Biological Resources Assessment
for the
Essex Overhead Quarry
San Bernardino County, California

Essex and Fenner USGS 7.5' Quadrangle Maps
Township 8 North, Range 17 East, Section 29
Assessor's Parcel Number 0655-151-01

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EXECUTIVE SUMMARY

San Bernardino County Department of Public Works (Applicant) is proposing to construct and operate a sand and gravel quarry on an approximately 83-acre parcel, referred to as the Essex Overhead Quarry (Project). The Project boundary includes two quarry sites that would impact approximately 47 acres of the 83-acre parcel. The site is located on unincorporated land in San Bernardino County, California, approximately 1.2 miles northeast of the town of Essex, just south of the intersection of National Trails Highway (State Route 66) and Goffs Road. Material from the quarry is to annually provide up to 10,000 cubic yards (cy) or 15,000 tons of material for various roads, culverts, and other sites for annual maintenance and/or emergency repair due mainly to storm events.

Lilburn Corporation (under contract to the Applicant) has retained Leatherman BioConsulting, Inc. (LBC) to conduct surveys to evaluate the potential presence or absence of special-status species and their habitat within the proposed Project site. Focused surveys were conducted for these species in the winter of 2022 and spring of 2023, and a general biological resource assessment was completed. This report satisfies the County of San Bernardino Report Protocol for Biological Assessment Reports.

A portion of the Project site was used historically as a quarry and other areas show sign of past disturbance to varying levels. The parcel supports two native vegetation communities including creosote bush – white bursage scrub and desert willow – smoke tree scrub. The desert willow – smoke tree scrub occurs in a wash between the two quarry boundaries that would not be impacted by Project activities.

No special-status plant species were detected on the Project site. Although they maintain no federal or state sensitivity designations, a number of plant species are protected by the California Desert Native Plants Act (CDNPA), and by the San Bernardino County Development Code. Protected species identified on the Project site include pencil cholla (*Cylindropuntia ramosissima*), cottontop cactus (*Echinocactus polycephalus*), and beaver tail cactus (*Opuntia basilaris*); however, many of these plants appeared to be dead from the prolonged drought in the region.

No live tortoises or recent sign to indicate that tortoises are present on the Project site were observed during the surveys. Several burrows attributable to desert tortoise were observed but none appeared to be active or to be used recently, and no other sign (scat, carcasses, mating rings, tracks, etc.) were observed. However, desert tortoises are known to occur within the valley within which the Project lies, and adjacent parcels contain suitable habitat.

No other special-status species were observed, but the loggerhead shrike (*Lanius ludovicianus*) was observed in habitat nearby and has a high probably of occurring. Potential habitat for burrowing owl (*Athene cunicularia*) is present but no sign was observed. Inactive desert kit fox dens (*Vulpes macrotis*) were also observed on the Project site and could be occupied in the future. While the desert kit fox is not designated by federal, state, or local agencies as a special-status species, California Department of Fish and Wildlife (CDFW) regulations at 14 CCR 460 prohibit the take of this species.

A jurisdictional delineation should be completed to evaluate potential impacts on wetlands and non-wetland waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and waters of the state under the jurisdiction of the California Department of Fish and Wildlife.

There is the potential for Project-related impacts on nesting birds protected under the Migratory Bird Treaty Act (MBTA), three species protected by the CDNPA and San Bernardino County code, six annual plant species, desert tortoise, burrowing owl, desert kit fox, and jurisdictional waters. Mitigation measures to avoid and minimize potential Project impacts include avoiding the nesting season or conducting pre-construction surveys during the nesting season, avoiding or salvaging CDNPA plants, saving topsoil for annual plants, implementing a variety of measures to protect the desert tortoise, conducting pre-construction surveys for burrowing owl, monitoring potential kit fox burrows for activity prior to disturbance, and conducting a jurisdictional delineation to facilitate consultation with resource agencies for potential impacts to jurisdictional waters of the state.

1.0 INTRODUCTION

This Biological Resources Assessment report has been prepared to assess impacts to biological resources associated with the construction and operation of the Essex Overhead Quarry Project (Project). Described in this report are the existing conditions of the biological resources on the Project site, the methods used to evaluate the resources, the significance of the potential impacts to biological resources that would result from Project implementation, and mitigation measures to offset or reduce potential impacts to less than significant levels. This report satisfies the County of San Bernardino Report Protocol for Biological Resource Reports, and includes focused survey report information for plants, Mojave desert tortoise (*Gopherus agassizii*), and burrowing owl (*Athene cunicularia*). The survey area includes all habitat within Assessor's Parcel Number 0655-151-01 between National Trails Highway and the Atchison, Topeka and Santa Fe (AT&SF) Railroad, which occur immediately west and east of the Project site (respectively).

1.1 Project Location

The proposed Project site is located south of the Mojave National Preserve in Fenner Valley near the unincorporated town of Essex in San Bernardino County, California (Figure 1). Specifically, it is located approximately 1.2 miles northeast of the town just south of the intersection of National Trails Highway (State Route 66) and Goffs Road (Figure 2). It is bordered by National Trails Highway to the west and the AT&SF railroad to the east. Interstate 40, the primary east-west travel route in the region, is located approximately 4.5 miles to the north, and the remnants of the old Fenner Air Strip are approximately one mile to the north. The Project is on the northwest boundary of the Essex and Fenner U.S. Geological Survey (USGS) 7.5-minute series quadrangle maps (just east of the intersection with the Blind Hills and Danby USGS quadrangles) in Township 8 North, Range 17 East, Section 29. The Project site is on APN 0655-151-01.

1.2 Project Description

San Bernardino County, Department of Public Works (DPW) is submitting an application for a Mine Reclamation Plan for the Essex Overhead Quarry. The quarry is to annually provide up to 10,000 cubic yards (cy) or 15,000 tons of material for various roads, culverts, and other DPW sites for annual maintenance and/or emergency repair due mainly to storm events. The annual amounts may vary from zero to up to 50,000 tons or more depending on scheduled road maintenance and repair and emergency repairs caused by flooding or possibly earthquakes. The reclaimed end use of the site is for a long-term DWP material maintenance and storage yard.

The Project will consist of two phases within the approximately 83-acre parcel. The approximate boundary of the parcel (APN 0655-151-01) is shown in Figure 3 (prepared by San Bernardino County). The Phase 1 quarry will be located at the north end of the parcel (outlined in yellow in Figure 3), and Phase 2 quarry will be at the south end of the parcel (outlined in green in Figure 3).

The quarries will consist of two pits separated by a large wash that bisects the Project area roughly in half. The quarry pit north of the wash (Phase 1) would be approximately 22 acres in

size and the quarry pit to the south (Phase 2) would be approximately 25 acres, so approximately 47 of the 83 acres in the parcel is included in the Project area. The remaining 36 acres of the habitat in the parcel, all of which is creosote bush – white bursage scrub, would not be disturbed by Project activities. Each of the pits would be accessed via existing access roads. The access road to the Phase 1 quarry is at the northwestern corner and the access road to the Phase 2 quarry is at the southwestern corner. Ultimately, quarry pits would be excavated to a depth of approximately 50 feet, and the sides would be cut at a 3:1 slope. Access ramps would be cut from the top of the slope to the bottom of each pit as work progresses. Project design includes a 50-foot offset from the bank of the wash. The conceptual Mine Plan is provided in Figure 4 (prepared by Lilburn Corporation).

1.3 Existing Land Use

The Project site lies in a broad gently sloping valley on the desert floor between the Clipper Mountains (to the west) and the Piute Mountains (to the east), at an elevation that ranges from approximately 1,780 to 1,830 feet above mean sea level (msl). Large natural drainages and major landforms and topographic features are largely absent. During storm events the site drains to the west southwest via several small incised channels and many smaller well-defined and ill-defined channels. A desert wash occurs between the two proposed quarry sites (Phases and 1 and 2), and is outside the Project impact area, as depicted in the Mine Plan (Figure 4). The margins of the wash appear to be artificial and the purpose of the wash appears to be for conducting water through the parcel from the railroad tracks (on the east) to the highway (to the west). Levees on the east side of the railroad tracks (presumably built to protect the railroad tracks) appear to direct water under the railroad bridge and into the wash.

The Project site is currently undeveloped desert land and supports a variety of native and non-native vegetation and wildlife. Directly adjacent to the Project site is National Trails Highway and the frequently used AT&SF railroad. A previous quarry in the Phase 1 quarry site is no longer active. It was originally utilized in 1930/1931 for construction of the State Route 66 in the general area, and used subsequently to provide material for the construction of the west side of the Essex Overhead Bridge over the railroad. Evidence of the former quarry and intensive disturbance associated with the past land use are still obvious, although some vegetation within the area continues to recover. Parcels surrounding the site are undeveloped, and no residences aside from those associated with Essex occur in the vicinity.

An online digital map prepared by the USDA Natural Resources Conservation Service of the soils in the Mojave Desert surrounding Essex was accessed to identify soils on the Project site (USDA 2022). The results of the online search of digital maps indicate that no digital data are available for that region. However, soils appear to be composed primarily of coarse-grained, well drained sandy loams and alluvial fan material that occur throughout many broad valley landforms in the Mojave Desert.

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 The Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects plants and animals that are listed as endangered or threatened by the United States Fish and Wildlife Service (USFWS). Section 9 of the FESA prohibits the "take" of endangered wildlife, which is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). In this definition, "harm" includes "any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs the essential behavioral patterns of fish and wildlife." For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of FESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan (HCP) is developed.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds and any of their parts, eggs, and nests from activities including hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR Part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code (see Section 2.2.2).

2.1.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) prohibits the take of any bald or golden eagle, alive or dead, including any part, nest, or egg. "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" a bald or golden eagle. "Disturb" means to agitate or bother an eagle to a degree that causes, or is likely to cause (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding,

feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. The administering agency is FWS.

2.1.4 Clean Water Act

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill material into waters of the United States, including wetlands, without a permit from the U.S. Army oof Engineers (USACE). The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The U.S. Environmental Protection Agency acts as a cooperating agency to set policy, guidance and criteria for use in evaluation permit applications and also reviews USACE permit applications.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the State Water Quality Control Board, administered by each of nine California Regional Water Quality Control Boards (RWQCB).

2.2 State and Local Regulations

2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of FESA but, unlike its federal counterpart, CESA applies the take prohibitions to species proposed for listing (called "candidates" by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Under Section 2081, CESA allows for take incidental to otherwise lawful projects if it will not jeopardize the continued existence of the species. State lead agencies are required to consult with California Department of Fish and Wildlife (CDFW) to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat.

2.2.2 California Fish and Game Code

The CDFW administers the California Fish and Game Code. Several sections of the code are applicable to natural resource protection and management.

Lake and Streambed Alteration Agreement

Under Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. Section 1602 requires that a Notification of Lake or

Streambed Alteration be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the Streambed Alteration Agreement (SAA). Often, projects that require an SAA also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the SAA may overlap.

Migratory Birds

The CDFW enforces the protection of nongame native birds in Sections 3503, 3503.5, and 3800 of the California Fish and Game Code. Section 3503 makes it unlawful to take, possess, or destroy any bird's nest or any bird's eggs. Birds of prey (hawks, eagles, and owls) and their nests and eggs are protected under section 3503.5. Section 3513 prohibits the possession or take of migratory birds listed under the MBTA.

