All revegetation efforts in the Project Area will be done with a BLM-approved native seed mix that closely matches the surrounding vegetation type.	<b>Vegetation, Noxious and Non-native Invasive Species</b>
<b>PDF-34</b>	Pre-construction vegetation surveys, including for noxious and non-native invasive species and special status species, would be conducted in tandem with the pre-construction migration bird surveys described above. Should special status plant species be identified during Project activities, the BLM would require SMP to implement temporary barrier fencing around the individual plants for avoidance and to minimize impacts throughout the life of the Project.	<b>Vegetation, Special Status Species</b>
<b>PDF-35</b>	Injury: Should any desert tortoise be injured or killed, all activities would be halted and the BLM-approved Authorized Biologist immediately contacted. The biologist would have the responsibility for determining whether the animal should be transported to a veterinarian for care, which is paid for by the Project Proponent, if involved. If the animal recovers, the USFWS is to be contacted to determine the final disposition of the animal; few injured desert tortoises are returned to the wild.	<b>Wildlife Resources</b>
<b>PDF-36</b>	SMP has committed to avoid instances of all known cultural resources and engage in consultation with the Native American Heritage Commission and the Quechan Tribe of the Fort Yuma Reservation regarding the Project. Additionally, SMP prepared and implemented a tribal monitoring plan regarding the Project.	<b>Cultural Resources</b>
<b>PDF-37</b>	All ground-disturbing activities have the potential to unearth archaeological sites or human remains; all such discoveries on federal lands would be treated in accordance with the Native American Graves and Repatriation Act (25 USC 30001-3013) and other federal and state regulations.	<b>Cultural Resources</b>
<b>PDF-38</b>	SMP would implement site-specific fire prevention/protection actions, which would, at a minimum,	<b>Human Health and Safety</b>

Number	Project Design Feature	Resources Impacted
	include designating Project fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the Project Area.	
<b>PDF-39</b>	SMP would have a 2,000-gallon portable water storage tank on-site for dust suppression that would also be available to assist in firefighting operations. SMP would ensure that all mobile equipment be equipped with fire extinguishers, hand tools, and first aid kits. In the event of an initial, small fire that does not create enough smoke, flame, and heat to prevent fighting the fire using a hand-held fire extinguisher or a small water hose, and providing no one would be endangered, SMP personnel and/or contractors would make a reasonable effort to extinguish the fire. If two or more people are present, one would fight the fire while one reports to 911 the size, type, and location in the event the fire grows out of control. Personnel would not directly engage any fire which is beyond the incipient stage (i.e., a fire which has progressed to the point it has substantially involved any structure/equipment).	<b>Air Quality, Human Health and Safety</b>
<b>PDF-40</b>	Planning and prevention of fires would also be managed through the appropriate handling and storage of fuels, inspections, and recordkeeping, spill prevention and response procedures, proper use of safety equipment, resource management training, and fire prevention training. SMP would coordinate with local law enforcement and fire departments to provide 24-hour access as needed for emergency response.	<b>Human Health and Safety</b>
<b>PDF-41</b>	SMP would have two fuel tanks on-site that would contain no more than 1,000 gallons of diesel fuel and 300 gallons of jet fuel, respectively. To prevent the spread of any accidental leakage in storage, fuel and lubricants would be stored in a shallow (4-inch deep), 10-foot by 10-foot lined reservoir at each drill site and in an approximately 6-inch deep, 20-foot by 40-foot lined reservoir at the fueling station. During drilling operations, the drill rig would be parked on top of plastic sheeting. A spill prevention kit would be stored on-site consisting of an oil-only absorbent mat material (i.e., PIG® absorbent mat pad) and absorbent clay or shale (i.e., Oil-Dri or “kitty litter”). The volume of absorbent that would be kept on-site for potential spills is estimated to be 50 gallons at each active drill site and 100 gallons at the fueling station. As there would be up to two active drill sites at one time, an estimated 200 gallons of absorbent that would be kept on-site.	<b>Soils, Hazardous Material/Solid Waste</b>
<b>PDF-42</b>	Cellular telephone service is generally available within the Project Area site for emergency and other communications. A satellite phone would also be made available in case of emergencies. Contractors would be trained in proper emergency response, incident reporting, and general health and safety issues. All equipment would be maintained in a safe and orderly manner.	<b>Human Health and Safety</b>
<b>PDF-43</b>	A Spill Contingency Plan would be prepared to describe the procedures followed by SMP and their contractors to prevent, control, and mitigate releases of oil and petroleum products to the environment within the Project Area.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>

<b>Number</b>	<b>Project Design Feature</b>	<b>Resources Impacted</b>
<b>PDF-44</b>	Fueling would be performed on a 20-foot by 40-foot plastic sheeting over an approximately 6-inch-deep reservoir. The fueling area would be sloped gently to one corner with a small sump to contain any accidental releases of fuel.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-45</b>	Equipment servicing would be performed within the fueling area or on plastic sheeting within the drill sites.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-46</b>	A standard procedure fueling and servicing would be performed at the designated fueling stations and drill sites; however, equipment may need to be serviced at times elsewhere within the Project Area, and spill protection measures would be implemented.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-47</b>	Diesel fuel is a major consumable for the exploration equipment. Diesel fuel is available from local suppliers and would be received in tank trucks. The Project would receive and unload diesel to the on-site storage tank.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-48</b>	Diesel fuel would be offloaded using drip-less connections in a contained area to eliminate spillage contamination. The off-loading sites would be designed to drain into the main storage site containment and have a spill response kit containing booms and clean-up materials to ensure that any off-containment spillage is immediately contained and cleaned.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-49</b>	A small spill response trailer would be maintained in the Project Area to clean up any spills.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-50</b>	Inspections of fuel valves and other inlets and outlets as well as secondary containment would be made daily.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-51</b>	All site personnel that would be involved in fuel-handling would be trained in the operation and maintenance of equipment to prevent discharges.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>
<b>PDF-52</b>	The fuel tanks would be secured and locked during times when SMP personnel and contractors are not on-site.	<b>Soils, Hazardous Material/Solid Waste, Water Resources</b>

In addition to the applicant-committed PDFs, the following CMAs per the DRECP LUPA (BLM 2016), as described below, would be required by the BLM. All of the CMAs described below would be fully supported and covered financially by SMP.

