MINE RECLAMATION PLAN
FOR THE
ESSEX SAND & GRAVEL MINE
CA MINE ID#91-36-0120

(Previously Permitted by County as
Mine Reclamation Plan 94M-01)

Prepared For:

Skanska USA Civil West
1995 Agua Mansa Road
Riverside, CA 92509

Submitted To:

San Bernardino County
Land Use Services Department
385 North Arrowhead Avenue, 1st Floor
San Bernardino, California 92415

Prepared By:

Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408

August 2024

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SUMMARY

Skanska USA Civil West (Skanska) submitted an application to the San Bernardino County Land Use Services Department for a renewed Mine Reclamation Plan (2024 Plan) for the existing Essex Sand & Gravel Mine (CA MINE ID #91-36-0120). The mine site is located on Yeager Skanska Inc. owned privately held lands on the southeast side of U.S. Highway 66 (Route 66 and/or National Trails Highway (NTH)); 6.5 miles southwest of the intersection with Interstate 40 (I-40). The site is approximately six miles northeast of Essex, 33 miles west of Needles, and over 100 miles east of Barstow in the far eastern Mojave Desert within San Bernardino County (see Figures 1 and 2).

The mine site consists of approximately 50 acres within an approximate 90-acre plan boundary within the central portion of Section 13, Township 8 North, Range 17 E (T8N, R17E), SBBM within USGS Fenner, CA 7.5 Quadrangle. The entire mine site is within portions of Assessor's Parcel Number (APN) 0655-181-16 which consists of 536.6 acres owned by Yeager Skanska Inc. on the southeast side of the NTH. A mine reclamation plan and an Initial Study/Mitigated Negative Declaration to comply with the California Environmental Quality Act (CEQA) were approved by the County in 1994 (94M-01) (1994 Plan) under the previous owner, E. L. Yeager Construction. The site was used for Caltrans and other road improvements intermittently from 1994 through about 2005. The 1994 Plan operations permit expired in 2014, and the 1994 Reclamation Plan expired in 2019. Since around 2005, the site has been generally inactive with an "idle" status.

Despite the expiration of the 1994 permit, Skanska has maintained the site in a safe condition, submitted annual mining reports to the County and the State Division of Mine Reclamation (DMR), provided updated financial assurances cost estimates (FACEs) and financial assurance mechanisms (FAMs); and has been conducting reclamation. Currently the reclamation bond for the site totals $159,899. At this time, Skanska plans on renewing the permit within the 1994 fenced site to provide road materials for various Caltrans and County road projects in the region on I-40 and the NTH that occur intermittently as needed for maintenance, repair, and improvements.

In the eastern Mojave Desert, public roads are impacted by flooding and erosion and often require repairs, maintenance and overall improvements. Due to the remote location of this area and that most lands are public lands managed and protected by the Bureau of Land Management (BLM), it is important to maintain local private aggregate sites to provide road materials for the eastern desert region. This site reduces the need to transport materials from more distant aggregate sources.

The 1994 Plan allowed mining on approximately 32 acres within the unnamed wash to a depth of 20 feet with 3H:1V side slopes, a processing plant on ten acres, an asphalt concrete plant on five acres, an overburden stockpile on two acres and a salvaged plant holding area or nursery on one acre (total of 50 acres). The approved production rates were up to 400,000 tons per year (tpy) with about 10% overburden or surface material to be used for reclamation. Currently, approximately 50 acres are disturbed by past mining and processing areas; 25 acres within the wash which has been deemed reclaimed per County inspections, and 25 acres in the operational plant areas to the east of the wash which will be mined in the 2024 Plan.

Skanska purchased the site in 2005 and only occasionally utilized the site since that time. Skanska is now applying to re-permit the site for 50 years to provide aggregates for regional road projects. The 2024 Plan proposes to continue the past permitted processing operations (crushing, screening, and asphalt production) in similar locations. Future planned mining will be conducted on approximately 40 acres to the east and outside of the wash mostly within the previously permitted 1994 Plan boundary and within the existing desert tortoise fencing (see Table 1). The pit will be excavated in the process plant locations (15 acres disturbed) and on about 25 acres of undisturbed areas. The processing plants are all portable and will be moved as needed to accommodate planned mining.