Fully Protected Species

The State of California first began to designate species as "Fully Protected" prior to the creation of the CESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under federal and/or state ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

Native Plant Protection Act

The Native Plant Protection Act (NPPA)(California Fish and Game Code §§ 1900-1913) was created with the intent to "preserve, protect and enhance rare and endangered plants in this State". The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take, and the NPPA requires all state agencies to use their authority to carry out programs to conserve endangered and rare plants. The CESA provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

2.2.3 California Environmental Quality Act

The California Environmental Quality Act (CEQA)(13 Public Resources Code Sections 21000 et seq.) is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. The CEQA Guidelines (14 California Code of Regulations [CCR] Chapter 3) are the regulations that explain and interpret the law for both public agencies and private development required to administer CEQA.

CEQA provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts to biological resources. Pursuant to Section 15380, CEQA provides protection for species that could potentially meet the criteria for listing, even if they are not currently listed. For plants, CDFW recognizes that plants of CRPR 1A, 1B, or 2 of the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants in California* may meet the criteria for listing and should be considered under CEQA.

2.2.4 California Desert Native Plants Act

The California Desert Native Plants Act (CDNPA)(California Food and Agriculture Code §§ 80001-80006) allows the harvest of certain species of non-listed native plants under permits issued by the county Agricultural Commissioner or Sheriff. The purpose of the CDNPA is to prevent the unlawful harvesting of native desert trees and cacti, either for wood, landscaping, or other purposes. Regulated species include: trees, cacti, ocotillo (*Fouquieria splendens*), yucca, and fan palms (*Washingtonia filifera*). Where feasible and practicable, individual plants can be salvaged and used for the project's revegetation program or salvaged by an approved nursery, landscaper, or other group to indirectly reduce unlawful harvesting elsewhere. Species in the Project vicinity that are subject to CNDNP regulations include several species of cacti including pencil cholla (*Cylindropuntia ramossissima*), beavertail cactus (*Opuntia basilaris*), and cotton top cactus (*Echinocactus polycephalus*), although most of these plants were dead due to the prolonged drought conditions in this region.

2.2.5 San Bernardino County Development Code

This County code augments and implements provisions of the California Desert Native Plants Act. The County manages the removal or relocation of native plant resources in unincorporated areas of the County under Title 8, Chapter 88.01 Plant Protection and Management. Species protected under County code are smoke tree (*Psorothamnus spinosus*), all mesquite (*Prosopis*) species, all species in the Agavaceae family, creosote rings 10 feet or larger in diameter, Joshua trees, ironwood (*Olneya tesota*), and all palo verde (*Cercidium* or *Parkinsonia*) species. No plants that are protected under the Code may be removed without a Tree or Plant Removal Permit.

3.0 METHODS

3.1 Literature Review

Prior to conducting a biological reconnaissance survey, Leatherman BioConsulting, Inc. (LBC) conducted a literature search to identify and compile a list of special status plants, wildlife and vegetation alliances known to occur in the vicinity of the Project site. Literature included the CDFW *California Natural Diversity Database* (CNDDB) (CDFW 2022) and the California Native Plant Society (CNPS) *Rare Plant Inventory* (CNPS 2022 & 2023). The database searches included the Fenner USGS 7.5-minute quadrangle map and the eight surrounding quadrangles, including Goffs, Blind Hills, Danby, Desert Spring, Fenner Hills, Fenner Springs, Essex, Little Piute Mountains. Listing packages in the Federal Register and lists of special status species published by the USFWS and CDFW were also reviewed. Numerous additional references and

resources were used to compile information on the current distribution, habitat requirements, and life histories for particular species and groups.

3.2 General Biological Surveys

A biological survey was conducted on December 1, 2022, by Principal Biologists Brian Leatherman and Sandra Leatherman, Senior Biologist Adam DeLuna, and Staff Biologist Taylor Beaulac. The purpose of the survey was to compile lists of all plant and wildlife species observed or detected in the survey area, evaluate and survey all potential desert tortoise and burrowing owl habitat, and evaluate the potential occurrence of special status plant and wildlife species identified during the literature search. The Project site and surrounding area were also evaluated to assess its potential to facilitate wildlife movement through the area.

During the biological survey, the entire Project site was walked using 10 meter transects. The survey was intended to provide an assessment of habitat and vegetation on the Project site and to document species that are common, but was not sufficient for detection of many of the annual plant species that are likely present, or for the majority of wildlife that are only active or present in the region during certain times of the year.

All plants and wildlife observed or detected indirectly during the general biological survey were documented in field notes, and are listed in Appendices A and B. Representative photographs of the habitat are in Appendix C. Plant taxonomy and nomenclature follow *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012) or the online updates on the *Jepson eFlora* (Jepson Flora Project 2023). Vegetation was mapped in the field by Ms. Leatherman on an aerial photograph at a 200 scale (1"=200"). Vegetation alliances were classified according to the descriptions in the online edition of *A Manual of California Vegetation* (CNPS 2023).

Wildlife species were detected by direct observation or the presence of diagnostic sign. Active searches for reptiles included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by direct observation or diagnostic vocalizations (calls or songs) or feathers. Mammals were documented based on direct observation or by identifying diagnostic sign, including remains, scat, footprints, burrows, and tracks. Taxonomy and nomenclature for vertebrate wildlife referred to in this report generally follow the *Complete List of Amphibian, Reptile, Bird, and Mammal Species in California* (CDFW 2016), which is available online.

3.3 Special Status Biological Surveys

3.3.1 Plant Surveys

The database and literature search described in Section 3.1 identified a number of special status plants that may potentially occur on the Project site, and habitats were assessed during the biological surveys on December 1, 2022, to evaluate suitability to support special status plant resources. Based on the evaluation, it was determined that the Project site contains potentially suitable habitat for eight of the species, and focused plant surveys were conducted on April 18, 2023, by Ms. Leatherman, Staff Biologist Emilee Brink, and Psomas Senior Botanist Allison Rudalevige.

Prior to conducting surveys, surveyors reviewed the target species' descriptions, photographs of live or herbarium specimens, illustrations in identification manuals, and microhabitat associations. Local reference populations were visited to the extent possible to identify the current status of the plants prior to the surveys. Focused plant surveys were conducted using parallel meandering transects across the entire Project site so that 100 percent visual coverage of the site was achieved. Although the region experienced severe drought conditions over the past several years, rainfall was well above average in 2023. Plant surveys were floristic in nature, and each plant was identified to the species level or to a level necessary to determine if it was a special status species.

3.3.2 Desert Tortoise Surveys

On December 1, 2022, LBC biologists conducted focused surveys for the desert tortoise following the Desert Tortoise (Mojave Population) Field Manual (USFWS 2009) and the current USFWS presence/absence guidance for small projects within the range of the desert tortoise (USFWS 2019). Unlike large projects for which surveys must be conducted during defined activity periods, small project sites can be surveyed year around. Survey conditions consisted of clear skies and mild temperatures that ranged from 52 to 63 degrees Fahrenheit with winds that ranged from one to ten miles per hour. The survey consisted of walking 10-meter wide parallel belt transects in an east-west direction to obtain 100 percent coverage of the survey area. Transect widths were maintained at 10 meters apart with the aid of Garmin handheld Global Positioning System (GPS) units for precision. The focus of the survey was on the detection of desert tortoise and their diagnostic sign, including tortoises, burrows, shells, scat, tracks, drinking depressions. All burrows suitable for use by the desert tortoise were investigated as the surveys were conducted, and all wildlife observed or detected incidentally were documented in field notes. Incidental observations of known tortoise predators and other site features (e.g., disturbance) that could assist in the assessment of potential impacts on the tortoise were recorded.

3.3.3 Burrowing Owl Surveys

CDFW generally requires that surveys for burrowing owls be conducted in suitable habitat following the guidelines described in the California Department of Fish and Game (now CDFW) Staff Report on Burrowing Owl Mitigation (CDFW 2012). The guidelines include a multi-step approach that includes a habitat assessment, a burrow survey and focused surveys, and take avoidance surveys, with each step dependent on the results of the previous step. The habitat assessment was conducted on December 1, 2022, upon arrival at the site, and it was determined that the Project site and surrounding areas support suitable habitat for the burrowing owl. The burrow survey was conducted during the tortoise surveys. Transect widths in open habitat can be up to 30 meters (or 100 feet) but were spaced and maintained at approximately 10 meters (33 feet) to meet tortoise survey requirements. All potentially suitable natural or artificial (man-made) burrows were investigated as the surveys were conducted. Throughout the survey, the Project site and the surrounding areas were periodically surveyed for burrowing owls by scanning suitable habitat, potential burrow locations, possible perch locations, and other habitat features that may be used by burrowing owls. No burrowing owl or sign was observed and additional surveys were not conducted.

3.3.4 Other Special Status Wildlife

Biologists recorded observations of all species detected in the survey area, including all special status wildlife species listed in Section 3.3.1 if observed. Although desert kit fox is not a special-status species, no take is permitted by CDFW regulations under 14 CCR 460. Therefore, surveyors recorded all kit fox sign and mapped all natal dens or other burrow complexes.

4.0 RESULTS AND EXISTING CONDITIONS

This section provides the results of the literature review, general and focused biological surveys, vegetation mapping, and habitat assessments and focused surveys for special status biological resources.

4.1 Plant Surveys and Vegetation Alliances/Land Use Types

Two vegetation alliances occur in the Project survey area (Table 1). A description of the vegetation alliances is provided below, and a vegetation map is included as Figure 5.

Table 1
Vegetation Alliance/Land Use Types Acreage

Vegetation Alliance/Land Use Type	Acres Within Property Boundary
Creosote Bush - White Bursage Scrub	82.7
Desert Willow - Smoke Tree Scrub	0.3
Total	**83**

4.1.1 Creosote Bush - White Bursage Scrub [*Larrea tridentata – Ambrosia dumosa* Shrubland Alliance]

The Project site is located within the Mojave Desert geographical region (Sawyer and Keeler-Wolf 1995) and the vegetation is characterized as creosote bush – white bursage scrub (*Larrea tridentata-Ambrosia dumosa* Shrubland Alliance). The alliance is found in alluvial fans, bajadas, valleys, basins, and washes throughout the Mojave Desert. The soils where this alliance occurs are well-drained, alluvial, colluvial, and sandy, and sometimes covered with desert pavement.

In the Project area, the creosote bush – white bursage scrub alliance is dominated by creosote bush and white bursage. A variety of subdominant plants also occur in low densities including cheesebush (*Ambrosia salsola*), incienso brittlebush (*Encelia farinosa*), rayless encelia (*Encelia frutenscens*), and woolly eriophylum (*Eriophyllum lanosum*). Other than the creosote bush, most of the shrubs are less than 3 feet tall and canopy is open. Cacti in the survey area included pencil cholla, beavertail cactus, and cottontop cactus. Few annual plants were observed, even during the spring survey in April 2023. Common species observed include devil's spineflower (*Chorizanthe rigida*), Booth's camissonia (*Eremothera boothii*), Fremont pincushion (*Chaenactis fremontii*), slender pectocarya (*Pectocarya platycapa*) and desert lily (*Hesperocallis undulata*). Non-native annual plants throughout the site included Sahara mustard (*Brassica tournefortii*), red brome

(*Bromus rubens*), and Mediterranean schismus (*Schismus barbatus*). The scrub habitat appeared to be poor condition due to the prolonged drought in the region. Many of the perennial shrubs appeared to be dead or were brown and leafless, and most of the cacti were dead. No Joshua trees (*Yucca brevifolia*) occurred on the Project site.