**Table F-2: Conservation Management Actions**

<b>Number</b>	<b>Conservation Management Action</b>	<b>Resources Affected</b>
<b>LUPA-BIO-7</b>	Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground-disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species	Vegetation, including Noxious and Non-native Invasive Species and Special Status Species

Number	Conservation Management Action	Resources Affected
	<p>habitat disturbance/impacts as appropriate, summarized below:</p> <ul style="list-style-type: none"> <li>• Implement site-specific habitat restoration actions for the areas affected including specifying and using: <ul style="list-style-type: none"> <li>• The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed)</li> <li>• Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities)</li> <li>• Equipment</li> <li>• Timing (e.g., appropriate season, sufficient rainfall)</li> <li>• Location</li> <li>• Success criteria</li> <li>• Monitoring measures</li> <li>• Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands.</li> </ul> </li> <li>• Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site.</li> <li>• Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.</li> </ul>	
<b>LUPA-BIO-10</b>	<p>Consistent with BLM state and national policies and guidance, integrated weed management actions, will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:</p> <ul style="list-style-type: none"> <li>• Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.</li> <li>• Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.</li> <li>• Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds.</li> </ul>	Vegetation, including Noxious and Non-native Invasive Species

Number	Conservation Management Action	Resources Affected
	<ul style="list-style-type: none"> <li>• Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.</li> <li>• Reestablish native vegetation quickly on disturbed sites.</li> <li>• Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas.</li> <li>• Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.</li> </ul>	
<b>LUPA-BIO-12</b>	<p>For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise:</p> <ul style="list-style-type: none"> <li>• To the extent feasible, and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of BLM sensitive wildlife species and their suitable habitat.</li> <li>• Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.</li> <li>• Use noise controls on standard construction equipment including mufflers to reduce noise</li> </ul>	Noise; Wildlife, including Special Status Species
<b>LUPA-BIO-13</b>	<p>Implement the following CMA for project siting and design</p> <ul style="list-style-type: none"> <li>• To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species (see “avoid to the maximum extent practicable” in Glossary of Terms).</li> <li>• The siting of projects along the edges (i.e. general linkage border) of the biological linkages identified in Appendix D (Figures D-1 and D-2) will be configured (1) to maximize the retention of microphyll woodlands and their constituent vegetation type and inclusion of other physical and biological features conducive to Focus and BLM Special Status Species’ dispersal, and (2) informed by existing available information on modeled focus and BLM Special Status Species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, projects will be sited and designed to maintain the function of F Special Status Species connectivity</li> </ul>	Wildlife, including Special Status Species; Vegetation, including Noxious and Non-native Invasive Species and Special Status Species

Number	Conservation Management Action	Resources Affected
	<p>and their associated habitats in the following linkage and connectivity areas:</p> <ul style="list-style-type: none"> <li>• Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains (the majority of this linkage is within the Chuckwalla ACEC and Mule-McCoy Linkage ACEC) .</li> <li>• Within a 3-mile-wide linkage across Interstate 10 to connect the Chuckwalla and Palen mountains.</li> <li>• Within a 1.5-mile-wide linkage across Interstate 10 to connect the Chuckwalla Mountains to the Chuckwalla Valley east of Desert Center.</li> <li>• The confluence of Milpitas Wash and Colorado River floodplain within 2 miles of California State Route 78 (this linkage is entirely within the Chuckwalla ACEC).</li> </ul> <ul style="list-style-type: none"> <li>• Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species.</li> <li>• Long-term nighttime lighting on project features will be limited to the minimum necessary for project security, safety, and compliance with Federal Aviation Administration requirements and will avoid the use of constant-burn lighting.</li> <li>• All long-term nighttime lighting will be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for Focus and BLM Special Status Species. Long-term nighttime lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure.</li> <li>• To the maximum extent practicable (see Glossary of Terms), restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.</li> <li>• To the maximum extent practicable (see Glossary of Terms), confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross-country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.</li> </ul>	

