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# Biological Resources Assessment

## SOLEDAD MOUNTAIN PROJECT KERN COUNTY, CALIFORNIA

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**Date:**

November 2019



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## **LIST OF ABBREVIATIONS AND ACRONYMS**

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
ESA	Federal Endangered Species Act
Inventory	CNPS Inventory of Rare and Endangered Plants of California
MBTA	Migratory Bird Treaty Act of 1918
Rank	California Rare Plant Rank
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WBWG	Western Bat Working Group
WRA, Inc.	WRA

## 1.0 INTRODUCTION

On May 30-31, 2018, WRA, Inc. (WRA) conducted an assessment of biological resources on lands subject to the proposed modification of the existing Soledad Mountain Project in unincorporated Kern County, California. The Soledad Mountain Project (the Mine) is an existing open pit, gold/silver, heap leach, mining and aggregate operation (the Project) approximately 5 miles south of the town of Mojave, California. The Project is operated by GQMC; construction of the Project began in 2014 and full-scale mining commenced in March 2015.

The Project was originally approved by Kern County in 1997, however, mining operations did not commence due to depressed gold prices. In 2012, GQMC received County approval of a smaller project within the footprint of the 1997 Project, and is currently operating pursuant to that approval. Two major environmental review processes were completed for the Project in connection with the 1997 and 2012 approvals: 1) a joint National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) analysis completed in 1997 (Kern County and BLM 1997), and 2) a supplemental CEQA process completed in 2010 (Kern County 2010) with County approval in 2012. GQMC is proposing to modify the mine entitlements to re-authorize mining in substantially the same configuration as originally approved by Kern County in 1997.

The Project would modify the Mine's existing approvals to allow mining and aggregate operations in certain areas within a prior Mine approval footprint and within certain additional areas (the "Permit Modification Area"). The Permit Modification Area is conservatively defined as those areas that are within the currently proposed project boundary (the Modified Project Boundary) and outside of the 2012 Approved Project Boundary as depicted in Figure 1. The Permit Modification Area includes areas that were approved as part of the 1997 Project. This is a conservative definition of the Modified Project Boundary because, under CEQA's subsequent review standards, this report is required only to analyze Project impacts to areas not analyzed in the prior CEQA document (the 1997 EIR/EIS). Instead, this report analyzes some areas that were addressed in the 1997 EIR/EIS as well as areas that were not in order to provide a more complete assessment of biological resources.

The Permit Modification Area consists of areas within portions of Sections 5, 6, 7, 8 and 18, T10N/R2W; portions of Sections 1 and 12, T10N/R13W; and portions of Section 32 and 36, T11N/R12W, San Bernardino Base and Meridian (SBBM), located on and in the vicinity of Soledad Mountain, where the active GQMC Mine is located. The parcels vary in size from approximately 2 to 400 acres. This report describes the results of the biological resources assessment, which assessed the Permit Modification Area for the potential to support special-status plant and wildlife species and sensitive natural communities.