4.1.2 Desert Willow - Smoke Tree Scrub (*Chilopsis linearis - Psorothamnus spinosus* Shrubland Alliance)

The large wash between the Phase 1 and Phase 2 quarry pits was dominated by smoke trees (*Psorothamnus spinosus*). The closest vegetation type in the online edition of *A Manual of California Vegetation* (CNPS 2022 & 2023) is the desert willow – smoke tree scrub (*Chilopsis linearis – Psorothamnus spinosus* Shrubland Alliance), but desert willow does not occur on the in the wash or on the Project site. Other species associated primarily with the wash include bladderpod (*Peritoma arborea*), catclaw acacia (*Senegalia greggii*), and cheeseweed, although other species listed above in the creosote bush – white bursage scrub also occur in small numbers. A very small portion of the wash (0.3 acre) is located within the northern parcel at the east end of the wash, but none of the wash is within the Phase 1 or Phase 2 quarry boundaries and none of the wash habitat would be impacted.

4.2 Wildlife

The Project site provides habitat for a variety of native wildlife, many of which are likely to occur on or pass through the Project area at least periodically. The Project is composed primarily of desert scrub dominated by creosote bush and is suitable for wildlife species that occur in similar areas in the Project vicinity and throughout the region. Fish and amphibian species are not expected to occur on the Project site due to a lack of suitable aquatic or moist habitat. However, a variety of reptiles, birds, and mammals are expected to occur or were observed or detected during the surveys. A list of the wildlife species observed within the survey area is presented in Appendix B. Common wildlife species observed or expected to occur on the Project site are discussed below.

The side-blotched lizard (*Uta stansburiana*) was observed during the surveys. Many additional reptile species expected to occur in the survey area because they are common throughout the Mojave desert including gopher snake (*Pituophis catenifer*), desert sidewinder (*Crotalus cerastes*), Zebra-tailed lizard (*Callisaurus draconoides*), and western whiptail (*Aspidoscelis tigris*).

Habitat on the Project site provides suitable foraging and nesting habitat for many bird species. Some birds may be year-around residents, but many species only occur during the summer (nesting) or winter. Other species pass through during migration only. Species observed or expected to occur seasonally include red-tailed hawk (*Buteo jamaicensis*), black-throated sparrow (*Amphispiza bilineata*), phainopepla (*Phainopepla nitens*), loggerhead shrike (*Lanius ludovicianus*), verdin (*Auripaurus flaviceps*), and common raven (*Corvus corax*).

Several mammals were observed or detected by the presence their sign including scat, tracks, and burrows. Potential dens of both coyote (*Canis latrans*) and kit fox (*Vulpes macrotis*) were observed although none were active. Additional common mammal species expected to occur in

the Project area include kangaroo rats (*Dipodomys* spp.), desert cottontail (*Sylvilagus auduboni*) and white-tailed antelope squirrel (*Ammospermophilus leucurus*).

4.3 Special Status Biological Resources

This section addresses special status biological resources observed, reported or having the potential to occur in the Project site. These resources include habitat/vegetation types, plants and wildlife species that have been afforded special status and/or recognition by federal and state resource agencies, and species recognized by private conservation organizations.

4.3.1 Special Status Habitats/Vegetation Types

No special status habitats or vegetation types occur on the Project site.

4.3.2 Special Status Plant Species

Eight special status plant species are known to occur in the vicinity of the Project site and were targeted during the general and focused surveys. No special status plant species, including federal or state threatened, endangered, or candidate plant species, were observed during the general or focused surveys. Table 2 lists the potential for these species to occur within the Project site.

Table 2
Special Status Plants Reported in the Region

Special Status Plants	Habitat Requirements	Status	Potential to Occur
Astragalus allochrous var. *playanus* playa milk-vetch	Annual. Mojavean desert scrub. Sandy flats. 1968-6398 ft. Known in CA from two occurrences near Goffs. Eastern Mojave Desert to Texas and Mexico.	Federal: None State: None CRPR: 2B.2	Low; not observed.
Castela emoryi Emory's crucifixion thorn	Perennial. Mojavean desert scrub, Playas, Sonoran desert scrub. Dry, gravelly washes, slopes, plains. 2132 ft. Southern Mojave Desert, Sonoran Desert, also Arizona and northwestern Mexico.	Federal: None State: None CRPR: 2B.2	Not expected; not observed.
Cryptantha clokeyi Clokey's cryptantha	Mojavean desert scrub. Rocky to gravelly slopes, ridge crests, granite, desert woodland, chaparral. 3445-5413 ft. California to Nevada.	Federal: None State: None CRPR: 1B.2	Low; not observed.

Special Status Plants	Habitat Requirements	Status	Potential to Occur
Echinocereus engelmannii var. *howei* Howe's hedgehog cactus	Mojavean desert scrub. Found 13 miles east of Goffs. Current status unresolved in Jepson Flora Project due to "more study needed" on if it is a variant or synonym. Southern California, Nevada, Arizona, and northwestern Mexico	Federal: None State: None CRPR: 1B.1	Not expected; not observed.
Euphorbia abramsiana Abram's spurge	Mojavean desert scrub, Sonoran desert scrub. Sandy flats. <656 ft. California to Texas and northwestern Mexico.	Federal: None State: None CRPR: 2B.2	Low; not observed.
Funastrum utahense Utah vine milkweed	Mojavean desert scrub, Sonoran desert scrub. Open, dry, sandy or gravelly areas. <3281 ft. California, Utah, and Arizona.	Federal: None State: None CRPR: 4.2	Moderate; not observed.
Pellaea truncata spiny cliff-brake	Pinyon and juniper woodland. Granitic, rocky, and volcanic plains. 3937-6234 ft. California to Colorado, Texas, and Baja California	Federal: None State: None CRPR: 2B.3	Low; not observed.
Tidestromia eliassoniana Eliasson's woolly tidestromia	Mojavean desert scrub. Sandy and gravely areas. 2149-6906 ft. South and southwestern USA to northern Mexico.	Federal: None State: None CRPR: 2B.2	Moderate; not observed.
[a] Status Definitions			
Federal (USFWS) State (CDFW) Federal (USFS)			
FE Endangered SE Endangered			
FC Candidate SR Rare			
California Rare Plant Rank (CRPR) List Categories			
List 1A Plants presumed extirpated in California and either rare or extinct elsewhere			
List 1B Plants Rare, Threatened, or Endangered in California and Elsewhere			
List 2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere			
List 3 Plants that require more information before they can be assigned to another rank or rejected			
List 4 Plants of Limited Distribution - A Watch List			
CRPR Threat Code Extensions			
.1 Seriously Endangered in California (over 80% of occurrences threatened; high degree and immediacy of threat)			
.2 Fairly Endangered in California (20–80% of occurrences threatened)			
.3 Not Very Threatened in California (low degree/immediacy of threat or no current threats known)			
Agency Abbreviations:			

CDFW: California Department of Fish and Game			
CRPR: California Rare Plant Rank			
USFWS: United States Fish and Wildlife Service			

Two of these perennial plant species, Emory's crucifixion thorn (*Castela emoryi*) and Howe's hedgehog cactus (*Echinocereus engelmannii* var. *howei*), can be identified at any time of year. Neither of these species was observed during general or focused surveys and are not expected to occur on the Project site.

The remaining six special status plant species identified during the literature search include playa milk-vetch (*Astragalus allochrous* var. *playanus*), Clokey's crypthantha (*Cryptantha clokeyi*), Abram's spurge *(Euphorbia abramsiana*), Utah vine milkweed (*Funastrum utahense*), spiny cliff-brake (*Pellaea truncata*), and Eliasson's woolly tidestromia (*Tidestromia eliassoniana*). These six species are annuals and can only be detected during their respective growing seasons. Although none were observed incidentally or during focused surveys in the spring, it is possible that some could occur in the survey area and immediately adjacent habitat but were missed because of their rarity, germination and growth occurred earlier or later in the year than normal, or they didn't germinate at all due to local factors.

4.3.3 Special Status Wildlife

A total of ten special status wildlife species have been reported in the Project region. These species and their potential to occur within the Project site are listed in Table 3. No special status wildlife was observed during survey, but desert tortoise burrows (none of which showed signs of recent use) were observed in the survey area, indicating they occurred there. Several of the special status wildlife species identified during the literature search are not expected to occur on the Project site at all, while others may use the site occasionally. Those with potential to occur are addressed below.

Desert Tortoise

The Mojave desert tortoise is listed as threatened under both the state and federal Endangered Species Acts. The species occurs in the Mojave and Sonoran deserts of southeastern California, southern Nevada, and southwestern Utah, and is most commonly found in desert washes, canyon bottoms, and rocky hillsides below 3,530 feet in elevation. The dominant shrub commonly

Table 3
Special Status Wildlife Reported in the Region

Special Status Reptiles	Habitat and Distribution	Status	Potential to Occur
Gopherus agassizii desert tortoise	Creosote bush scrub and other desert shrubland habitats; Mojave and Sonoran deserts (E Calif., S Nevada, W Ariz., and Sonora, Mexico)	Federal: FT State: ST	High, known from area, no sign of recent use

Special Status Birds	Habitat and Distribution	Status	Potential to Occur
Accipiter cooperii Cooper's hawk	Nests and hunts in forests and woodlands occasionally forages in open areas; most of US, Central and S America	Federal: State: None	Not expected, no nesting or foraging habitat
Aquila chrysaetos golden eagle	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout W N America, winters to E coast	Federal: State: FP	No nesting habitat (cliffs), limited foraging habitat, not observed
Falco mexicanus prairie falcon	Nests on high cliffs, forages primarily over open lands; occurs throughout arid western US and Mexico	Federal: State: None	No nesting habitat (cliffs), limited foraging habitat, not observed
Icteria virens yellow-breasted chat	Breeds in dense riparian habitat, low elev., much of US, winters S to Cent. Amer.; becoming rare in Calif. (cowbirds & habitat loss)	Federal: State: SSC	Not expected, no nesting or foraging habitat
Lanius ludovicianus loggerhead shrike	Woodlands, shrublands, open areas with scattered perch sites; widespread in N America	Federal: State: SSC (nesting)	High, observed in vicinity
Toxostoma bendirei Bendire's thrasher	Joshua tree woodl., desert shrubl. with high cactus cover; Mojave Des in Calif., much of Ariz, S Utah, NM, mainland Mexico	Federal: State: SSC	Not expected, no nesting or foraging habitat
Toxostoma lecontei LeConte's thrasher	Mojave and Colorado Deserts, SW Cent. Valley, Owens Valley; to Nevada, Utah, Arizona; open shrubland, often sandy or alkaline flats	Federal: State: SSC	Low
Special Status Mammals	**Habitat and Distribution**	**Status**	**Potential to Occur**
Ovis canadensis nelsoni Nelson's bighorn sheep	Open shrublands and conifer forest, remote mountains; scattered pop'ns in Transverse Ranges, Mojave Des. Ranges, White Mts.	Federal: State: FP, SSC	Not expected, no habitat or movement corridor between ranges
Taxidea taxus American badger	Mountains, deserts, interior valleys where burrowing animals are avail as prey and soil permits digging; throughout cent and W N Amer	Federal: State: FP	Low, no sign observed