No future mining will be conducted in the wash area to avoid possible hydrological and biological impacts and streambed regulations. Recent County inspections have stated that *"the wash area crossing the central portion of the site appears to be reclaimed and supports a vibrant riparian community of maturing smoke trees. The operator is advised to continue protecting areas with maturing vegetation*." The southeastern portion of the wash planned for mining was never disturbed and as such this area is being removed from the 2024 Plan boundary. Other minor areas observed as disturbed by County inspections will be incorporated into the 2024 Plan.

The disturbance area would be approximately 50 acres within an overall Reclamation Plan area of approximately 90 acres. The outside reclamation slopes would be 3H:1V with a depth of 30 feet. The reclaimed wash channel will be set back 50 feet from the planned mining and operations area with a new desert tortoise exclusion fence erected between the two areas.

Table 1
Past , Existing, and Planned Areas
Essex Sand & Gravel Mine

Description	1994 Plan	2024 Plan
Overall Boundary	92	90
Planned Disturbance Area	50	50
Pit	32 (25 ac. disturbed in wash & deemed reclaimed)	40 (15 ac. disturbed outside wash & 25 ac. to be disturbed)
Operations Areas	18 (disturbed)	10 (disturbed)
Undisturbed/Setbacks	42	15
Wash Area (deemed reclaimed by Co. inspection)	25 (mined under 1994 Plan & deemed reclaimed)	25 (deemed reclaimed; to be avoided in 2024 Plan)

1.0 MINE PLAN

Skanska is submitting an application for a Mine Reclamation Plan (Plan) for the Essex Sand & Gravel Mine that was previously permitted under Mine Reclamation Plan No. 94M-01. This proposal will be similar to the previous permit to annually provide up to 400,000 tons of material

for road projects on the I-40 and NTH in the eastern Mojave Desert. Operations will vary substantially from year to year from inactive up to the 400,000 tpy depending on federal, Caltrans, and County Road projects. The reclaimed end use of the site will be revegetated open space.

The site elevations range from approximately 2,275 feet above mean sea level (amsl) in the northwest along the NTH to approximately 2,375 feet amsl in the southeast extent of mining; slightly increasing in elevation from the NW to SE by approximately 100 feet. The NTH with a 100-foot right-of-way (ROW) is aligned to the northwest side of the mine site with a 500-foot setback to mining on the northwest.

The undisturbed portions of the project site are mainly vegetated with creosote bush – brittle bush and the wash to the west (not a part of future activities) is composed of desert wash vegetation (desert willow – smoke tree wash woodland). Besides the NTH, the adjacent properties to the east and south are vacant, undisturbed desert lands. The area to the northwest of the NTH has been used for mining by other private construction companies in the past.

Landowner: Yeager Skanska Inc. (aka Skanska USA Civil West)
1995 Agua Mansa Road
Riverside, CA 92509
951-368-6463

Operator: Skanska USA Civil West
1995 Agua Mansa Road
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951-368-6463
John Matich; john.nmatich@skanska.com

Representative: Skanska and
Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408
909-890-1818; Frank Amendola; frank@lilburncorp.com

Countywide Plan: Land Use Category – Open Space (OS);
Zoning – Resource Conservation (RC)