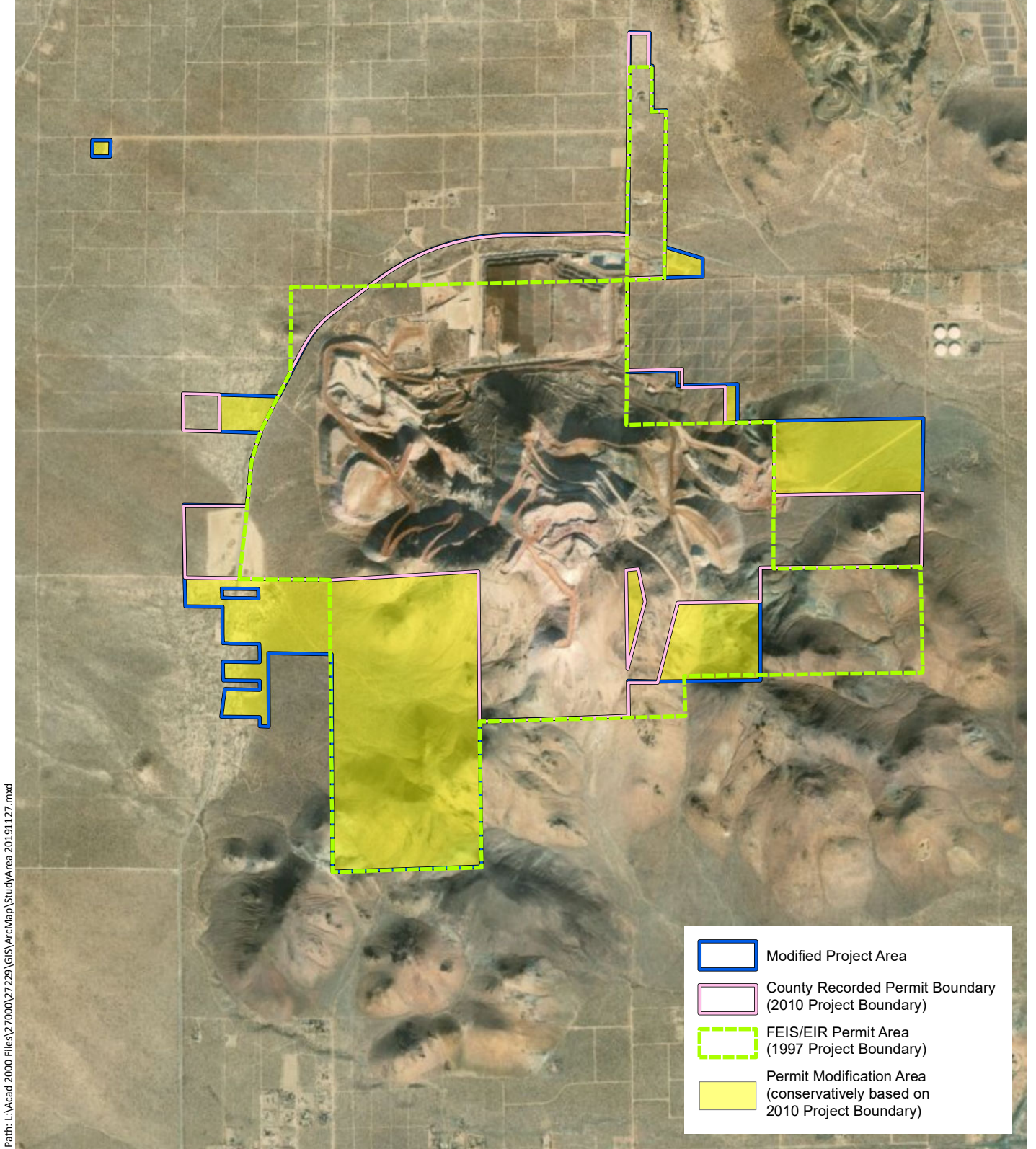
This biological resources assessment provides general information on the potential presence of sensitive species and habitats. The biological resources assessment does not include protocol-level surveys for listed species that may be required after project approval by local, state, or federal agencies. This assessment is based on information available at the time of the survey and on-site conditions that were observed on May 30-31, 2018 and in previous site visits.

## **2.0 REGULATORY BACKGROUND**

The following sections explain the regulatory context of the biological resources assessment, including applicable laws and regulations that were considered during the field investigation.

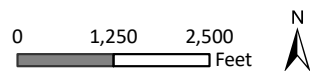
### **2.1 Sensitive Natural Communities**

Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife (CDFW). The CDFW ranks sensitive communities (alliances) as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB; CDFW 2019). CNDDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2019) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or USFWS must be considered and evaluated under the California Environmental Quality Act (CEQA) (CCR Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.



**Figure 1. Permit Modification Area**

Golden Queen Mine  
Kern County, California



## 2.2 Special-status Species

Special-status species include plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. The federal Bald and Golden Eagle Protection Act also provides broad protections to both eagle species that in some regards are similar to those protected by the ESA. Additionally, the CDFW Species of Special Concern, CDFW California Fully Protected species, United States Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW Special-status Invertebrates are all considered special-status species. Although these aforementioned species generally have no special legal status, they are given special consideration under CEQA. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity. Bats named as a “High Priority” or “Medium Priority” species for conservation by the WBWG are typically considered special-status and also considered under CEQA. In addition to regulations for special-status species, most native birds in the United States (including non-status species) are protected by the federal Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code (CFGC), i.e., sections 3503, 3503.5 and 3513. Under these laws, deliberately destroying active bird nests, eggs, and/or young is illegal<sup>1</sup>.

Plant species on the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (Inventory; CNPS 2019) with California Rare Plant Ranks (Rank) of 1, 2, and sometimes 3 are also considered special-status plant species and must be considered under CEQA. Rank 4 and some Rank 3 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. A description of the CNPS Ranks is provided below in Table 1.