Federal		**State**	
FE	Federally listed as endangered	SE	State listed as endangered
FT	Federally listed as threatened	ST	State listed as threatened
FPE	Federally proposed for listing as endangered	SCE	State candidate for listing as endangered
FPT	Federally proposed for listing as threatened	SCT	State candidate for listing as threatened
FPD	Federally proposed for delisting	SCD	State candidate for delisting
FD	Federally delisted	SD	State delisted
FC	Federal candidate species	SSC	Species of Special Concern
		FP	CDFW Fully Protected

Potential for Occurrence	
Present:	Observed on the site during survey, or reported on-site by other qualified biologists.
High:	Reported in similar habitat in region by qualified biologists and high-quality suitable habitat is present on the site.
Moderate:	Reported in surrounding region and marginally suitable occurs on the site.
Low:	Few or no records in region and habitat is rarely occupied by species or is disturbed or of poor quality.
Not Expected:	No suitable habitat is present, the site is out of the currently known range, or a focused survey failed to detect the species.

associated with desert tortoise habitat is creosote bush. Many other shrubs including white bursage, cheesebush, and desert senna (*Cassia armata*) are common in suitable habitat for the species. Desert tortoises spend 95 percent of their lives underground; therefore, suitable soil that is friable enough for digging but firm enough that is doesn't collapse is a requirement for burrow construction (USFWS 1994). Throughout most of the Mojave Desert, desert tortoises prefer gently sloping terrain with soils ranging from sandy loams to sandy gravels with scattered shrubs, and where there is abundant inter-shrub space for growth of herbaceous plants. Desert tortoises can also be found in steeper, rockier areas throughout their range. During the winter, tortoises will opportunistically use burrows of various lengths, deep caves, rock and caliche crevices, or overhangs for cover (Bury et al. 1994).

Suitable habitat and soils occur throughout the Project site. No live tortoises or recent sign were observed during focused tortoise surveys; however, nine burrows ranging in quality from Class 2/3 burrows (definitely made by desert tortoises) to Class 5 (possibly tortoise but deteriorated) were observed in the survey area (Table 4). The locations of each burrow are shown in Figure 6. The lack of recent sign indicates that tortoises may not currently use the Project site and suggests they have not used it in recent years.

Lack of tortoises and recent sign may be the result of several factors that make the site less favorable compared with surrounding habitat. The location of the Project in a strip of habitat between National Trails Highway and the railroad increases the risk of mortality for tortoises that move in and out the Project site area, reducing the number of tortoises likely to use the area over time. In addition, most of the vegetation on the Project site appeared to be dead or dying due to lack of water from the prolonged drought throughout the region, and adjacent habitat along the highway, railroad, and adjacent Southern California Edison easements is relatively disturbed from past and current operational uses. The introduction of nonnative plant species, primarily

Mediterranean grass (*Schismus barbatus*) and Sahara mustard (*Brassica tornefortii*), further contribute to the lower quality of the habitat.

Table 4
Desert Tortoise Burrows

Map ID	Sign Type	Comments
EDT1	Class 2/3 burrow	Small burrow, no recent use, not very deep
EDT2	Class 3 burrow	Slightly deteriorated, second burrow nearby
EDT3	Class 3 burrow	Average burrow, no recent use
EDT4	Class 4 burrow	Round entrance with decent tortoise shape toward the back, medium sized
EDT5	Class 2/3 burrow	Good shape but shallow
EDT6	Class 5	Deteriorated burrow but still good potential
EDT7	Class 2/3 burrow	Maintains tortoise shape for approx. 15cm and then narrows to small hole
EDT8	Class 3 burrow	In wall of previous mining area
EDT9	Class 3 burrow	In wall of previous mining area

Despite the lack of recent sign on the Project site, the desert tortoise is known to occur in the vicinity. In-house project files from informal surveys and road monitoring in the region document tortoise occurrences in the area (LBC unpubl. data). In addition, the CNDDB (2022) shows multiple tortoise occurrences on several of the USGS quadrangle maps in the valley surrounding the Project site, including the Essex quadrangle. As such, there is the possibility that a tortoise could pass through or take up residence on the Project site when it is active in the spring or fall season.

Burrowing Owl

The burrowing owl is widespread in western North America and occupy a wide range of habitats including open, treeless areas within grassland, steppe, and desert biomes with low, sparse vegetation (Poulin et al. 2011). Burrows are an essential component of burrowing owl habitat because they provide protection, shelter, and nest sites (Henny and Blus 1981). Burrowing owls typically use modified burrows made by fossorial mammals, especially those of ground squirrels and other rodents, but also may use man-made structures, such as cement culverts, abandoned pipe, debris piles, or openings beneath concrete or asphalt pavement.

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. The breeding season in California is March to August but can begin as early as February and extend into December (Gervais et al. 2008). Occupancy of suitable burrowing owl habitat can be verified at a site by the observation of at least one burrowing owl, or its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992). A site

should be assumed occupied if at least one burrowing owl has been observed occupying a burrow there within the last three years (Rich 1984).

During the focused burrow survey, a total of twelve potential burrows that were of a size suitable for use by burrowing owl were observed in the survey area (Table 5). Locations of each burrow are shown in Figure 7. Potential burrows include all natural or artificial cavities that could be used by a burrowing owl regardless of its origin or condition. Nearly all of the burrows were attributed to either coyote or desert kit fox. None of these burrows appeared to be occupied, and no diagnostic sign to indicate they had been used recently were observed. Because there is suitable habitat and suitable burrows within the survey area and throughout the region, burrowing owls could take up residence in the survey area at any time, even though it appears to be unoccupied currently.

Table 5
Potential Burrowing Owl Burrows

Map ID	Sign Type	Comments
EBO1	Potential Burrow	Canid burrow
EBO2	Potential Burrow	Canid burrow
EBO3	Potential Burrow	Good condition
EBO4	Potential Burrow	Under shrub in wash, hidden
EBO5	Potential Burrow	Canid burrow at the base of a smoke tree, hidden
EBO6	Potential Burrow	Sink hole with vertical entrance
EBO7	Potential Burrow	Old kit fox den, good condition, near vertical hole
EBO8	Potential Burrows	Old kit fox complex
EBO9	Potential Burrow	Good condition
EBO10	Potential Burrows	Two potential burrows on berm, old kit fox scat
EBO11	Potential Burrow	Good condition
EBO12	Potential Burrow	Old kit fox den, deteriorated

LeConte's Thrasher

This species is an uncommon to rare, year-round resident in southern California deserts from southern Mono County south to the Mexican border, and in the western and southern San Joaquin Valley. Le Conte's thrashers commonly place their nests in dense, spiny shrubs or in densely branched cactus in desert wash habitat, 1.5 to 3.5 feet above the ground. The species occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats. Le Conte's thrashers feed mainly on insects and spiders, but occasionally feed on plant seeds, bird eggs, and small lizards (Sheppard 1996). No LeConte's thrasher was observed during the protocol desert tortoise surveys or incidentally during other surveys on the Project site. CNDDB (2022) records show past occurrences on two of the USGS quadrangle maps in the valley surrounding the Project site. Although suitable habitat occurs in the Project area, the potential for occurrence is judged to be low based on the relatively disturbed nature of the site, the presence of the highway and railroad, and extensive higher quality habitat throughout the region.

Loggerhead Shrike

This species breeds in brushlands and open woodlands with grass cover. Their breeding season is from March through August. They hunt in open areas but require tall shrubs, trees, fences, or telephone lines for perching, and thorny plants or barbed wire for impaling prey. The loggerhead shrike is the most widely distributed vertebrate in the western Mojave but it is not common anywhere in the desert (BLM 2005). One individual was observed near the Project site during the surveys conducted in December 2022, and this species could nest in the wash between the Phase 1 and 2 quarries adjacent to the Project site and forage throughout the survey area, but it likely does not nest on the Project site.

Desert Kit Fox

The desert kit fox is a small fox native to the western United States including the Mojave and Sonoran deserts of California (Ingles 1965). Although the desert kit fox is not designated by federal, state, or local agencies as a special-status species, CDFW regulations at 14 CCR 460 prohibit the take of this species. Thus, to be compliant with CDFW regulations, the project must avoid the capture or accidental mortality of desert kit foxes. Several burrows possibly attributable to desert kit fox were detected on the Project site during focused tortoise surveys. Given the presence of suitable burrows, the extent of suitable habitat in the region, and this species' high mobility and willingness to tolerate human disturbance, kit foxes could take up residence in the survey area at any time in future, even though it appears to be unoccupied currently.

4.3.4 Critical Habitat and Conservation Areas

Critical Habitat

The survey area is within Chemehueve Unit of designated critical habitat for desert tortoise. The USFWS designated critical habitat areas for the desert tortoise in 1994 (USFWS 1994) and prescribed management actions to aid recovery, with critical habitat providing legal protection on projects where federal funding, permits, licenses, authorizations or actions occur or are required. This critical habitat unit is approximately 937,400 acres in size and includes most of Fenner Valley south of Interstate 40.

Conservation Lands and Plans

The Project site is within the boundaries of the Desert Renewable Energy Conservation Plan (DRECP), a comprehensive plan intended to streamline renewable energy development while conserving valuable desert ecosystems and resources. The DRECP is a collaborative effort among the Bureau of Land Management, California Energy Commission, USFWS, and CDFW, collectively forming the "Renewable Energy Action Team" responsible for implementing the plan. The DRECP provides an opportunity for landscape-level planning for solar, wind, and geothermal projects. Because the current project is not a renewable energy project, it will follow existing laws and regulations and need to be approved by applicable local, state, and federal agencies as in the past.

Besides the DRECP, the Project site is not within any adopted HCP, NCCP, or any other approved local, regional, or state habitat conservation plan.

Wildlife Movement

The Project site occurs in a broad valley in a largely undeveloped region in the center of the Mojave Desert where wildlife movement is largely unrestrained. Although true barriers to wildlife movement are lacking, the existence of interstates, highways, railroads and paved and unpaved roads may influence the movement of wildlife from one area to another to varying degrees. The Project site is in a strip of habitat between National Trails Highway and the AT&SF railroad, both of which can be crossed at grade by most wildlife. A small wash between the quarry pits that conducts water under the railroad bridge (on the east) and through the highway bridge (on the west) also provides movement for smaller wildlife that may avoid the barriers. The wash would be avoided during construction and operation of the quarry and no impacts to this potential wildlife corridor are expected.

5.0 PROJECT IMPACTS

5.1 Introduction

Projects may have direct or indirect impacts on biological resources (and the environment). Direct impacts are those that include the initial loss of habitat due to grading and construction. Indirect impacts are secondary effects that might occur at a later time or off the Project site (i.e., noise or the accumulation of dust on adjacent lands). Impacts on biological resources can be permanent or temporary. Temporary impacts include areas that may provide construction access for equipment, staging of equipment, stockpiles of soil, and be subject to minor soil disturbance.