Number	Conservation Management Action	Resources Affected
	<ul style="list-style-type: none"> <li>• To the maximum extent practicable(see Glossary of Terms) , construction of new roads and/or routes will be avoided within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of “no net gain” of project roads and/or routes</li> <li>• To the maximum extent practicable (see Glossary of Terms), any new road and/or route considered within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species will not be paved so as not to negatively affect the function of identified linkages.</li> <li>• Use nontoxic road sealants and soil stabilizing agents.</li> </ul>	
<b>LUPA-BIO-PLANT-2</b>	Implement an avoidance setback of 0.25 mile for all Focus and BLM Special Status Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species (see Appendix Q, Baseline Biology Report, in the Proposed LUPA and Final EIS [2015], or the most recent data and modeling).	Vegetation, including Noxious and Non-native Invasive Species
<b>LUPA-BIO-SVF-1</b>	For activity-specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: Yucca clones, creosote rings, Saguaro cactus, Joshua tree woodland, microphyll woodland, Crucifixion thorn stands. BLM guidelines for mapping/surveying cactus, yuccas, and succulents shall be followed.	Vegetation, including Noxious and Non-native Invasive Species
<b>LUPA-BIO-SVF-6</b>	Microphyll woodland: impacts to microphyll woodland (see Glossary of Terms) will be avoided, except for minor incursions (see Glossary of Terms).	Vegetation, including Noxious and Non-native Invasive Species
<b>LUPA-BIO-VEG-1</b>	Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.	Vegetation, including Noxious and Non-native Invasive Species
<b>LUPA-BIO-VEG-2</b>	Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.	Vegetation, including Noxious and Non-native Invasive Species
<b>LUPA-BIO-IFS-9</b>	Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.	Wildlife, including Threatened and Endangered Species
<b>LUPA-BIO-IFS-12</b>	If burrowing owls are present, a designated biologist (see Glossary of Terms) will conduct appropriate activity-specific biological monitoring (see Glossary of Terms) to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.	Wildlife, including Special Status Species

Number	Conservation Management Action	Resources Affected
<b>LUPA-BIO-IFS-13</b>	If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist (see Glossary of Terms) through the use of one-way doors will occur according to the specifications in Appendix D or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.	Wildlife, including Special Status Species
<b>LUPA-BIO-IFS-14</b>	Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.	Wildlife, including Special Status Species
<b>LUPA-BIO-IFS-24</b>	Provide protection from loss and harassment of active golden eagle nests through the following actions: <ul style="list-style-type: none"> <li>• Activities that may impact nesting golden eagles, will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.</li> </ul>	Wildlife, including Migratory Birds and Special Status Species
<b>LUPA-CTTM-7</b>	Manage Recreation Facilities consistent with the objectives for the recreation management areas and facilities (see also Section II.4.2.1.10).	Recreation
<b>LUPA-CUL-9</b>	Promote DRECP desert vegetation types/communities by avoiding them where possible, then use required compensatory mitigation, off-site mitigation, and other means to ensure Native American vegetation collection areas and practices are maintained.	Vegetation; Cultural Resources
<b>LUPA-CUL-11</b>	Promote and protect desert microphyll woodland vegetation type/communities to ensure Native American cultural values are maintained.	Vegetation; Cultural Resources
<b>LUPA-MIN-2</b>	Existing authorized mineral/energy operations, including existing authorizations, modifications, extensions and amendments and their required terms and conditions, are designated as an allowable use within all BLM lands in the LUPA Decision Area, and unpatented mining claims subject to valid existing rights. Amendments and expansions authorized after the signing of the DRECP LUPA ROD are subject to applicable CMAs, including ground disturbance caps within Ecological and Cultural Conservation Areas, subject to valid existing rights, subject to governing laws and regulations.	All Resources; Land Use Plan Conformance
<b>LUPA-MIN-6</b>	New or expanded mineral operations will be evaluated on a case-by-case basis, and authorizations are subject to LUPA requirements, and the governing laws and regulations.	All Resources; Land Use Plan Conformance
<b>LUPA-SW-3</b>	Where a seeming conflict between CMAs within or between resources arises, the CMA(s) resulting in the most resource protection apply.	All Resources
<b>LUPA-SW-5</b>	Exceptions to any of the specific soil and water stipulations contained in this section, as well as those listed below under the subheadings “Soil Resources,” “Surface Water,” and “Groundwater Resources,” may be granted by the authorized officer if the applicant submits a plan, or, for BLM-initiated actions, the BLM provides documentation, that demonstrates:	Water Resources



Number	Conservation Management Action	Resources Affected
	<ul style="list-style-type: none"> <li>The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.</li> </ul>	
LUPA-SW-11	Where possible, side casting shall be avoided where road construction requires cut- and-fill procedures.	Water Resources
NLCS-CUL-1	Any adverse effects to historic properties resulting from allowable uses will be addressed through the Section 106 process of the National Historic Preservation Act and the implementing regulations at 36 CFR Part 800. Resolution of adverse effects will in part be addressed via alternative mitigation that includes regional synthesis and interpretation of existing archaeological data in addition to mitigation measures determined through the Section 106 consultation process.	Cultural Resources; National Conservation Lands
NLCS-MIN-2	For the purposes of locatable minerals, California Desert National Conservation Lands are treated as “controlled” or “limited” use areas in the CDCA, requiring a Plan of Operations for greater than casual use under 43 CFR 3809.11.	National Conservation Lands
NLCS-NSHT-12	Cultural Resources – Any adverse effects to historic properties resulting from allowable uses will be addressed through the Section 106 process of the National Historic Preservation Act and the implementing regulations at 36 CFR Part 800.	Cultural Resources; National Conservation Lands
ACEC-CUL-6	Where specific threats are identified, implement protection measures consistent with agency NHPA Section 106 responsibilities.	Cultural Resources; Areas of Critical Environmental Concern

In addition to the applicant-committed PDFs and CMAs, the following mitigation measures, as described below, would be required by the BLM. All of the mitigation measures described below would be fully supported and covered financially by SMP.