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<sup>1</sup>The U.S. Department of the Interior recently issued guidance clarifying that the MBTA only applies to intentional/deliberate killing, harm or collection of covered species (including active nests) (USDOI 2017). According to the guidance, unintentional impacts to birds/nests that occur within the context of otherwise lawful activities are not MBTA violations. However, ambiguity remains regarding application of the CFGC, as well as the extent to which minimization and avoidance measures are still required under the MBTA. Additionally, challenges to the Opinion are anticipated.

Table 1. Description of CNPS Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

### 2.3 Critical Habitat

Critical habitat is a term defined in the ESA as a specific and designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

### 2.4 California Desert Native Plants Act

The California Desert Native Plants Act (Division 23 of the California Food and Agriculture Code) was established in 1981 to protect California desert native plants from unlawful harvesting. The act establishes that a permit be issued by the subject county for the harvesting of a defined list of California native plant species. Violation of this act may result in fines.

## 3.0 METHODS

On May 30 and 31, 2018, the Study Area was traversed on foot to determine if existing conditions provided suitable habitat for any special-status plant or wildlife species or sensitive natural communities. All plant species encountered during the assessment were identified using the Jepson Manual, Second Edition (Baldwin et al. 2012) and subsequent revisions by the Jepson Flora Project (2019). Nomenclature follows the Jepson Flora Project (2019). For cases in which regulatory agencies, CNPS, or other entities base rarity



on older taxonomic treatments, precedence was given to the treatment used by those entities.

### **3.1 Natural Communities**

Prior to the assessment of the Permit Modification Area, an online soil survey of the Permit Modification Area (CSRL 2019) was examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were potentially present in the Permit Modification Area. Natural communities present in the Permit Modification Area were classified based on existing plant community descriptions described in the *Manual of California Vegetation* (Sawyer et al. 2009). Natural communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

#### *3.1.1 Non-sensitive Natural Communities*

Non-sensitive natural communities are those communities that are not afforded special protection under state, federal, and local laws, regulations, and ordinances that we deemed any loss of would not be significant under CEQA.

#### *3.1.2 Sensitive Natural Communities*

Sensitive natural communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive natural communities are discussed below.

### **3.2 Special-status Species**

#### *3.2.1 Literature Review*

Potential occurrence of special-status species in the Permit Modification Area was evaluated by first determining which special-status species occur in the vicinity of the Permit Modification Area through a literature and database search. All but a 2-acre portion of the Permit Modification Area is located within the Soledad Mountain 7.5-minute U.S. Geological Survey (USGS) quadrangle. The 2-acre portion is located within the Mojave 7.5-minute USGS quadrangle, just over the northern boundary of the Soledad Mountain quadrangle, but because habitat there is similar to the remainder of the Permit Modification Area, database searches for known occurrences of special-status species focused on the Soledad Mountain quadrangle. Although the site assessment was conducted in 2018, updated database searches were conducted in November 2019 to determine whether any additional species had been documented in the vicinity of the Permit Modification Area. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Permit Modification Area:

- CNDDDB records (CDFW 2019)
- USFWS Information for Planning and Conservation Species Lists (USFWS 2019)
- CNPS Inventory records (CNPS 2019)

### 3.2.2 Site Assessment

A site visit was made to the Permit Modification Area to search for suitable habitats for special-status species. Habitat conditions observed at the Permit Modification Area were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologist. The potential for each special-status species to occur in the Permit Modification Area was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e., CNDDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity to determine its potential to occur in the Permit Modification Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species.

## 4.0 RESULTS

The Permit Modification Area is situated on the upper and lower slopes of Soledad Mountain, as well as in the flats and alluvial fans surrounding the mountain. Elevations range from approximately 2,685 feet at the eastern base of Soledad Mountain to 4,030 feet near the summit of the mountain (Google Earth 2018). The portions of the Permit Modification Area on the slopes of Soledad Mountain are often steep and rocky, whereas the portions of the Permit Modification Area on alluvial fans and flats have low-gradient slopes and consist of sandy substrate. Small ephemeral drainages are present in several of the parcels. Small portions of the Permit Modification Area overlap with developed features such as paved and unpaved public roads, active mining roads, built structures, and in the far northeastern parcel, a manmade retention basin. Vegetation throughout the Permit Modification Area is often low-density and in most cases characterized as scrub, with the dominant species being white bursage (*Ambrosia dumosa*) and creosote bush (*Larrea tridentata*). A stand of Joshua trees (*Yucca brevifolia*) is present on an alluvial fan at the western base of Soledad Mountain.