5.2 Direct Impacts

Direct impacts are considered to be those that involve the loss, modification or disturbance of vegetation alliances and habitat, which in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or animals, which may also directly affect regional population numbers of a species or result in the physical isolation of populations, thereby reducing genetic diversity and population stability.

5.2.1 Vegetation Alliance Impacts

The proposed Project would directly impact the creosote bush – white bursage scrub within the Phase 1 and Phase 2 quarries. No impacts to desert willow – smoke tree scrub within the wash are expected. The total impact acreage is shown on Table 6, and the area to be impacted over the span of the Project is within the quarry boundaries illustrated on Figure 5.

Table 6
Vegetation Alliance Types Impact Acres

Vegetation Alliance/Land Use Types	Acres Within Property Boundary	Acres Within Impact Area	Preserved
Creosote Bush – White Bursage Scrub	82.7	47	35.7
Desert Willow – Smoke Tree Scrub	0.3	0	0.3
Total	**83**	**47**	**36**

Creosote Bush - White Bursage Scrub Alliance

Approximately 47 acres of creosote bush – white bursage scrub will be impacted by Project implementation. Impacts on the 47 acres of habitat will be mitigated, in part, by retaining 35.7 acres of the same vegetation alliance as open space on the 83-acre parcel.

Creosote bush – white bursage scrub occurs throughout the Mohave and Sonoran deserts in Southern California. Impacts to this vegetation alliance would be adverse, but are considered less than significant, and no mitigation is required.

Desert Willow – Smoke Tree Scrub Alliance

Desert willow – smoke tree scrub occurs within the wash between the Phase 1 and Phase 2 quarry boundaries but impacts to the wash and the habitat within it are not anticipated. No impacts will occur on this vegetation type.

5.2.2 Wildlife

General Habitat and Wildlife Loss

The loss of the vegetation described above would result in the loss of habitat that provides nesting, foraging, and denning opportunities for a variety of wildlife. The proposed Project would directly impact approximately 47 acres of undeveloped habitat. It would also result in the direct loss of common reptiles, small mammals, and other wildlife with low mobility within the impact area. More mobile species would be forced to move into remaining areas of open space where they would have to compete with resident individuals for available resources. This would result in the indirect loss of the individuals that don't successfully compete. The loss of native and non-native habitat on the Project site would not be expected to reduce populations of common wildlife species below self-sustaining levels in the Project region. Therefore, this impact would be considered adverse but less than significant, and no mitigation would be required.

Raptor Foraging Habitat

Project development would result in the loss of 47 acres of vegetated foraging habitat for raptors, including (potentially) golden eagle and prairie falcon, and would contribute to the loss of foraging habitat in the region. However, the quarry would be inactive for most of the year and

continue to provide foraging habitat (albeit disturbed) for most of the year, and 47 acres of raptor foraging habitat on the property would eventually be reclaimed. Although impacts on foraging habitat would be considered adverse, they would not be expected to affect the population of these species given the amount of suitable foraging habitat to remain on the Project site (including disturbed foraging habitat in the quarry) and in the surrounding region. Therefore, impacts on foraging habitat for these species would be considered less than significant and no mitigation would be required.

Nesting Birds

The Project has the potential to impact active bird nests if vegetation is removed during the nesting season. Several common bird species are likely to nest in the vegetation or on the ground within the impact area. The loss of an active migratory bird nest, including nests of common species, would be considered a violation of the MBTA and Sections 3503, 3503.5, and 3513 of California Fish and Game Code, which prohibit the take of migratory birds, nests, and eggs. Impacts therefore would be considered significant without mitigation. Mitigation Measure BIO-1 is included to reduce potential impacts to less than significant.

5.2.3 Special Status Biological Resource Impacts

Special Status Plant Species Impacts

None of the six annual species with potential to occur on the Project site are listed by USFWS or CDFW as threatened, endangered or a candidate for listing, although the CNPS rank of all but one (Utah vine milkweed) are considered high enough to warrant some protection. Although a focused botanical survey was completed there are still limitations and special status species may still be present. In addition to the special status species, three cactus species may be impacted during Project implementation including pencil cholla, beavertail, and cotton top cactus. The presence of these cacti and potential presence of special status plant species would be mitigated through implementation of Mitigation Measure BIO-2, which would reduce potential impacts to less than significant with the preparation of a Revegetation Plan.

Special Status Wildlife Impacts

A total of 10 special status wildlife, including, one reptile, seven birds, and two mammals, were identified during the literature search as potentially occurring in the Project region (Table 3). Many of the species are not expected on the Project site based on one or a combination of factors, including the highly disturbed nature of the site, lack of suitable habitat, and/or being out of geographic or elevational range. In addition, several bird species are not expected to nest but may pass through during migration, winter in the Project site, or forage in the area on occasion.

No special status wildlife was observed during the surveys on the Project site. Six special status wildlife species are not expected to occur, two have a low potential to occur, and two have a high potential to occur on the Project site. The removal of 47 acres of habitat could result in the direct loss of the special status wildlife, if any actually occur, or displace more mobile species, forcing them to move to adjacent open space where they would have to compete for resources. However,

small size of the Project, the disturbed nature of the existing habitat, the poor condition of the vegetation due to drought, and the site's location between a highway and railroad, all reduce the quality of the habitat for these species. In addition, similar habitat in the region and the 36 acres on the parcel that would remain as open space provide similar habitat for their persistence in the area.

With the exception of the desert tortoise, which is the only species that is currently listed, adverse impacts to these species (if they were to occur) would be unlikely to substantially affect regional populations or cause any trend toward listing them under state or federal ESAs. Therefore, potential impacts on these species may be adverse but are considered less than significant and no mitigation would be required.

Focused surveys for desert tortoise in the survey area were negative. However, tortoises are known to occur in the region and could wander onto the Project site at any time. If tortoises walk onto the Project site, they could be injured or killed, resulting in take as defined in the Endangered Species Acts. Any impact to desert tortoise would be considered significant. Implementation of Mitigation Measure BIO-3 will reduce potential impacts to a less than significant level.

No burrowing owls or sign of their presence were detected during surveys of the Project site in the winter and spring. However, suitable habitat for the burrowing owl occurs throughout the Project site and surrounding habitat, and the presence of multiple burrows that are of a size suitable for use by burrowing indicate that owls could occupy the site at some time in the future. Direct impacts to occupied burrows would be considered a potentially significant impact. Therefore, implementation of Mitigation Measure BIO-4 will avoid impacts to the owl and reduce potential impacts to a less than significant level.

Kit fox and American badger are burrowing mammals that could be affected by Project development by loss of habitat. However, ample suitable habitat is present in the surrounding areas, and the loss of habitat due to Project development is considered a less than significant impact. Although neither species was observed during surveys, kit fox or badger could move onto the Project site prior to Project development, and impacts to individuals in occupied burrows would be considered a potentially significant impact. Therefore, implementation of Mitigation Measure BIO-5 will reduce potential impacts to a less than significant level.

5.3 Indirect Impacts

Indirect impacts are those related to disturbance by construction (such as noise, dust, and urban pollutants), long-term use of the project site, and the project's operational affect on adjacent habitat areas (such as night lighting and human activity). The indirect impact discussion below includes a general assessment of the potential indirect impacts of the construction and operation of the proposed project.

Noise levels will likely increase during quarry operation. Noise impacts from initial construction activities would be temporary. Noise impacts from quarry operations would also be temporary

and would be sporadic based on the County's need for material for emergency road repair and maintenance.

National Trails Highway barely contributes to ambient noise levels but noise levels generated by the adjacent AT&SF railroad are extremely loud. Temporary increases in noise levels associated with the Project are not expected to be substantially higher than the existing noise levels.

Night lighting may impact the behavioral patterns of nocturnal and crepuscular (i.e., active at dawn and dusk) wildlife adjacent to night lighting. Of greatest concern is the effect on small, ground dwelling animals that use the darkness to hide from predators and/or owls, which are specialized night foragers. The quarry would not be operated at night so night lighting is not expected to be substantially higher the existing light levels. Therefore, this impact is less than significant and no mitigation is required.

6.0 MITIGATION MEASURES

Mitigation Measure BIO-1 Nesting Birds

To ensure compliance with the MTBA and the California Fish and Game Code, to the extent feasible, there shall be no vegetation cutting, removal, clearing, and/or grading allowed during the nesting season (February 15 – August 15).

If work is to be conducted within the nesting season, then a nesting bird survey shall be conducted by a qualified biologist within three days prior to disturbance. If nesting birds are not detected, no further action is necessary. If an active nest is detected and the qualified biologist determines that work activities may impact nesting, an appropriate buffer zone will be established around the nest. The buffer shall be established using highly visible construction fencing or flagging, and construction personnel shall be instructed on the sensitivity of nest areas. The size of the buffer may vary depending on site features, the sensitivity of the species, and the type of construction activity, but will be designed to prevent disruption of nesting activity. The nests and associated buffer zones shall be avoided until the nesting cycle is complete or it is determined by the qualified biologist that the nest has failed.

Mitigation Measure BIO-2 Special Status Plants

No specials status plants were observed during focused surveys; however, annual plants with potential to occur may not have germinated or otherwise been detected. To mitigate potential impacts, the County shall separate native topsoil, which contains native seed bank, so it can be saved and set aside during the initial clearing stages and redistributed over areas to be re-vegetated at the end of operation. Details regarding topsoil salvage shall be outlined in a Revegetation Plan to be prepared by the County to meet Surface Mining and Reclamation Act (SMARA) performance guidelines for re-vegetation.

Living cacti and other species protected under the CDNPA could be impacted during quarry development and operation if they occur within the quarry development footprint. If individuals cannot be avoided, removal will comply with the CDNPA and the San Bernardino County Code.

Mitigation Measure BIO-3 Desert Tortoise
The following mitigation measures are recommended to avoid potential impacts to desert tortoise. If at any time during the process desert tortoises are observed on the Project site, the County shall not initiate construction, and shall instead contact the USFWS and CDFW to develop an avoidance strategy and/or seek authorization for incidental take of desert tortoise.

Worker Environmental Awareness Program

Prior to any construction activities or site development at the quarry, the County will implement a Worker Environmental Awareness Program (WEAP) to educate on-site workers about sensitive environmental issues associated with the Project. The program will be administered to all on-site personnel, including the County's personnel, contractors, and all subcontractors, on the first day of work prior to commencing work on the site. The WEAP will emphasis the protected species that have potential to occur on or near the Project site, including the Mojave desert tortoise, burrowing owl, nesting birds, and desert kit fox, among other plant and wildlife species. The program will include the following elements:

- A presentation, developed by or in consultation with a qualified biologist, discussing the sensitive biological resources with potential to occur on-site, and explaining the reasons for protecting these resources and penalties for non-compliance.

- Contact information for the project biological monitor, and instructions to contact the monitor with any questions regarding the WEAP information.

- An acknowledgement form, to be signed by each worker indicating that they received WEAP training and will abide by the site rules protecting biological resources.

Mojave Desert Tortoise Exclusion Fencing and Monitoring

Prior to initiation of construction activities in each project Phase, a desert tortoise exclusion fence shall be installed around the perimeter of the active quarry pit and staging area to exclude desert tortoise from entering the facility throughout the operation of the Phase. If at any time during the process desert tortoises are observed on the Project site, the County shall not initiate construction, and shall instead contact the USFWS and CDFW to develop an avoidance strategy and/or seek authorization for incidental take of desert tortoise under the federal and state Endangered Species Acts.