**Table F-3: Required Mitigation Measures**

Number	Mitigation Measure	Resources Affected	Effectiveness and Impacts of Mitigation
M-1	SMP would install exclusionary fencing around the access road to prevent desert tortoise crossings and collisions with individual species within the Tumco Wash.	Wildlife, Special Status Species	Exclusionary fencing would limit tortoise access to roads and prevent potential mortality. Exclusionary fencing is often used to control tortoises and limit access to potentially hazardous conditions (AIDTT 2008). The impacts associated with this mitigation include additional temporary disturbance associated with the fence. Fencing would be installed on the previously disturbed ROW to reduce impacts to vegetation and wildlife habitat. All disturbance would be reclaimed as described in <b>Appendix E</b> .
M-2	Notices would be posted on the BLM’s website and at designated recreational sites in the area	Noise, Recreation	The impacts associated with this mitigation include a potential decrease in the utilization of the Project Area and surrounding public

Number	Mitigation Measure	Resources Affected	Effectiveness and Impacts of Mitigation
	notifying the public of dates and times that drilling would occur, bringing a wareness to potential elevated levels of noise and activity in the Project Area during which time recreationalists may choose to visit locations outside of the Project Area.		land by recreationalists. Recreationalists may choose to use other public lands in the surrounding area.
M-3	Idling of all vehicles would be reduced to a minimum necessary for operational capacity.	Air Quality	Limiting idling would reduce overall emissions and therefore, reduce impacts to air quality and climate change.
M-4	The staging area would be stabilized during use using BLM approved methods, and staging area soils will be stabilized upon Project completion.	Air Quality, Soils	Stabilizing the staging area would reduce fugitive dust generation from loose soils and would reduce impacts from soil erosion.
M-5	A Cultural Monitoring and Inadvertent Discovery Plan will be prepared in consultation with the BLM ECFO archaeologist and implemented prior to conducting fieldwork. Any inadvertent cultural resources discovered during construction, operations and/or reclamation would require SMP to cease all work immediately and notify the BLM Authorized Officer. The BLM Authorized Officer would then evaluate the discovery in coordination with other consulting parties to determine and implement appropriate treatment, if necessary.	Cultural Resources	<u>Periodic monitoring would reduce impacts to known sites as well as any undocumented cultural sites or sensitive areas</u> identified. SMP would implement PDFs and mitigation measures to avoid and reduce impacts to cultural resources.
M-6	All known culturally sensitive areas within 100 feet of ground-disturbing activities and access roads will be safeguarded with periodic archaeological monitoring and possibly barrier fencing, in consultation with the BLM ECFO archaeologist,	Cultural Resources	Barrier fencing would reduce accidental impacts to culturally sensitive areas from personnel and equipment. The impacts associated with this mitigation include additional temporary disturbance associated with the barrier fencing. Fencing would be placed so as to avoid impacts to vegetation. All disturbance would be reclaimed as described in <b>Appendix E</b> .
M-7	Periodic archaeological monitoring (checking fencing, access routes, and drill pad locations, etc.) will be conducted by SMP's archaeological contractor (at least once every two weeks during drilling activities) in consultation with the BLM ECFO archaeologist.	Cultural Resources	Periodic monitoring would reduce impacts to known sites as well as any undocumented cultural sites or sensitive areas. If any previously undocumented sites are identified, SMP would implement PDFs and mitigation measures to avoid and reduce impacts to cultural resources.
M-8	Pre-construction vegetation surveys would be conducted prior to commencement of Project	Vegetation, Special Status Species	Barrier fencing would reduce accidental impacts to special status plant species from personnel and equipment. The impacts

Number	Mitigation Measure	Resources Affected	Effectiveness and Impacts of Mitigation
	<p>activities and would occur in tandem with the pre-construction migratory bird surveys described in the above PDFs (Table F-1). Should special status plant species be identified during Project activities, the BLM would require SMP to implement temporary barrier fencing around the individual plants for avoidance and to minimize impacts throughout the life of the Project.</p>		<p>associated with this mitigation include additional temporary disturbance associated with the barrier fencing. Fencing would be placed so as to avoid impacts to vegetation. All disturbance would be reclaimed as described in <b>Appendix E</b>.</p>
<b>M-9</b>	<p>Netting or other applicable barriers would be placed over inactive sumps during the evaporation process and prior to backfilling to prevent wildlife entrapment.</p>	Wildlife	<p>Netting would reduce wildlife entrapment and mortality from potential wildlife ingress to inactive sumps during the evaporation process post-drilling.</p>
<b>M-10</b>	<p>Minor incursions to microphyll woodland would be avoided or mitigated when construction the temporary portal access road.</p>	Vegetation, Special Status Species	<p>Avoidance of a minor incursion would prevent impacts to present microphyll woodlands from temporary surface disturbance for construction of the portal access road and reclamation of the road upon Project completion.</p>