Two parcels that occur along Mojave Tropico Road (one is just south of the intersection with Mountain View, the other is just north of the intersection with Laguna Ave) are situated at the western base of Soledad Mountain in slight topographic basins, and consist of finer-textured substrate, mapped as Rosamond clay loam, saline/alkali (CSRL 2019), on nearly

level terrain. While vegetation is sparser here than elsewhere in the Permit Modification Area, the dominant species are still generally creosote bush and white bursage, with one exception. A portion of the parcel south of Mountain View contains scrub characterized by allscale (*Atriplex polycarpa*), indicative of higher salinity in the substrate.

The following sections present the results and discussion of the biological constraints assessment within the Permit Modification Area.

#### **4.1 Sensitive Natural Communities**

The Permit Modification Area contains one sensitive natural community, Joshua tree woodland, which is discussed below. The Permit Modification Area contains no other sensitive natural communities.

##### **Joshua tree woodland (*Yucca brevifolia* Woodland Alliance); CDFW Rank: G4 S3**

Joshua tree woodland occurred on the alluvial fan at the base of the western slope of Soledad Mountain, east of Mojave Tropic Road. Joshua tree cover was open and at least 1 percent, and individuals were evenly distributed. The stand was otherwise shrub-dominated, with the most abundant species being creosote bush and white bursage. Joshua tree woodland has an S3 ranking and is therefore considered sensitive by the CDFW.

#### **4.2 Special-status Species**

##### *4.2.1 Special-status Plant Species*

Based upon a review of the resources and databases given in Section 3.2.1, four special-status plant species have been documented in the vicinity of the Permit Modification Area, and all four have moderate potential to occur within the Permit Modification Area.

##### **Alkali mariposa lily (*Calochortus striatus*), CNPS Rank 1B.2. Moderate.**

This species is found in chaparral, chenopod scrub, Mojavean desert scrub, meadows and seeps at elevations that range from 225 to 5,235 feet. Within the Permit Modification Area, this species has moderate potential to occur in the allscale scrub habitat in the parcel south of the intersection of Mountain View and Mojave Tropic Road. It is unlikely to occur in the remainder of the Permit Modification Area because of the absence of halophytic scrub (e.g., saltbush species [*Atriplex* spp.]) habitats. This species was not observed during the site assessment on May 30-31, 2018 (WRA) or during surveys conducted November 15-17, 2018 by Kent Hughes Consulting.

##### **Mojave spineflower (*Chorizanthe spinosa*), CNPS Rank 4.2. Moderate.**

This species is found in chenopod scrub, Joshua tree woodland, Mojavean desert scrub and playas at elevations ranging from 15 to 4,265 feet. It blooms from March through July. The Permit Modification Area contains suitable sandy to gravelly soils and known associated desert scrub and woodland species. This species has moderate potential to occur throughout the Permit Modification Area where such substrate is present. This species was not observed during the site assessment on May 30-31, 2018 (WRA) or during surveys conducted November 15-17, 2018 by Kent Hughes Consulting 2018.

**Recurved larkspur (*Delphinium recurvatum*), CNPS Rank 1B.2. Moderate.**

This species occurs within chenopod scrub, cismontane woodland, valley and foothill grassland at elevations ranging from 5 to 2,590 feet. It blooms from March to June. This species has moderate potential to occur in allscale scrub habitat in the parcel south of the intersection of Mountain View and Mojave Tropico Road. It is unlikely to occur in the remainder of the Permit Modification Area because of the absence of halophytic scrub (e.g., saltbush species [*Atriplex* spp.]) habitats. This species was not observed during the site assessment on May 30-31, 2018 (WRA) or during surveys conducted November 15-17, 2018 by Kent Hughes Consulting.

**Sagebrush Loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), CNPS Rank 2B.2. Moderate**

This species is found in desert dunes, great basin scrub, and Sonoran desert scrub at elevations ranging from 2,295 to 5,300 feet. It blooms from April through May. The Permit Modification Area contains suitable sandy to gravelly soils and known associated desert scrub and woodland species. This species has moderate potential to occur throughout the Permit Modification Area where such substrate is present. This species was not observed during the site assessment on May 30-31, 2018 (WRA) or during surveys conducted November 15-17, 2018 by Kent Hughes Consulting.

**4.2.2 Special-status Wildlife Species**

Based upon a review of the resources and databases listed in Section 3.2.1, 13 special-status wildlife species have been documented in the vicinity of the Permit Modification Area. Thirteen special-status wildlife species were considered to be present or have low to moderate potential to occur in the Permit Modification Area and are discussed below. The remaining species are considered unlikely, or have no potential to occur in the Permit Modification Area for one or more of the following reasons:

- The Permit Modification Area is outside of the known or historical range of the species; or
- The Permit Modification Area lacks suitable nesting structures.