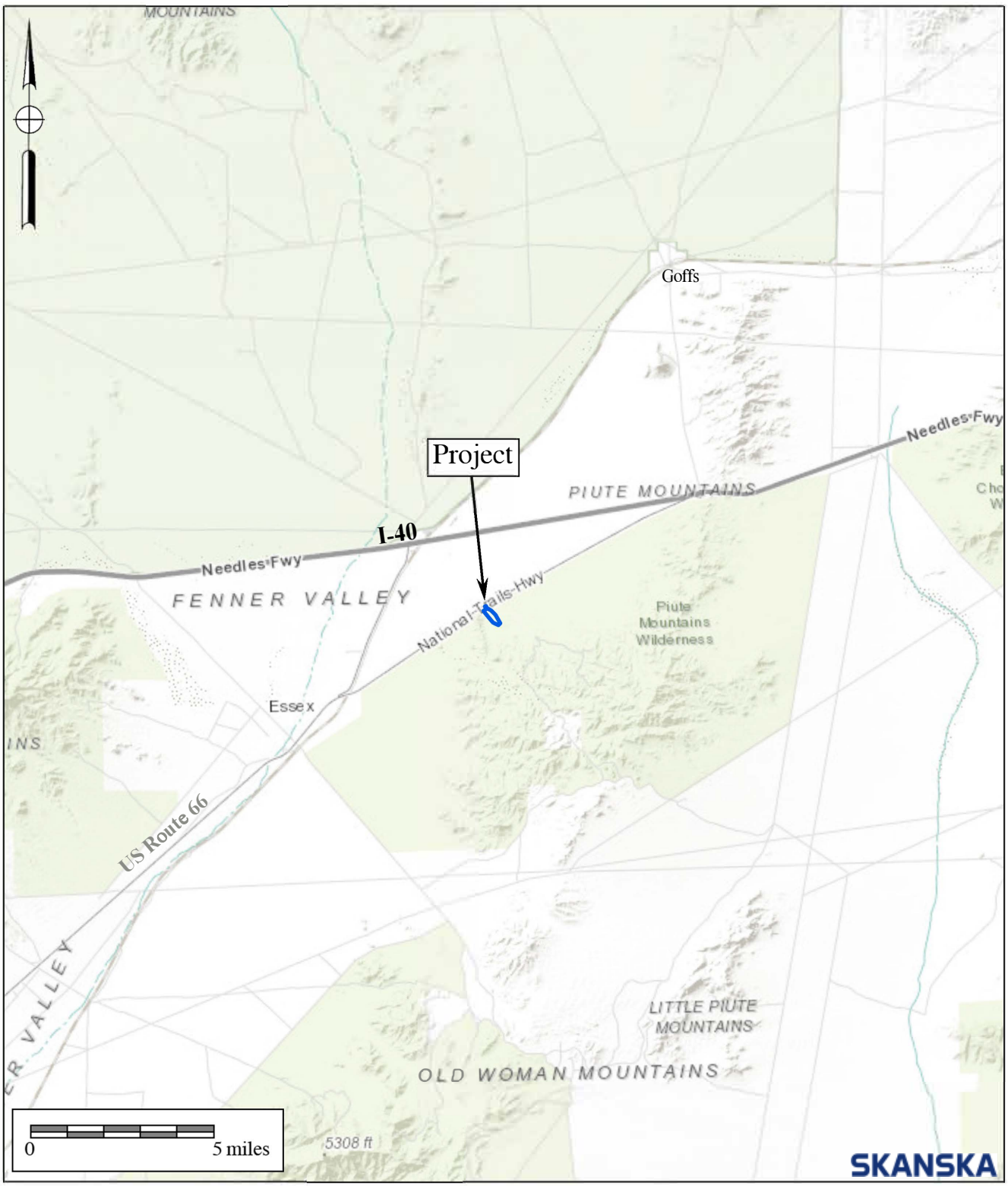
APNs: portions of 0655-181-16; Section 13, T8N, R17E, SBBM.

Parcel Size: Approximately 536.6 acres total

Mine/Reclamation Plan Boundary Area: approx. 90 acres

Pit Area: 40 acres **Plant and Road Area:** 10 acres

Estimated Operating Life: 50 years from County approval (assumed March 1, 2025).



BFSA Environmental Services
A Perennial Company

SKANSKA
USA CIVIL WEST
1995 AGUA MANSA ROAD
RIVERSIDE, CA, 92509
CA MINE ID #91-36-0120

Figure 1

General Location Map

Essex Sand & Gravel Mine

DeLorme (1:250,000 series)