## Appendix G: Issues Considered as Part of the NEPA Analysis

Table G-1: Issues Considered

Determination	Issue	Rationale for Determination
PI	Air Quality	Resource is present and potentially affected; please refer to Section 3.3 for a detailed analysis.
PI	Areas of Critical Environmental Concern	Resource is present and potentially affected; please refer to Section 3.5 for a detailed analysis.
PI	Climate Change, including GHG Emissions	Resource is present and potentially affected; please refer to Section 3.6 for a detailed analysis.
PI	Conservation Lands	Resource is present and potentially affected; please refer to Section 3.7 for a detailed analysis.
PI	Cultural Resources	Resource is present and potentially affected; please refer to Section 3.8 for a detailed analysis.
PI	Environmental Justice	Resource is present and potentially affected; please refer to Section 3.10 for a detailed analysis.
NP	Farmlands (Prime or Unique)	No prime and unique farmlands are present within the Project Area; resource is not present and therefore not affected.
NI	Fire Management	Resource is present; however, there is minimal risk of fire from Project activities, and with the implementation of the PDFs, impacts would be minimized.
NP	Fish Habitat	No existing surface water other than ephemeral drainages within the Project Area; resource is not present and therefore not affected.
NP	Floodplains	No 100-year floodplains or wetlands exist within the Project Area; resource is not present and therefore not affected.
NP	Forests and Rangelands	Resource is not present and therefore not affected.
NP	Forestry Resources and Woodland Products	Resource is not present and therefore not affected.
NI	Human health and safety concerns	Drill support vehicles would occur along public BLM roads and the general public's access within the active drilling area would be temporarily limited; with the implementation of the PDFs, impacts would be minimized.
PI	Invasive, Non-native Species	Resource is present and potentially affected; please refer to Section 3.20 for a detailed analysis.
NP	Lands and Realty	No existing Right-of-Ways or land use authorizations occur within the Project Area; resource is not present and therefore not affected.
NP	Lands with Wilderness Characteristics	The Project Area is not within an area designated as Lands with Wilderness Characteristics; resource is not present and therefore not affected.
NP	Livestock Grazing Management	No rangelands are allotments are present within the Project Area; resource is not present and therefore not affected.
PI	Migratory birds and wildlife	Resource is present and potentially affected; please refer to Section 3.22 for a detailed analysis.

Determination	Issue	Rationale for Determination
NI	Mineral Resources	The Proposed Action would not involve the removal of large quantities of earth that may potentially lead to structural instability. A small amount of material would be removed from boreholes and would not affect potential mineral resources in the ground. Due to the short-term timeline of the Proposed Action and the small-scale surface disturbance for exploration activities, impacts to minerals are not anticipated; therefore, resource is present but not affected.
PI	Native American Religious Concerns	Resource is present and potentially affected; please refer to Section 3.14 for a detailed analysis.
PI	Noise Resources	Resource is present and potentially affected; please refer to Section 3.15 for a detailed analysis.
NI	Paleontological Resources	The Project Area has limited potential for fossil preservation in the colluvial sediments (Stantec 2022c); due to the short-term nature and the limited areas of impact from the Project, impacts to paleontological resources would not occur.
PI	Recreation Resources	Resource is present and potentially affected; please refer to Section 3.17 for a detailed analysis.
NP	Sage Grouse Habitat	There are no sage-grouse populations within or nearby the Project Area; resource is not present and therefore not affected.
NI	Socioeconomics	Due to the short-term and small-scale nature of exploration activities and the remote area of the Project, impacts to socioeconomic values would not occur other than a net social and economic benefit from employment opportunities related to the Project. Temporary drilling crews would be on-site at the Project during exploration operations; employees may stay temporarily on-site or off-site in the nearby communities of Winterhaven, California, El Centro, California, or Yuma, Arizona. The Proposed Action is unlikely to increase demand for short-term housing in the area or noticeably increase demand for public or private services. The Project may stimulate minor, temporary economic activity in nearby communities within Imperial County, California or in Yuma, Arizona; however, other socioeconomic impacts have not been identified and therefore socioeconomics is present but not affected.
PI	Soils	Resource is present and potentially affected; please refer to Section 3.18 for a detailed analysis.
PI	Threatened, Endangered or Candidate Plant or Animal Species	Resource is present and potentially affected; please refer to Section 3.23 for a detailed analysis.
PI	Travel and Transportation	Resource is present and potentially affected; please refer to Section 3.19 for a detailed analysis.
PI	Vegetation	Resource is present and potentially affected; please refer to Section 3.20 for a detailed analysis.
PI	Visual Resources	Resource is present and potentially affected; please refer to Section 3.21 for a detailed analysis.

<b>Determination</b>	<b>Issue</b>	<b>Rationale for Determination</b>
NI	Wastes, Hazardous or Solid	No hazardous substances would be used in the drilling program so no hazardous waste would be generated by the Project; with the implementation of PDFs and BMPs, impacts would be minimized.
PI	Water	Resource is present and potentially affected; please refer to Section 3.22 for a detailed analysis.
NP	Wetlands/Riparian Zones	No wetlands or riparian zones are present within the Project Area; resource not present and therefore not affected.
NP	Wild Horses and Burros	The Project Area is not located within a Herd Management Area; resource not present and therefore not affected.
NP	Wild and Scenic Rivers	The Project is not within one mile of a designated Wild and Scenic River; resource not present and therefore not affected.
NP	Wilderness and Wilderness Study Areas	The Project Area is not located within a designated wilderness area or wilderness study area; resource not present and therefore not affected.
PI	Wildlife	Resource is present and potentially affected; please refer to Section 3.23 for a detailed analysis.

NP = not present in the area impacted by the proposed or alternative actions.

NI = present, but not affected to a degree that detailed analysis is required.

PI = present and may be impacted to some degree; detailed analysis required.