The following species were determined to have adequate conditions and locality to warrant a moderate or high potential to occur or are known to be present within the Permit Modification Area. In addition, native nesting birds and roosting bats are protected by the MBTA and CGFC.

**Townsend's big-eared bat, (*Corynorhinus townsendii townsendii*), CDFW Species of Special Concern, WBWG High Priority. Present.** This species ranges throughout western North America from British Columbia to central Mexico. Its local distribution is strongly associated with the presence of caves, but roosting also occurs within man-made structures including mines and buildings. While many bat species wedge themselves into tight cracks and crevices, big-eared bats hang from walls and ceilings in the open. Males roost singly during the spring and summer months while females aggregate in the spring at maternity roosts to give birth. Females roost with their young until late summer or early fall, until the young become independent, flying and foraging on their own. In central and southern California, hibernation roosts tend to be made up of small aggregations of individuals (Pierson and Rainey 1998). Foraging typically occurs along edge habitats near streams and wooded areas, where moths are the primary prey (WBWG 2015).

Townsend's big-eared bats have been documented using mine features (primarily adits and excavations from past mining activities on Soledad Mountain) within the Permit Modification Area during bat surveys in 2006 (Brown and Berry 2007) and guano was noted during mine feature evaluations in 2018 (Sherwin 2018).

**Ringtail, (*Bassariscus astutus*), CDFW Fully Protected Species. Present.** The ringtail (also known as "ring-tailed cat") is an uncommon but widespread resident of California, excluding the Central Valley, south to Mexico. This species is found in remote riparian habitats, rocky canyons, and brush stands of forest and shrub habitats that contain trees, brush, and rock crevices for cover. This species is also usually found within 0.6 mi of water (Zeiner et al. 1990). Hollow trees, snags, rock crevices, and other cavities are used for cover and nesting. Ringtails are primarily carnivorous and mostly nocturnal.

Ringtail tracks were observed within a mine adit during bat surveys in 2006 (Brown and Berry 2007).

**Swainson's hawk (*Buteo swainsoni*). State Threatened, USFWS Bird of Conservation Concern. Present.** Swainson's hawk is a summer resident and migrant in California's Central Valley and scattered portions of the southern California interior. Nests are constructed of sticks and placed in trees located in otherwise largely open areas. Areas typically used for nesting include the edge of narrow bands of riparian vegetation, isolated patches of oak woodland, lone trees, and also planted and natural trees associated with roads, farmyards and sometimes adjacent residential areas. Foraging occurs in open habitats, including grasslands, open woodlands, and agricultural areas. While breeding, adults feed primarily on rodents (and other vertebrates); for the remainder of the year, large insects (e.g., grasshoppers, dragonflies) comprise most of the diet. In many areas, Swainson's hawks have adapted to foraging primarily in and around agricultural plots (particularly alfalfa, wheat and row crops), as prey is both numerous and conspicuous at harvest and/or during flooding or burning (Bechard et al. 2010).

One Swainson's hawk was observed during burrowing owl surveys in 2018 (Kent Hughes Consulting 2018). No Swainson's hawk nests have been documented in or near the Permit Modification Area; the nearest record is approximately 7 miles to the southwest (CDFW 2019). However, this species has the potential to nest on Joshua trees within or near the Permit Modification Area.

**Northern harrier (*Circus hudsonius [cyaneus]*). CDFW Species of Special Concern. Present.** The northern harrier occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands (Shuford and Gardali 2008). Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates.

While northern harrier was observed during burrowing owl surveys in 2018 (Kent Hughes Consulting 2018), this likely was a migrating or foraging individual as suitable breeding habitat for this species is not found within the Permit Modification Area.

**Prairie falcon (*Falco mexicanus*), USFWS Bird of Conservation Concern. Present.** This is an uncommon resident and migrant that ranges from southeastern deserts northwest along the Coast Ranges and Sierra Nevada. It occurs in many habitats, but

typically is associated with grasslands, savannahs, rangeland, agricultural areas, and desert scrub. Prairie falcons construct their nests on cliffs or other escarpments overlooking their hunting grounds (Johnsgard 1990). While other falcons primarily forage on birds, the majority of this species' diet consists of small mammals. They will seasonally take birds when mammals are scarce (Steenhof 2013).