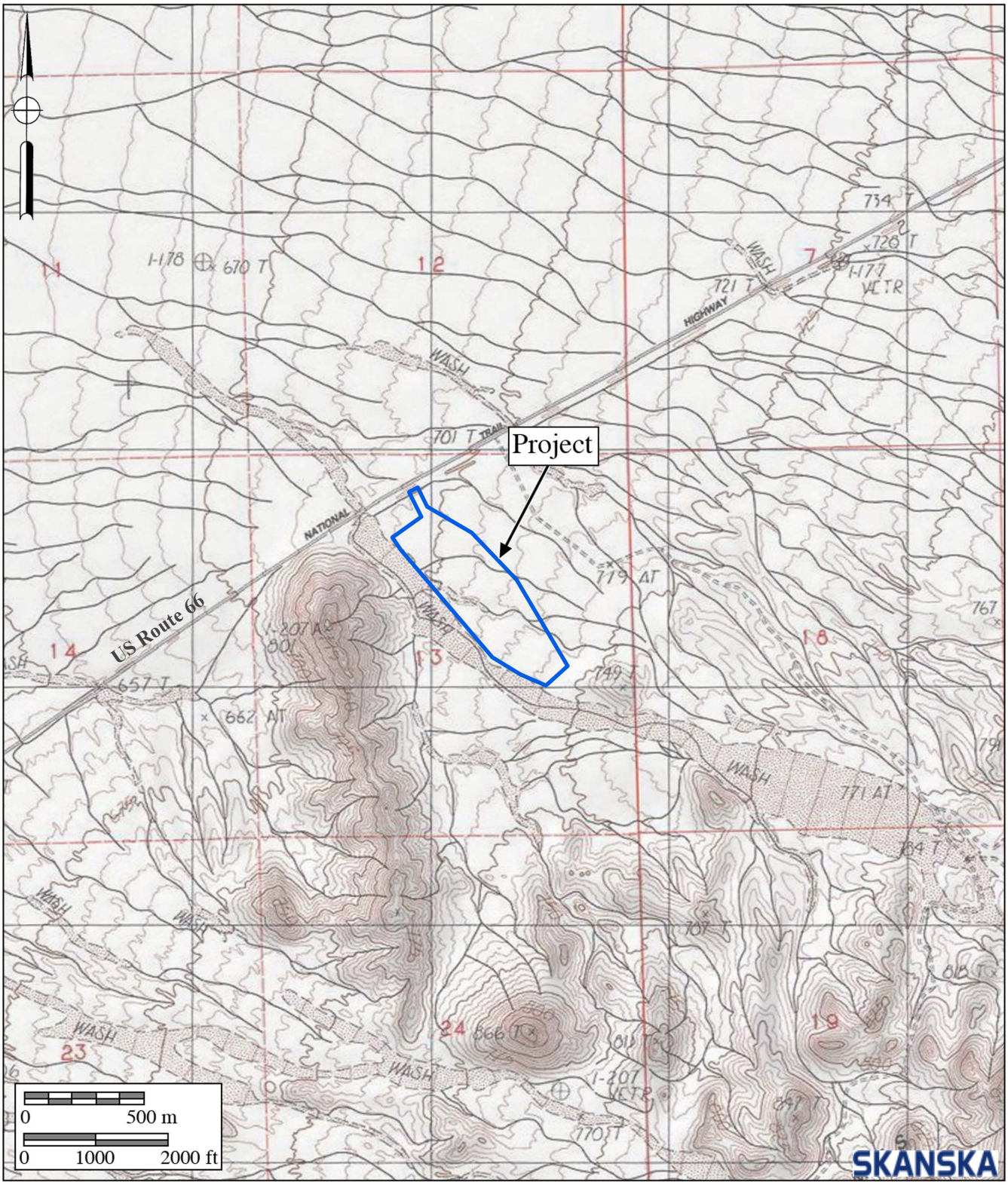


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Figure 2

Project Location Map

Essex Sand & Gravel Mine

USGS *Fenner* Quad (7.5-minute series)

Estimated Operations Termination Date: February 28, 2075 (with approval by March 1, 2025) or 50 years from date of County approval

Area to be Reclaimed: 50 acres to be revegetated with native desert species; 25 acres of wash area deemed reclaimed, and remainder in setbacks.

Estimated Reclamation Completion: February 28, 2077 (two years after termination of operations followed by monitoring until revegetation meets success criteria)

Reclaimed End Use: Open Space

1.1 MINING OPERATIONS

Refer to Sheet 1 and Figures 3 and 4 for the Mine Plan and Mine Plan Cross Section, respectively.

Mining operations will be undertaken over a period of 50 years beginning in 2025 and extending until 2075. Up to an estimated 400,000 tons of material may be mined for road construction and maintenance projects on the I-40 and NTH. Operations will vary substantially from year to year from inactive up to the 400,000 tpy depending on federal, Caltrans, and County Road projects. The reclaimed end use of the site will be revegetated open space.

The 50-acre mining and operational areas will be fenced as determined in the field with a combination of desert tortoise fencing and 4-strand wire according to the current protocols per latest Desert Tortoise Field Manual (USFWS). The north and east side of the project area is currently fenced with tortoise fencing required from the 1994 Plan (to be repaired as needed) and new fencing will be constructed on the west side of the new pit approximately 50 feet from the banks or edge of the existing wash as determined in the field.