After the location of the desert tortoise exclusion fence is staked, a qualified biologist shall conduct a survey in all disturbance areas and along the fence line for desert tortoise. Immediately following the survey (assuming no tortoises are detected), a desert tortoise exclusion fence shall be installed around the quarry areas. The exclusion fence shall be installed in accordance with the specifications set forth in Chapter 8 of the USFWS' Desert Tortoise Field Manual (USFWS 2009), and installation of the fence shall be monitored by a biologist familiar with the installation of tortoise exclusion fencing.

Following the installation of the exclusion fencing and prior to construction-related ground clearing and/or grading, the County shall retain a qualified biologist to conduct clearance surveys

for the Mojave desert tortoise within the fenced area. Surveys shall follow the current guidelines for conducting clearance surveys used by the USFWS (2009, 2019). The surveys shall consist of conducting two consecutive surveys by walking five-meter wide parallel belt transects in a north-south and then east-west direction to obtain 100 percent coverage of the survey area. Again, if any sign indicating the presence of Mojave desert tortoise is detected, the County shall not proceed with ground clearing and/or grading activities in the area of the find, and shall instead contact the USFWS and CDFW to develop an avoidance strategy and/or seek authorization for incidental take of Mojave desert tortoise.

Mining activities are expected to occur sporadically on an annual basis to obtain material for emergency road maintenance and repair. Therefore, prior to use of the quarry each year, the perimeter of the fence shall be inspected for any signs of damage or wear that could potentially compromise the integrity of the exclusion perimeter. If damage or excessive wear is observed, the exclusion fence shall be repaired prior to mining activities. Results of any necessary fence inspections will be maintained to document compliance with this provision.

The results of the pre-construction surveys, including graphics showing the locations of any tortoise sign detected, and documentation of any avoidance measures taken, shall be submitted to the USFWS, CDFW, and the County to document compliance with applicable federal and state laws pertaining to the protection of Mojave desert tortoise.

Mitigation Measure BIO-4 Burrowing Owl

Because no burrowing owls or their sign were present within the survey area and suitable habitat is present in the region, the loss of habitat due to the Project is not considered an adverse impact. However, burrowing owls could move onto the site prior to Project development, so take avoidance pre-construction surveys for burrowing owl should be completed according to CDFG guidelines (CDFW 2012), with one survey being conducted within 14 days of planned construction and a second survey conducted within 24 hours of grading. Depending on the results of those surveys, a Burrowing Owl Management Plan may be prepared in consultation with CDFW that will outline protection and avoidance and minimization measures that will be implemented for the project, including methods for avoidance, exclusion and burrow excavation, and passive relocation.

Mitigation Measure BIO-5 Desert Kit Fox

To avoid impacts to desert kit fox that could move onto the Project site prior to quarry construction, the County shall retain a qualified biologist to conduct preconstruction surveys within 14 days of ground disturbance. The survey shall be focused on detecting any desert kit fox individuals or dens within the disturbance footprint, including all the dens reported in this document. Each den shall be classified as inactive, potentially active, or definitely active based on field observations.

Active and potentially active dens in areas that would be impacted by construction activities shall be monitored by a qualified biologist for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or motion camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three

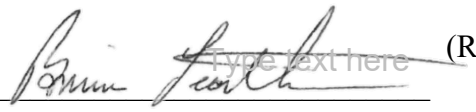
nights, the den shall be excavated and backfilled by hand to prevent reuse. If tracks are observed, the den shall be classified as active, and a management plan will be developed in consultation with CDFW to identify measures for avoidance, exclusion, and/or passive relocation.

Mitigation Measure BIO-6 Jurisdictional Delineation

Jurisdictional features may occur within the boundaries of the Project site. Therefore, the applicant shall conduct a jurisdictional delineation to evaluate the potential presence and extent of jurisdictional resources, potential impacts to jurisdictional resources, and proposed avoidance and minimization measures or compensatory mitigation.

7.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached figures present the data and information required for this resource assessment, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this investigation was performed by me or under my direct supervision. I certify that no biological information has been withheld based on a nondisclosure or consultant confidentiality agreements with the project applicant or applicant's representative and that I have financial interest in the Project.

DATE: 10/2/2023 SIGNED:  (Report Author)

The following biologists performed the field work and/or participated in preparation of this report: Brian Leatherman, Sandy Leatherman, Adam DeLuna, Taylor Beaulac, Emilee Brink, Allison Rudalevige.

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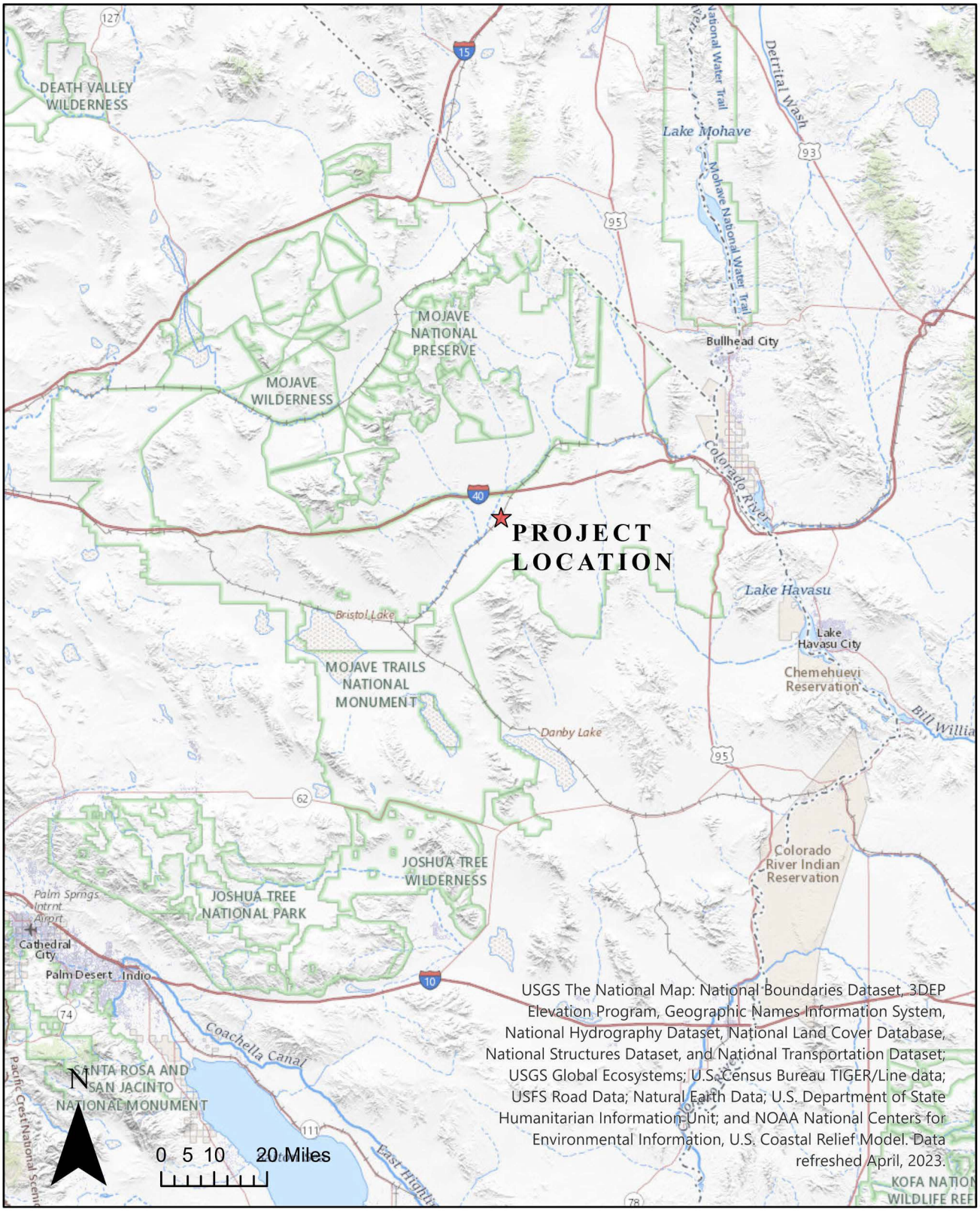


FIGURE 1 PROJECT BOUNDARY MAP

LEATHERMAN BioConsulting, Inc.