Prairie falcons have been documented within the Permit Modification Area, most recently in 2018 at an apparent nesting site approximately 1 mile south of the active mine (WRA 2018).

**Burrowing owl (*Athene cunicularia*). CDFW Species of Special Concern; USFWS Bird of Conservation Concern. Present.** The burrowing owl occurs as a year-round resident and winter visitor in much of California's lowlands, inhabiting open areas with sparse or non-existent tree or shrub canopies. Typical habitat is annual or perennial grassland, although human-modified areas such as agricultural lands and airports are also used (Poulin et al. 1993). This species is dependent on burrowing mammals to provide the burrows that are characteristically used for shelter and nesting, and in northern California is typically found in close association with California ground squirrels (*Spermophilus beecheyi*). Manmade substrates such as pipes or debris piles may also be occupied in place of burrows. Prey consists of insects and small vertebrates. Breeding typically takes place from March to July.

Despite Hughes (2018) reporting that burrowing owl have been observed foraging on the mine property periodically since approximately 2003, surveys for burrowing owls conducted by K.W. Hughes Biological Consulting 2015, 2016, and 2017 (Hughes 2015, 2016, 2017) did not find any burrowing owls, burrowing owl burrows, or burrowing owl signs within the mine property. However, while burrowing owls may use the project site for foraging, there is no evidence that they are currently using the site for breeding.

**Le Conte's thrasher (*Toxostoma lecontei*). CDFW Species of Special Concern. USFWS Bird of Conservation Concern. Present.** The Le Conte's thrasher is a resident of the Sonoran and Mojave deserts in California. This species nests in thorny shrubs or small desert trees where shade is available. Le Conte's thrashers prey primarily on insects although lizards and eggs may be taken. Cacti, saltbushes and other shrubs, yuccas (including small Joshua trees), and mesquites are favored plants for nest sites. Females will lay two to five eggs per clutch and may lay up to three clutches per year (Weigand and Fitton 2008).

Le Conte's thrasher has been documented within the Permit Modification Area during previous surveys (Bamberg 1997) and may use the area for nesting and foraging.

**Loggerhead shrike (*Lanius ludovicianus*), CDFW Species of Special Concern, USFWS Bird of Conservation Concern. Present.** The loggerhead shrike is a year-round resident and winter visitor in lowlands and foothills throughout California. This species is associated with open country with short vegetation and scattered trees, shrubs, fences, utility lines and/or other perches. Although they are songbirds, shrikes are predatory and forage on a variety of invertebrates and small vertebrates. Captured prey items are often impaled for storage purposes on suitable substrates, including thorns or spikes on vegetation, and barbed wire fences. Nests in trees and large shrubs; nests are usually placed three to ten feet off the ground (Shuford and Gardali 2008).

Loggerhead shrikes have been observed within the Permit Modification Area and likely use the area for nesting and foraging (Bamberg 1997, Sunrise 2009, Kent Hughes Consulting 2018).

**American peregrine falcon (*Falco peregrinus anatum*); Federal Delisted, State Delisted, CDFW Fully Protected, USFWS Bird of Conservation Concern. Present.** This large falcon occurs as a generally uncommon resident as well as a winter visitor and migrant throughout much of California. Occupied habitat (both breeding and non-breeding) is highly variable, but this species is typically associated with open areas and/or bodies of water. Nesting typically occurs on the ledges of steep cliffs, or on man-made structures with ledges above sheer faces such as bridges and the tops of buildings (White et. al 2002). The peregrine falcon preys upon a wide variety of animals, mostly birds; on the Pacific coast, waterbirds (e.g., waterfowl, shorebirds and seabirds) are especially favored (White et. al 2002). This species forages over wide areas, even during the breeding season.

Peregrine falcons have been documented just north of the Permit Modification Area and may use the area for foraging (Bamberg 1997); however, no evidence of nesting peregrine falcons have been observed.

**Mohave shoulderband (*Helminthoglypta greggi*). Present.** This terrestrial snail inhabits rock features that provide interstitial spaces for shelter and foraging opportunities (USFWS 2017a). Similar to other desert snails, the Mohave shoulderband is active for a brief period following winter rains and aestivates during dry periods of the year (USFWS 2017a). The Mohave shoulderband is known only from three locations, including Soledad Mountain, Standard Hill, and Middle Butte in Kern County.