Mining will take place in a 40-acre shallow pit extending northwest to southwest for approximately 2,400 feet with an average width of about 800 feet. Mining will be conducted from approximately 2,300 feet amsl on the northwest to 2,375 feet amsl on the southeast rim with an average depth of 30 feet or an average floor elevation of 2,340 feet amsl. Mining will be conducted with 3H:1V or 18° overall slopes. The volume of the pit is estimated at 1.8 million cubic yards or approximately 2.7 million tons.

Setbacks of a minimum of 50 feet will be established along the southwest side of the pit adjacent to the wash to avoid hydrologic and biologic resources and a 500-foot setback established on the northwest side adjacent to NTH. These setbacks will include desert tortoise wire exclusion fencing with warning signs on the outside edge of the property and secured gates at the access road. Access into the mining area is from the NTH with an existing 50-foot-wide compacted gravel road extending to the 10-acre operations area on the northwest of the pit. Once off the project site, the street-legal transport trucks will utilize NTH to construction sites.

The following activities will be conducted prior to opening new areas for mining to limit disturbed areas and to facilitate ongoing and future reclamation and revegetation:

- Excavation and other disturbance limits will be located and marked in the field;
- Specified plants per the California Desert Plant Protection Act if found onsite and cactus, yucca, and cholla that can tolerate transplant will be salvaged to the degree possible and will be stored on-site in a nursery area and replanted on reclaimed land available for revegetation. Note that there are no western Joshua trees (*Yucca brevifolia*) onsite (a candidate species under the California Endangered Species Act (CESA); and
- Salvageable "topsoil" or growth media up to 0.5 feet typically will be placed in a separate identified topsoil stockpile(s) and clearly marked and covered with larger material to limit wind and water erosion. If needed, the native overburden or waste materials will be crushed for additional soil cover.

Mining of the site is achieved with one loader and/or excavator, and a dozer and/or grader to break, move, and load material directly into a crushing and screening plant, or transported by a conveyor or truck from the mining area to the plant feeder. No blasting is required. A list of the typical equipment to be used on-site is included in Table 2. Based on need, a portable crushing and screening plant with conveyors and a portable asphalt batch plant will be utilized onsite for construction projects. A portable office, storage structure. and scales would also be established on-site. No permanent buildings or facilities will be constructed on-site. Excavated material (raw or processed) road demolition material, recycled material, and soils may be stockpiled onsite for use as needed for construction and maintenance.

Truck Traffic

Truck traffic per day and year will be entirely based on construction projects, schedules, and production, which may vary from zero to an average of 400,000 tons/year of both road base and asphaltic concrete. Based on street-legal 25-ton trucks and daily production of about 1,375 tpd (400,000 tpy per 6 days/week and 300 days/year), approximately 55 haul trucks may access the site per day. Assuming half of aggregates are made into asphalt, approximately 35 asphalt trucks and 27 aggregate trucks would ship material per day; total of 62 trucks per day.

Dust Control

Dust control measures must be in compliance with MDAQMD Rules 401 (limiting visible emissions); 402 (avoid nuisance emissions to people or businesses or property); and 403 (prohibits visible dust from crossing property lines and controlling fugitive dust). To minimize dust generation, a water truck will be retained for use during excavations and loading of haul trucks. The mine operator shall water spray working mine areas and access roads onsite on a regular basis and more frequently as needed during windy conditions. Water used for dust control shall be obtained from a local water supplier via a water truck. Un-surfaced haul road and access road will also have dust controlled with or covered with road base material as needed.