## **Appendix H: Visual Contrast Rating Worksheets**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**VISUAL CONTRAST RATING WORKSHEET**

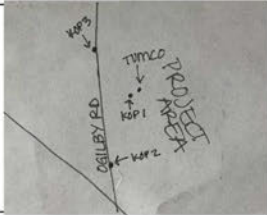
Date: 07/18/2022

District Office: California Desert District

Field Office: El Centro

Land Use Planning Area:

SECTION A. PROJECT INFORMATION

1. Project Name <b>Oro Cruz Exploration Project</b>	4. KOP Location (T.R.S) <b>T15S, R20E, S2 SWSE</b>	5. Location Sketch 
2. Key Observation Point (KOP) Name <b>KOP 1 - Tumco Parking Lot/Kiosk Area</b>	(Lat. Long) <b>32.8809, -114.8326</b>	
3. VRM Class at Project Location <b>Class III &amp; IV</b>		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	FG: Rugged, defined, circular rough rocks MG: Rugged to smooth, domed to flat BG: Jagged, rough, low to tall	FG: Sparse to clustered, irregular MG: Sparse clustered irregular BG: Indistinct	MG: Vertical and horizontal, short, linear, regular
LINE	FG: Irregular, horizontal, curving MG: horizontal, curving, jagged, diverging BG: angular, undulating, irregular	FG: Diffuse, broken, jagged, clumped MG: Diffuse, broken, indistinct in far MG BG: Indistinct	MG: Bold, perpendicular and parallel to land, simple, straight, broken posts and gate, polygon BLM sign
COLOR	FG: tan, light brown, gray, green MG: tan, brown, gray-brown BG: dark brown-gray, blue, luminous	FG: Green, brownish green, brown MG: Green, to brown, indistinct BG: Indistinct	MG: Dark brown, white writing on sign, monotone, saturated
TEXTURE	FG: Medium/coarse, clumped to stippled MG: Medium density, stippled to granular, BG: Coarse to fine, directional, contrasty	FG: Coarse, patchy to clumped, sparse MG: Coarse to fine, clumped to scattered BG: Indistinct	MG: Coarse grain, uniform distribution, ordered spatially

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	BG: Solid contrasting linear forms, irregular	BG: Contrasting, void	BG: Drilling equipment may appear as tall, linear forms; vehicles and helicopters may appear contrasting geometric forms
LINE	BG: Horizontal features against void soil disturbance	BG: Irregular, void, indistinct from vegetation removal/soil disturbance	BG: Vertical, irregular and horizontal, indistinct
COLOR	BG: Lighter exposed soils, dark drill pads and equipment against hillsides	BG: Void if vegetation is disturbed through exploration; colored where reclaimed with native reseeding	BG: Reflective, opposing colors, dark
TEXTURE	BG: Smoother, exposed soils	BG: Smooth, sparse, void, but likely indistinct from a distance	BG: Dotted, uniform, directional

SECTION D. CONTRAST RATING     SHORT TERM     LONG TERM

1.	DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverses side)  3. Additional mitigating measures recommended ___ Yes <input checked="" type="checkbox"/> No    (Explain on reverses side)
		LAND/WATER BODY				VEGETATION				STRUCTURES				
		(1)				(2)				(3)				
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	
		FORM		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
LINE		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					
COLOR		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					
TEXTURE		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					
ELEMENTS												Evaluator's Names <b>Gianni Giuliano</b> <b>Shelby Hockaday</b>	Date <b>07/18/2022</b>	



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SECTION D. (Continued)

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Comments from item 2.

VRM Class III allows for moderate changes to the characteristic landscape. The distance between the KOP and the proposed Project, approximately facing Drill Areas 2, 3, and 5 is less than one mile away; however, it is anticipated that the mountainous topography of the area would prevent much of the Project from being visible. How far disturbance occurs vertically up the mountains in the background would dictate the amount of disturbance that may be seen. Assuming disturbance occurs at higher elevations along the mountainsides or lower within the valleys/canyons of the drill areas, the degree of contrast for form, line, color and texture to land/water, vegetation, and structures has been recorded as weak. It is possible that the degree of contrast would be none if disturbance occurs lower in the valleys behind the mountains directly in front of KOP 1. Project activities may attract attention from the public due to their distance from KOP 1 and the potential visibility of recreationalists/tourists visiting the historic Tumco walking area; however, drilling equipment, drill pad construction, and vehicles traveling on access roads would have weak to indistinct contrast. A helicopter may be visible for short periods of time traveling from Drill Area 1 to Drill Areas 3 and 5, but would likely not be visible traveling to Drill Area 2 from the viewpoint of KOP 1. All visual contrast would be temporary during exploration activities and would not be constant within either Drill Areas 2, 3 or 5 or along the access roads during the life of the Project.

VRM Class IV allows for major changes to the landscape. The proposed Project is not anticipated to result in major changes to the landscape.

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Additional Mitigating Measures (See item 3)

No mitigation measures are suggested at this time. If necessary, the Proponent would coordinate with the BLM to determine additional mitigation measures.

KOP 1 – Tumco Parking Lot/Kiosk Area



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**VISUAL CONTRAST RATING WORKSHEET**

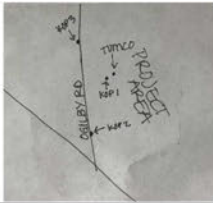
Date: 07/18/2022

District Office: California Desert District

Field Office: El Centro

Land Use Planning Area:

SECTION A. PROJECT INFORMATION

1. Project Name Oro Cruz Exploration Project	4. KOP Location (T.R.S) T15S, R20E, S14 SESW	5. Location Sketch 
2. Key Observation Point (KOP) Name KOP 2 - Pullout traveling north on Ogilby Road	(Lat. Long) 32.8525, -114.8383	
3. VRM Class at Project Location Class III & IV		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	FG: Flat, low, wide, circular round rocks MG: Low, linear to curving BG: Jagged, rough, irregular	FG: Prominent, dense irregular clusters MG: Definite to indistinct dense clusters BG: Indistinct	No structures are visible in the existing landscape
LINE	FG: weak curving lines in gravel MG: horizontal, parallel soft dirt road BG: Jagged, angular, complex to faint	FG: Irregular, perpendicular, diagonal MG: Irregular, perpendicular to horizontal BG: Indistinct	
COLOR	FG: Tan, grayish brown MG: Tan, grayish brown, light brown BG: gray to dark brown, blue, luminous	FG: Green, tan, brown MG: Green, brown to coppery BG: Indistinct	
TEXTURE	FG: fine to medium, uneven, dotted MG: medium to smooth, scatter, indistinct BG: Directional, striated, rough to smooth	FG: Coarse, clumped to sparse MG: Coarse to smooth, slight gradation BG: Indistinct	