**Desert tortoise (*Gopherus agassizii*). Federally Threatened. State Threatened. Moderate potential.** The desert tortoise is native to the Mojave and Sonoran deserts of the southwestern United States and northern Mexico. They occupy alluvial fans, washes, and canyons from near sea level to around 3,500 feet where friable soils are suitable for den construction. Tortoises excavate burrows as cover from predators and thermal extremes. Grasses form the bulk of their diet, but these tortoises will also eat herbs, annual wildflowers, and new growth of cacti, as well as their fruit and flowers. Much of their water intake comes from moisture in the grasses and wildflowers they consume in the spring. Females will lay a clutch of three to five hard-shelled eggs in June or July, which hatch in August or September. They can produce up to three clutches a year.

Surveys for Mohave desert tortoise were conducted in 1990, 1995, and 2009 (Bamberg 1997, Sunrise 2009). No tortoise or sign of tortoise were observed during these surveys. One mummified desert tortoise was found within a mine adit during bat surveys in 1990 (Bamberg 1997) and tortoise scat was found in a mine adit during bat surveys in 2006 (Brown and Berry 2007). Although desert tortoise were previously thought to be absent west of Highway 14, recent records indicate that the species persists in this area (CDFW 2019). CNDDDB lists three occurrences within six miles of the Permit Modification Area, west of Highway 14 (2006 and two from 2013), and one occurrence 2 miles northeast of the Permit Modification Area, just east of Highway 14 (2013).

**Golden eagle (*Aquila chrysaetos*), Federal Bald and Golden Eagle Protection Act, CDFW Fully Protected Species, USFWS Bird of Conservation Concern. Moderate potential.** The golden eagle is a large raptor that occurs in open and semi-open areas from sea level to high elevation. Typical occupied habitats include grasslands,

shrublands, deserts, woodlands, and coniferous forests. Breeding activity occurs broadly from January through August, and in California is usually initiated from January to March. The large stick nests of this species are reused across years and may be maintained throughout the year. Nests are most often placed on the ledges of steep cliffs, but nesting also occurs in trees and on tall manmade structures (e.g., utility towers) (Kochert et al. 2002). Golden eagles forage over wide areas, feeding primarily on medium-sized mammals (e.g., ground squirrels and rabbits), large birds, and carrion.

Golden eagles were observed flying near Soledad Mountain during surveys for the initial project permitting in 1989-1990. An active nest, which fledged two young, was located approximately 1 mile south of the mine location. Further surveys in 1995 could not find evidence of continued occupation or nesting at this nest (Bamberg 1997). In 2018, a WRA biologist again surveyed Soledad Mountain for golden eagles, using previous nest locations identified during surveys for the Alta East Wind Energy Center Project (2013) and the Sun Creek Wind Resource Area (2010) as well as other suitable locations identified during the survey. No active golden eagle nests were observed in 2018 (WRA 2018).

#### **Federal and State Threatened and Endangered Species Documented in the Vicinity with Low Potential to Occur:**

**Mohave Ground Squirrel (*Xerospermophilus mohavensis*). State Threatened. Low potential.** The Mohave Ground Squirrel occupies portions of Inyo, Kern, Los Angeles and San Bernardino counties in the western Mojave Desert. This species occupies all major desert scrub habitats in the western Mojave Desert up to 5,600 feet in elevation including: Mojave creosote scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub and Joshua tree woodland. They inhabit flat to moderate terrain and are not generally found in steep contours and areas of desert pavement. The species has been found most frequently in sandy, alluvial soils, but is also found in gravelly and occasionally rocky soils (Laabs 2010).

Mohave ground squirrels feed on a variety of foods, but primarily on the leaves and seeds of forbs and shrubs. Their reproductive success is dependent on the amount of fall and winter rains. Typical litter size is between four and nine offspring. Agricultural development has resulted in the loss of occupied and potential habitat in large areas, notably the western triangle of the Antelope Valley, Lucerne Valley and the Mohave River Basin (Laabs 2010).

Surveys including trapping were conducted in 1990 and did not detect any Mohave ground squirrels in the Permit Modification Area (Bamberg 1997). The nearest CNDDDB records are approximately 8 miles south of Soledad Mountain in Rosamond and 8 miles north, north of Mojave (CDFW 2019).

#### **4.3 Critical Habitat**

No Federal-designated Critical Habitat for any species is found within the Permit Modification Area.

#### **4.4 California Desert Native Plants Act**

The Permit Modification Area contains plant species that are on the list of native plant species covered by the California Desert Native Plants Act. These include all species in



the families Agavaceae (now Asparagaceae, sub-family Agavoidea) (e.g. Joshua tree) and Cactaceae (e.g. cholla and beavertail).