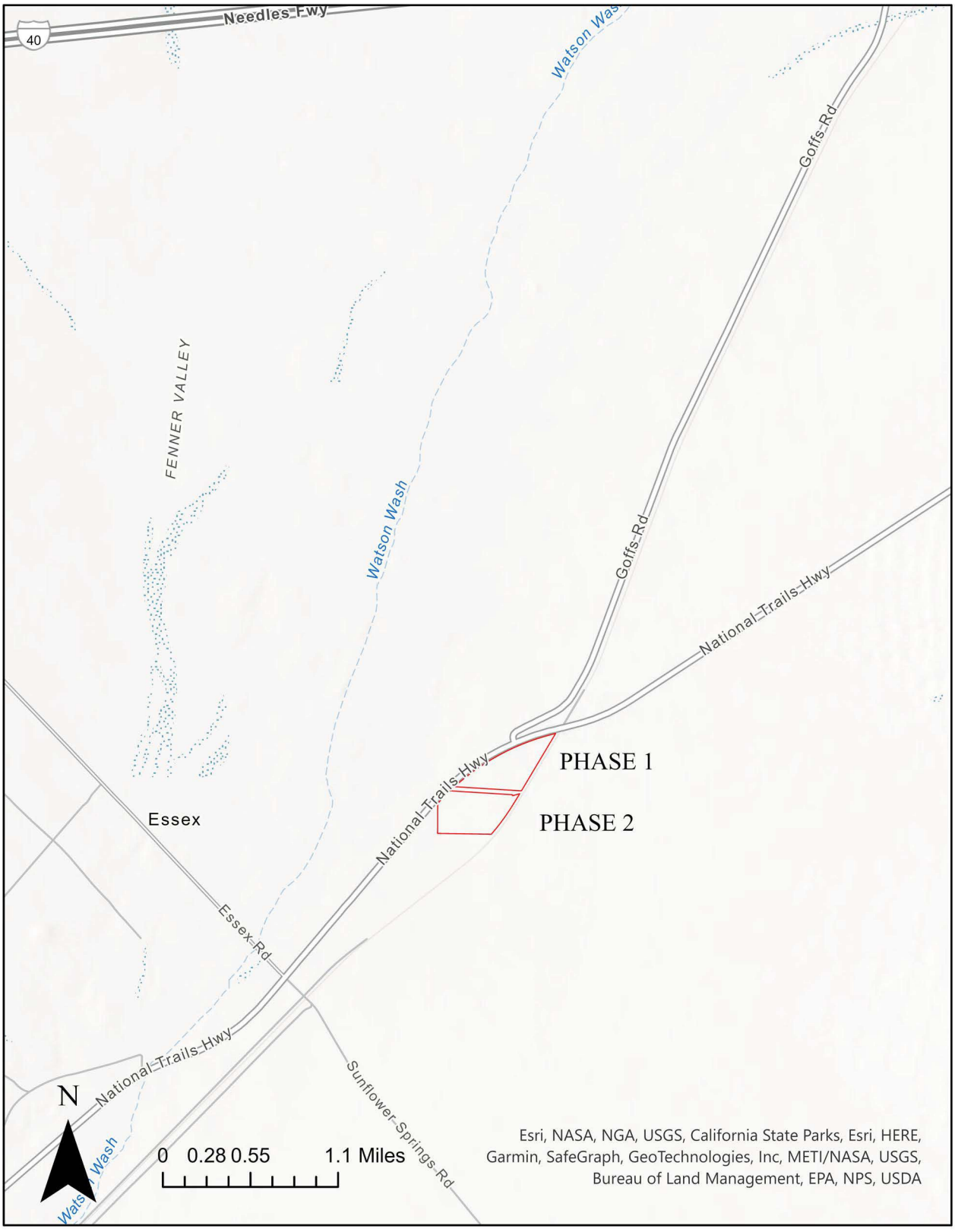
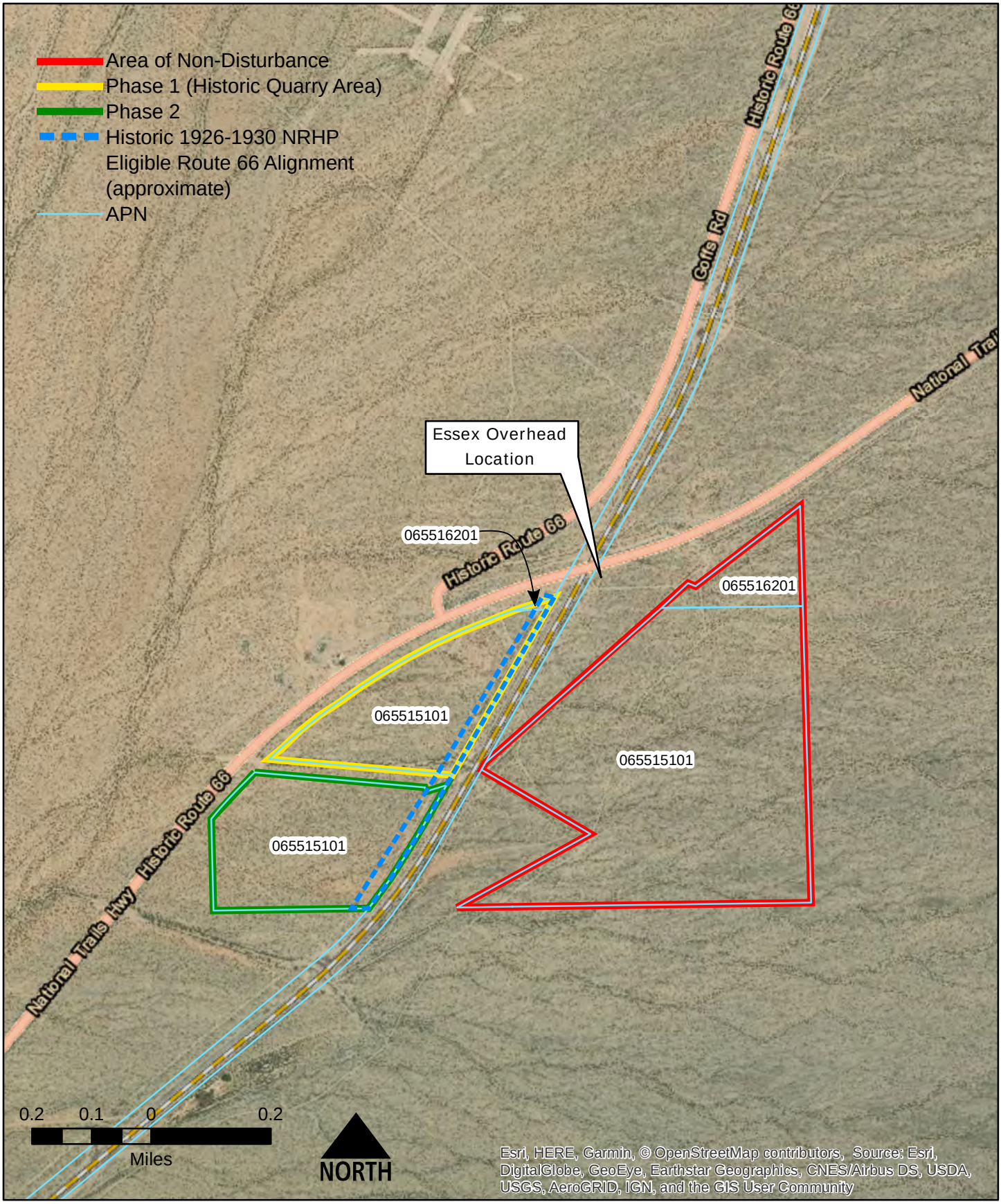


FIGURE 2 PROJECT VICNITY MAP

LEATHERMAN
BioConsulting, Inc.



SAN BERNARDINO COUNTY

PROPOSED ESSEX OVERHEAD QUARRY

NOTE:

MAPPING AND TOPOGRAPHIC DATA PROVIDED BY THE COUNTY OF SAN BERNARDINO

BENCHMARK:

CCS83 ZONE 5, NAD-83(2011) EPOCH 2010.0

BASIN OF BEARINGS:

FD 3 1/4" BRASS DISK IN CONCRETE STAMPED
"J731 – 1944", UP 0.40' (NGS BM 'EU0318')
NAVD-88 ELEVATION = 1816.866'

REGISTERED PROFESSIONAL ENGINEER
JAMES T. STANTON
No. C-70944
Exp. 6-30-23
CIVIL
STATE OF CALIFORNIA

08-22-22

120 0 120 240 360
SCALE: 1"=120'

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EST. 1941

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SAN BERNARDINO, CA 92408
FAX (909) 381-1721
www.bonadiman.com

No.	Date	By	Revision Description
1			
2			
3			
4			
5			

Prepared By
LILBURN CORPORATION
1905 Business Center Drive San Bernardino, CA 92408
909.890.1818 Fax 909.890.1809

60 0 60 120

Scale: 1 inch = 120 feet

Map Prepared By: Lilburn Corporation (TAG)
Projection: CA SPCS, Zone 5, NAD83 Feet.
Contour Interval = 1 Feet
Topography: County of San Bernardino/2021
Surveyor: County of San Bernardino/2021
Aerial Date: 8/2021

MINE PLAN

ESSEX QUARRY MINE PLAN
COUNTY of SAN BERNARDINO, CALIFORNIA

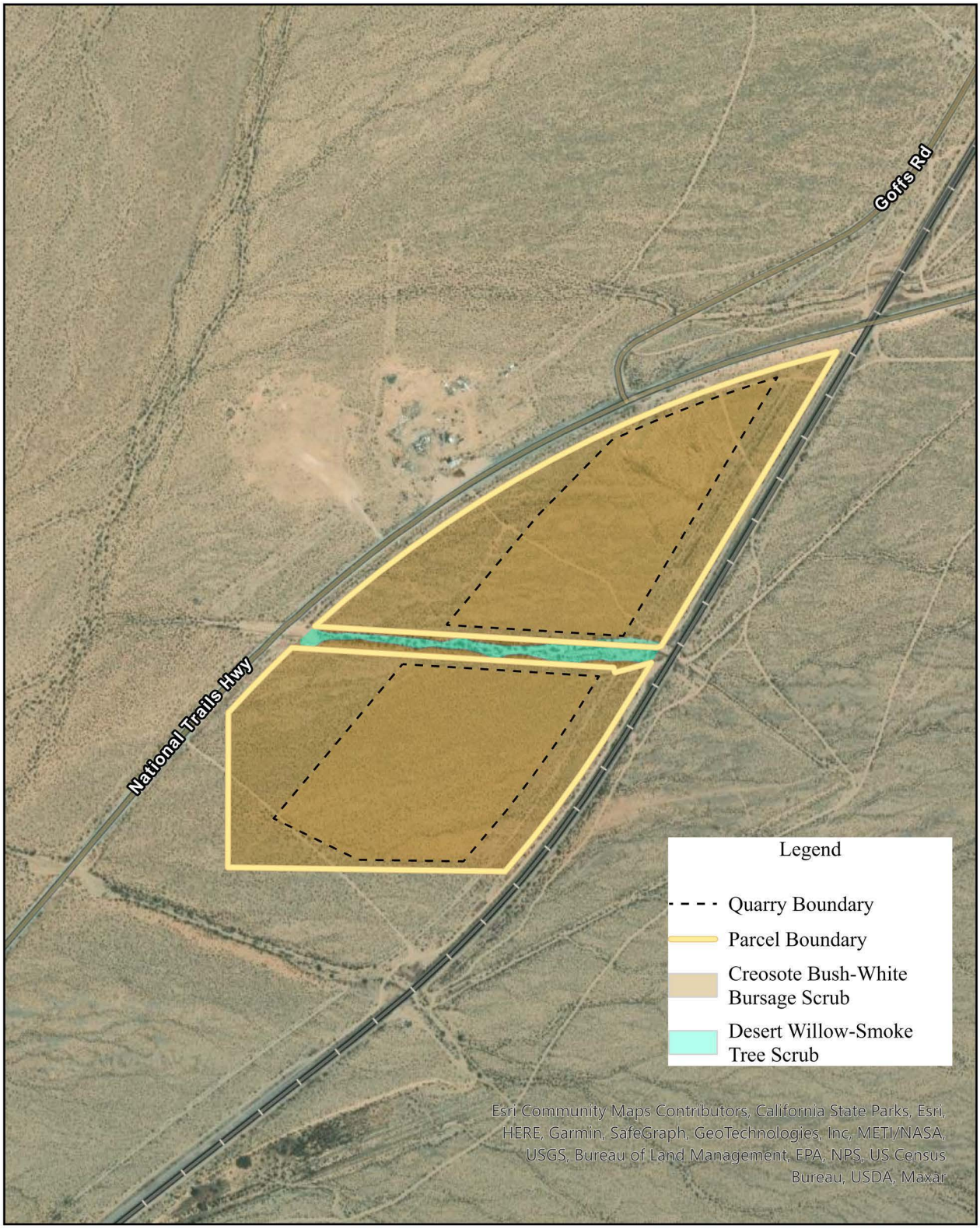
SHEET INDEX

Sheet	Description
1	Mine Plan and Cross Sections
2	Reclamation Plan and Cross Sections