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	BG: Solid contrasting linear forms, irregular, faint	BG: Contrasting, void, indistinct	BG: Drilling equipment may appear as tall, linear forms; vehicles and helicopters may appear contrasting geometric forms
LINE	BG: Horizontal features against void soil disturbance	BG: Irregular, void, indistinct from vegetation removal and soil disturbance from distance	BG: Vertical, irregular and horizontal, to indistinct
COLOR	BG: Lighter exposed soils, dark drill pads, equipment against/atop hillsides, contrasting vehicle traffic on access road	BG: Void if vegetation is disturbed in locations visible from KOP, colored where reclaimed with native reseeding	BG: Reflective opposing colors, dark
TEXTURE	BG: Smoother, exposed soils but weak/faint	BG: Smooth, sparse, void, likely indistinct from distance	BG: Dotted, uniform, directional

SECTION D. CONTRAST RATING     SHORT TERM     LONG TERM

1.	DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverses side)  3. Additional mitigating measures recommended <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    (Explain on reverses side)
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	
		FORM		✓				✓				✓		
		LINE		✓				✓				✓		
COLOR		✓				✓				✓				
TEXTURE		✓				✓				✓				
ELEMENTS														
												Evaluator's Names Gianni Giuliano Shelby Hockaday	Date 07/18/2022	

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SECTION D. (Continued)

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Comments from item 2.

VRM Class III allows for moderate changes to the characteristic landscape. KOP 2 is approximately two miles away from the proposed Project, specifically Drill Area 6 at the south end of the Project Area. It is anticipated that much of the Project would not be visible from this KOP due to the mountainous topography and proposed Project layout; however, some drilling equipment may be faintly visible in the far background atop/against the mountains and a helicopter may be temporarily visible during travel to Drill Area 6. How far disturbance occurs vertically up the mountains in the background would dictate the amount of disturbance that may be seen from KOP 2. Assuming disturbance occurs at higher elevation along the backsides of the mountains visible from this KOP, and potentially atop or along the front sides of the mountains, and lower valleys/canyons within the drill areas, the degree of contrast for form, line, color, and texture to land/water, vegetation, and structures has been recorded as weak. It is possible that the degree of contrast would be none if disturbance occurs lower in the valleys behind the face of the mountains directly in front of KOP 2. Project activities may attract attention from the public due to their distance from KOP 1, however, drilling equipment, drill pad construction, and vehicles traveling on the access road would have weak to indistinct contrast. All visual contrast would be temporary during exploration activities and would not be constant within Drill Area 6 or along the access roads during the life of the Project.

VRM Class IV allows for major changes to the landscape. The proposed Project is not anticipated to result in major changes to the landscape.

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Additional Mitigating Measures (See item 3)

No mitigation measures are suggested at this time. If necessary, the Proponent would coordinate with the BLM to determine additional mitigation measures.

KOP 2 – Pullout Traveling North on Ogilby Road



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**VISUAL CONTRAST RATING WORKSHEET**

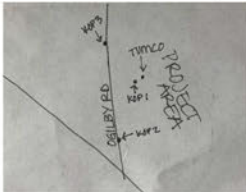
Date: 07/18/2022

District Office: California Desert District

Field Office: El Centro

Land Use Planning Area:

SECTION A. PROJECT INFORMATION

1. Project Name <b>Oro Cruz Exploration Project</b>	4. KOP Location (T.R.S) <b>T15S, R20E, S2 SENW</b>	5. Location Sketch 
2. Key Observation Point (KOP) Name <b>KOP 3 - Pullout traveling south on Ogilby Road</b>	(Lat. Long) <b>32.8895, -114.8391</b>	
3. VRM Class at Project Location <b>Class III &amp; IV</b>		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	FG: Flat, linear road, parallel soil edges MG: Rough to smooth, flat, wide BG: irregular to smooth, indistinct	FG: Simple, vertical to complex shrubs MG: Sparse to amorphous BG: Indistinct	MG: Tall, linear narrow power poles with diagonal supports
LINE	FG: Linear, horizontal, straight, bold MG: Soft, weak converging soil lines BG: Angular jagged mts to smooth sky	FG: Bold to weak, subangular to smooth MG: Irregular, soft to weak BG: Indistinct	MG: Vertical, straight, simple
COLOR	FG: Gray, yellow, tan, black MG: Tan, brownish gray BG: Gray, black, brown, blue, luminous	FG: Green, brown to olive green MG: Greenish brown to indistinct, weak BG: Indistinct	MG: dark hue contrasted with background, monochrome
TEXTURE	FG: Fine to medium, cracked, rough soils MG: Gradational, coarse to smooth BG: Jagged rough mts to smooth sky	FG: Sparse to clustered/dense MG: Medium grain, low contrast, uneven BG: Indistinct	MG: Smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	BG: Solid contrasting linear forms, irregular and weak	BG: Contrasting, void, indistinct	BG: Drilling equipment may appear tall, linear forms in the far BG, vehicles & helicopters may appear contrasting
LINE	BG: Horizontal and vertical features against void soil disturbance	BG: Irregular, void, indistinct from vegetation removal/soil disturbance	BG: Vertical, irregular and horizontal, indistinct, visibility would be faint
COLOR	BG: lighter exposed soils but faint, dark drill pads and equipment faint against hillsides	BG: Void if vegetation is disturbed but would be very faint; colored and uniform where reclaimed with native reseeding	BG: Reflective, opposing colors, faint
TEXTURE	BG: smoother, exposed soils, irregular	BG: smooth, sparse, void, likely indistinct in far BG	BG: Dotted, uniform, directional, indistinct