## **5.0 SUMMARY**

Based on the results of the site visit, the Permit Modification Area contains one sensitive natural community. The Permit Modification Area has the potential to support four special-status plant species and 12 special-status wildlife species. In addition, native nesting birds and roosting bats with baseline legal protections (e.g. MBTA and CFGC) may be present in the Permit Modification Area. The Permit Modification Area also contains native species covered by the California Desert Native Plants Act.

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**APPENDIX A**

**LIST OF OBSERVED PLANT SPECIES**

Appendix A – Plant Species Observed within the Study Area on May 30, 2018.

Scientific Name	Common Name	Family	Origin	Form	Rarity Status <sup>1</sup>
<i>Acamptopappus sphaerocephalus</i>	Goldenhead	Asteraceae	native	shrub	-
<i>Ambrosia acanthicarpa</i>	Annual burrweed	Asteraceae	native	annual herb	-
<i>Ambrosia salsola</i>	Burrobrush	Asteraceae	native	shrub	-
<i>Amsinckia tessellata</i>	Devil's lettuce	Boraginaceae	native	annual herb	-
<i>Astragalus lentiginosus var. variabilis</i>	Freckled milk vetch	Fabaceae	native	annual, perennial herb	-
<i>Brassica tournefortii</i>	Saharan mustard	Brassicaceae	non-native	annual herb	-
<i>Ericameria nauseosa</i>	Rubber rabbitbrush	Asteraceae	native	shrub	-
<i>Eriogonum fasciculatum</i>	California buckwheat	Polygonaceae	native	shrub	-
<i>Erodium cicutarium</i>	Coastal heron's bill	Geraniaceae	non-native	annual herb	-
<i>Euphorbia polycarpa</i>	Smallseed sandmat	Euphorbiaceae	native	perennial herb	-
<i>Grayia spinosa</i>	Hop sage	Chenopodiaceae	native	shrub	-
<i>Gutierrezia sarothrae</i>	Matchweed	Asteraceae	native	shrub	-
<i>Larrea tridentata</i>	Creosote bush	Zygophyllaceae	native	shrub	-
<i>Lycium andersonii</i>	Anderson thornbush	Solanaceae	native	shrub	-
<i>Phacelia tanacetifolia</i>	Tansy leafed phacelia	Boraginaceae	native	annual herb	-
<i>Schismus barbatus</i>	Old han schismus	Poaceae	non-native	annual grass	-
<i>Sphaeralcea ambigua</i>	Desert mallow	Malvaceae	native	perennial herb	-
<i>Yucca brevifolia</i>	Joshua tree	Agavaceae	native	tree	-

Scientific Name	Common Name	Family	Origin	Form	Rarity Status <sup>1</sup>
<i>Cholla</i> sp.	Cholla	Cactaceae	native	shrub (stem succulent)	-
<i>Opuntia</i> sp.	Beavertail	Cactaceae	native	shrub (stem succulent)	-

- All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2018]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2018]

<sup>1</sup>Rarity Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2018a)

- FE: Federal Endangered
- FT: Federal Threatened
- SE: State Endangered
- ST: State Threatened
- SR: State Rare
- Rank 1A: Plants presumed extinct in California
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere
- Rank 3: Plants about which we need more information – a review list
- Rank 4: Plants of limited distribution – a watch list

**APPENDIX B**

**REPRESENTATIVE PHOTOGRAPHS OF THE PERMIT MODIFICATION AREA**





Photograph 1. Creosote bush scrub within the Permit Modification Area. Photo taken May 31, 2018.



Photograph 2. Creosote bush scrub facing current existing Soledad Mountain Project. Photo taken May 31, 2018.



Photograph 3. South of Silver Queen Road roughly 0.1 miles east of Holt Street, within the current permit boundary; feature continues in Photograph 8. Photo taken May 30, 2018.



Photograph 4. Creosote scrub / Joshua tree woodland in Permit Modification Area. Photo taken May 30, 2018.



Photograph 5. Creosote scrub is characteristic of the majority of the Permit Modification Area. Photo taken May 30, 2018.



Photograph 6. Feature located in current permit boundary near 40<sup>th</sup> Street West and unnamed dirt road. Photo taken May 30, 2018.



Photograph 7. Dry wash in creosote/Joshua tree woodland. Photograph taken May 30, 2018.



Photograph 8. Joshua tree woodland located within the Permit Modification Area. Photograph taken May 30, 2018.