STATUS
Conceptual Preliminary Draft **Draft** Final

Scale: 1"=120'
Date: 08/2022 (TAG)
DGN: Sht1of2 214928 MP.dgn

Sheet **1** of **2**



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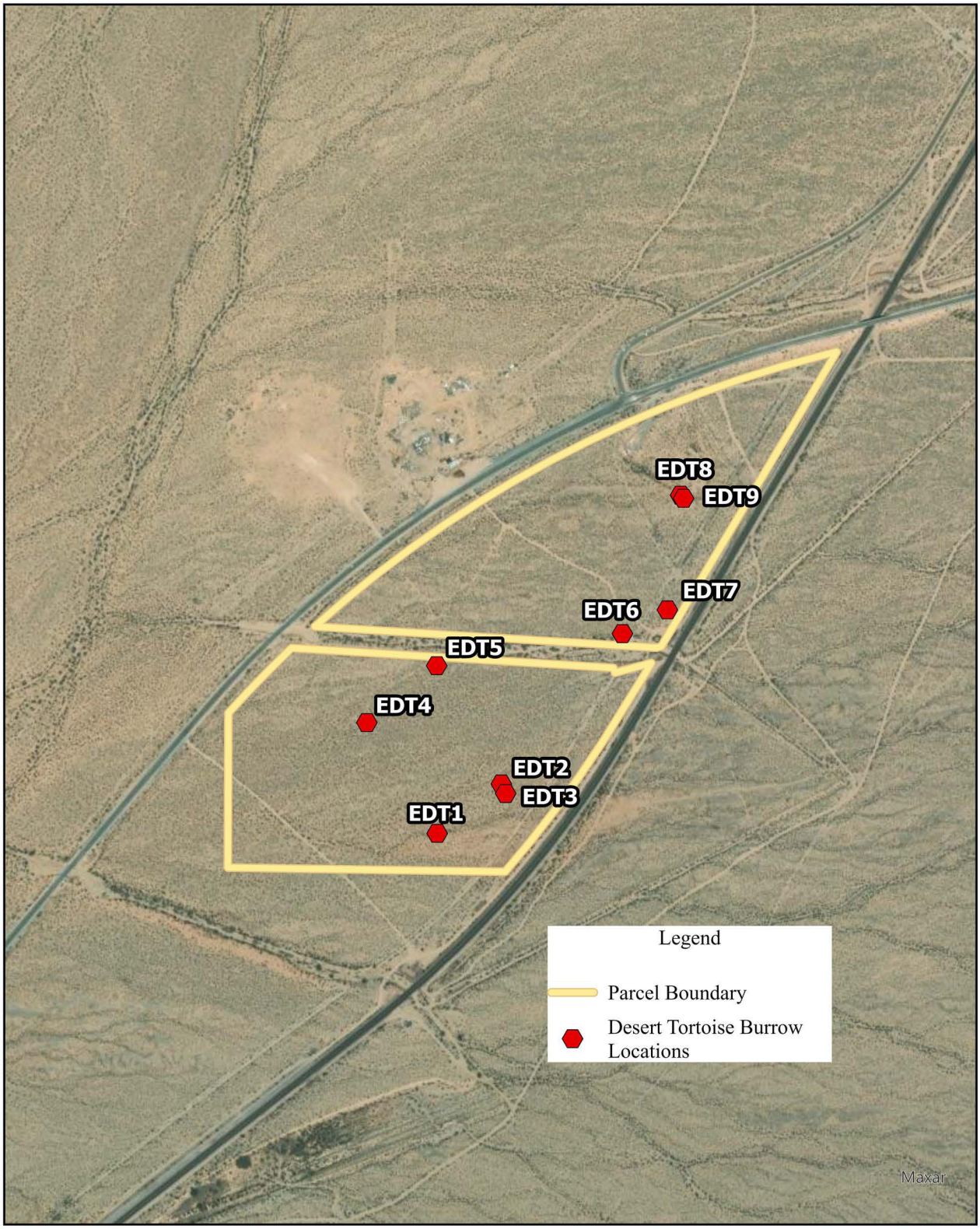
0 250 500 1,000 1,500 Feet

FIGURE 5 PROJECT VEGETATION MAP

LEATHERMAN BioConsulting, Inc.



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Feet

FIGURE 6 DESERT TORTOISE BURROW LOCATIONS

LEATHERMAN
BioConsulting, Inc.

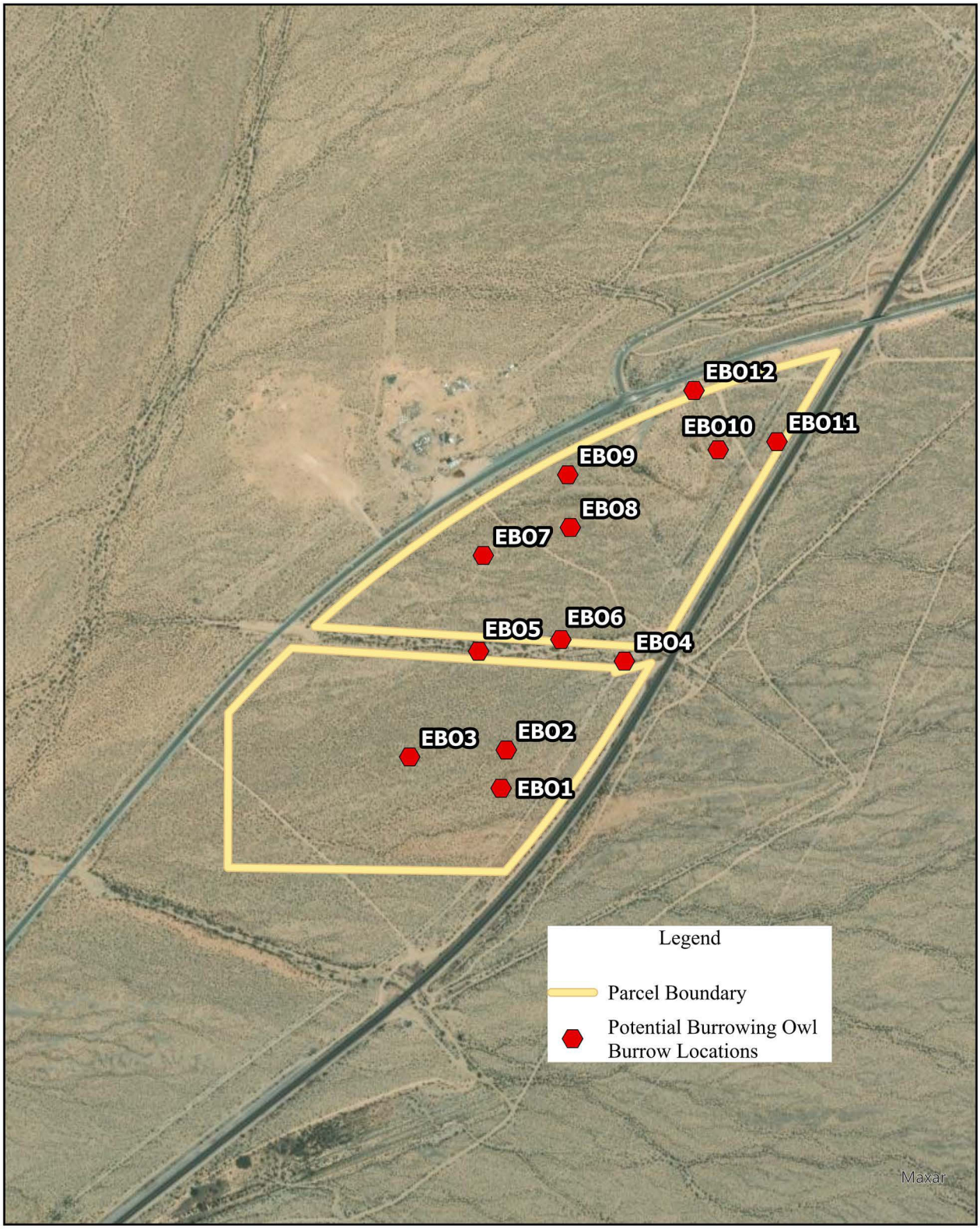

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FIGURE 7 POTENTIAL BURROWING OWL BURROW LOCATIONS

0 250 500 1,000 1,500 Feet

LEATHERMAN BioConsulting, Inc.

Appendix A

Plants Species Observed on the Project Site

SPECIES	Common Name
EUDICOTS	
ASTERACEAE - SUNFLOWER FAMILY	
Ambrosia dumosa	white bur-sage
Ambrosia salsola	cheesebush
Chaenactis fremontii	Fremont pincushion
Encelia farinosa	incienso brittlebush
Encelia frutenscens	rayless encelia
Eriophyllum lanosum	woolly eriophyllum
*Rafinesquia neomexicana**	desert chicory
BORAGINACEAE - BORAGE FAMILY	
Amsinckia tessellata	
Pectocarya platycapa	slender pectocarya
Plagiobothrys sp. (vegetative)	popcorn flower
BRASSICACEAE - MUSTARD FAMILY	
*Brassica tournefortii**	sahara mustard
Lepidium nitidum	shining peppergrass
CACTACEAE - CACTUS FAMILY	
Cylindropuntia ramosissima	branched pencil cholla
Opuntia basilaris var. *basilaris*	beavertail
Echinocactus polycephalus	cotton top
CLEOMACEAE - SPIDERFLOWER FAMILY	
Peritoma arborea	bladderpod
FABACEAE - LEGUME FAMILY	
Psorothamnus spinosus	smoke tree
Senegalia greggii	catclaw
ONAGRACEAE - EVENING PRIMROSE FAMILY	
Eremothera boothii	Booth's camissonia
Oenothera ssp.	
PAPAVERACEAE - POPPY FAMILY	
Eschscholzia minutiflora	small flowered California poppy
PLANTAGINACEAE - PLANTAIN FAMILY	
Plantago ovata	woolly plantain

POLEMONIACEAE - PHLOX FAMILY

Loeseliastrum schottii	little sunbonnets

POLYGONACEAE - BUCKWHEAT FAMILY

Chorizanthe brevicornu	brittle spineflower
Chorizanthe rigida	devil's spineflower
Eriogonum ssp.	

ZYGOPHYLLACEAE - CALTROP FAMILY

Larrea tridentata	creosote bush

MONOCOTS

AGAVACEAE - CENTURY PLANT FAMILY

Hesperocallis undulata	desert lily

POACEAE - GRASS FAMILY

*Bromus rubens**	red brome
*Schismus barbatus**	Mediterranean schismus

* Non-native species.

Appendix B

Wildlife Species Observed on the Project Site

COMMON NAME	SCIENTIFIC NAME
REPTILES	**REPTILIA**
Spiny Lizards, Horned Lizards, etc.	**Phrynosomatidae**
Side-blotched lizard	*Uta stansburiana*
Turtles and Tortoises	**Testudinidae**
Desert tortoise (inactive burrows)	*Gopherus agassizii*
BIRDS	**AVES**
Bluebirds and Thrushes	**Turdidae**
American robin	*Turdus migratorius*
Shrikes	**Laniidae**
Loggerhead shrike	*Lanius ludovicianus*
Jays and Crows	**Corvidae**
Common raven	*Corvus corax*
Gulls and Terns	**Laridae**
Rock pigeon	*Columba livia*
Waxwings	**Bombycillidae**
Phainopepla	*Phainopepla nitens*
MAMMALS	**MAMMALIA**
Pocket Mice and Kangaroo Rats	**Heteromyidae**
Kangaroo rat (burrows)	*Dipodomys* sp.
Dogs, Wolves and Foxes	**Canidae**
Kit Fox (inactive burrows)	*Vulpes macrotus*
Coyote (scat, tracks)	*Canis latrans*

Appendix C

Representative Photographs of the Project Site

Photo 1. North end of Phase 1 looking south in old quarry pit.

Photograph 2. Near southeast corner of Phase 1 looking north. Railroad track is visible along right side of photograph.

Photograph 3. Near northeast corner of Phase 2 looking west. Berm along wash between Phase 1 and Phase 2 visible along right side of photograph.

Photograph 4. Near southeast corner of Phase 2 looking northwest.