SECTION D. CONTRAST RATING     SHORT TERM     LONG TERM

1.	DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverses side)  3. Additional mitigating measures recommended ___ Yes <input checked="" type="checkbox"/> No    (Explain on reverses side)
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	STRONG	MODERATE	WEAK	NONE	
		FORM		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		
		LINE		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		
COLOR		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				
TEXTURE		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				
ELEMENTS														
												Evaluator's Names <b>Gianni Giuliano</b> <b>Shelby Hockaday</b>	Date <b>07/18/2022</b>	

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SECTION D. (Continued)

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Comments from item 2.

VRM Class III allows for moderate changes to the characteristic landscape. The distance between the KOP and the proposed Project, approximately facing Drill Area 3 is approximately one mile away. It is anticipated that the mountainous topography and the direction of the KOP facing the Project Area with tall vegetation in the foreground to middleground would prevent much of the Project from being visible. How far disturbance occurs vertically up the mountains into the background would dictate the amount of disturbance that may be seen, and much of the proposed disturbance would likely occur behind the face of the mountains that is not visible from KOP 3. Assuming disturbance occurs at higher elevations along the mountainsides or lower within the valleys/canyons of the drill areas, behind the face of the mountains visible from KOP 3, the degree of contrast for form, line, color, and texture to land/water, vegetation, and structures has been recorded as weak. It is possible that the degree of contrast would be none if disturbance occurs lower in the valleys or along the backside of the mountains as anticipated rather than along the mountain edges visible from KOP 3. Project activities may attract attention from the public due to their distance from KOP 3 and the potential visibility by travelers driving on Ogilby Road; however, drilling equipment, drill pad construction, and vehicles traveling on access roads would have weak to indistinct contrast. A helicopter may be visible for short periods of time traveling from Drill Area 1 to Drill Area 3, but would be temporary and inconsistent. All visual contrast would be temporary during exploration activities and would not be constant within all drill areas, including Drill Area 3 that has the potential to be visible from KOP 3, or along the access roads during the life of the Project.

VRM Class IV allows for major changes to the landscape. The proposed Project is not anticipated to result in major changes to the landscape.

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Additional Mitigating Measures (See item 3)

No mitigation measures are suggested at this time. If necessary, the Proponent would coordinate with the BLM to determine additional mitigation measures.

KOP 3 – Pullout Traveling South on Ogilby Road





## Appendix J: List of Preparers

Table J-1: NEPA Preparers (Stantec Consulting Services Inc.)

Name	Title	Resource Area
Shelby Hockaday	Project Manager	NEPA Manager, Lead Author
Steve Morton	Principal	Senior Review, Cumulative
Hayley Barnes	Environmental Scientist	Project Coordinator, Recreation, Soils
Jason Trook	GIS Analyst	GIS Support
Shantanu Kongara	Air Specialist	Air Quality, Climate Change and Greenhouse Gases
Ellen Brady	Archaeologist	Cultural Resources, Native American Religious Concerns and Traditions
Sierra Marke	Environmental Scientist	Soils
Ian Dudley	Environmental Scientist	Wildlife, including Migratory Birds, Special Status Species, and Threatened and Endangered Species
Gianni Giuliano	Technical Writer	Visual Resources
Dani Putney	Project Coordinator	Technical Editor/Formatting

Table J-2: CEQA Preparers (Sespe Consulting, Inc.)

Name	Title	Resource Area
John Hecht	President	CEQA, Reclamation
Graham Stephens	Project Manager	CEQA

Table I-3: Bureau of Land Management

Name	Title	Resource Area
Mayra Martinez	Geologist	Project Manager
Carrie Sahagun	Associate Field Manager	Senior Review
Jennifer Whyte	Field Manager (Detailed)	Field Manager Coordination and Oversight
Christian Rodriguez	Planning and Environmental Specialist, El Centro Field Office	NEPA Review
Regan Watt	Planning and Environmental Specialist, California Desert District Office	NEPA Review
Amy McGowan	Planning and Environmental Specialist, California State Office	NEPA Review
Peter DeJongh	Wildlife Biologist	Wildlife Resources, Vegetation, Invasive and Non-Native Noxious Weeds, Threatened and Endangered Species
Grant Day	Archaeologist	Cultural Resources, Native American Religious Concerns and Traditions
John Johnson	Visual Resources Specialist	Visual Resources
Ismael Ramirez	Natural Resource Specialist	General Biology, Vegetation, Invasive and Non-Native Noxious Weeds, Air Quality, Soil, and Water Resources
Hannah Robinson	Archaeologist, California Desert District Office	Cultural Resources, Native American Religious Concerns and Traditions

Name	Title	Resource Area
Frank Giles	Air Resource Specialist, California and Nevada	Air Quality, Climate Change, and Greenhouse Gases

Table J-4: Imperial County Planning Department

Name	Title	Resource Area
Michael Abraham	Assistant Planning & Development Services Director	CEQA