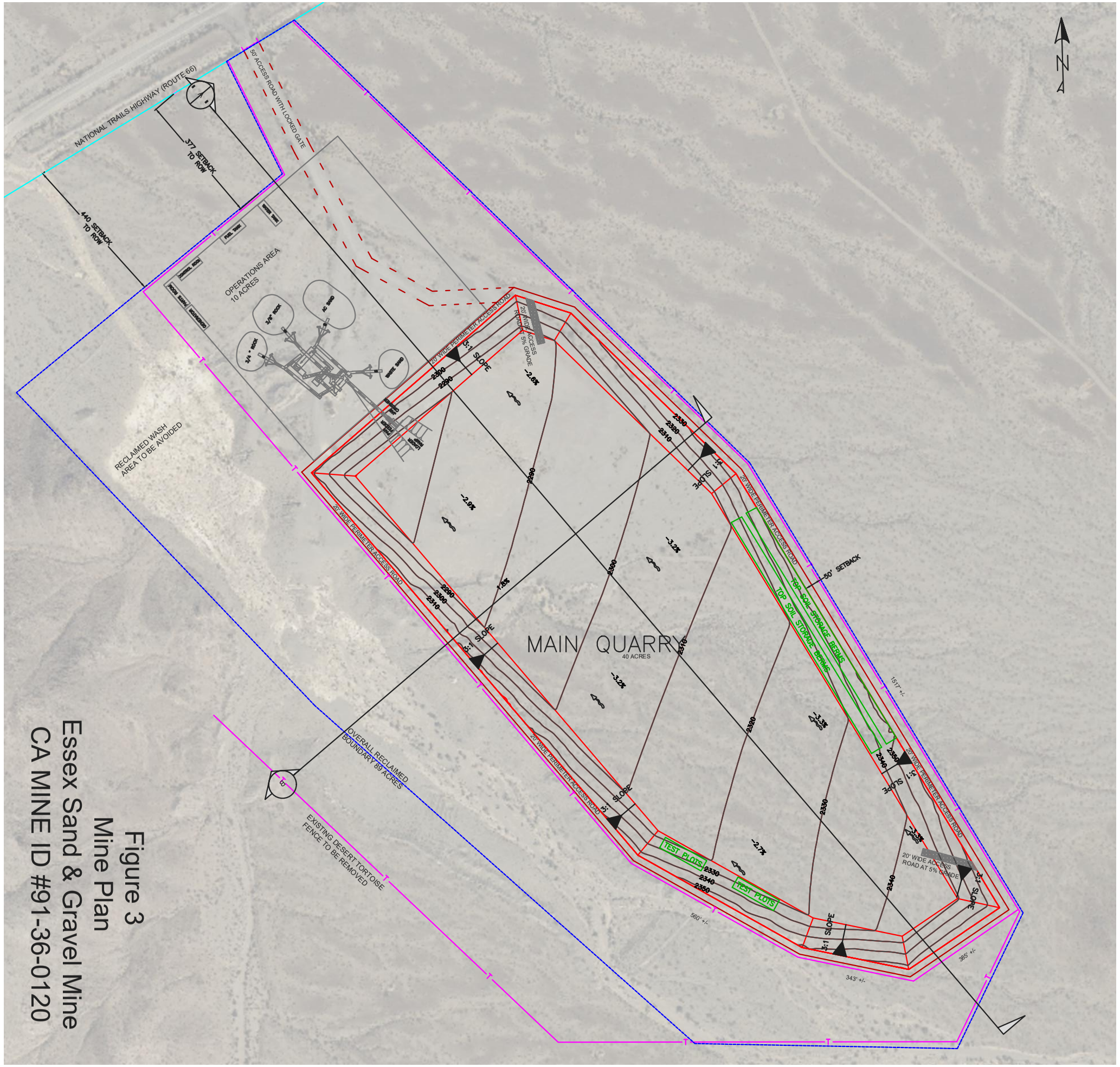


Figure 3
Mine Plan
Essex Sand & Gravel Mine
CA MINE ID #91-36-0120

GRAPHIC SCALE 1"=300' (FEET)

0 300 600 900

LEGEND:

- PROPERTY LINE
- BLM- BUREAU OF LAND MANAGEMENT
- PROPOSED DESERT TORTOISE FENCE
- OVERALL REC PLAN BOUNDARY
- OPERATIONS AREA
- SLOPE INDICTOR
- CROSS SECTION

MINING NOTES:

ESSEX SAND & GRAVEL MINE PLAN
CA MINE ID #91-36-0120

MINE PLAN NOTES

Mine: Essex Sand & Gravel Mine

Mineral: Construction aggregates

Mine Operator: Yeager Skanska Inc. (aka Skanska USA Civil West)
1995 Agua Mansa Road
Riverside, CA 92502
951-368-6463
John Matich; john.nmatich@skanska.com

Landowner: Yeager Skanska Inc. (aka Skanska USA Civil West)
1995 Agua Mansa Road
Riverside, CA 92502
951-368-6463

Applicant: Same as Operator

Owner of Mineral Rights: Same as Landowner

Representative: Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
909-890-1818

Civil Engineer: Yeager Skanska Inc. (aka Skanska USA Civil West)
1995 Agua Mansa Road
Riverside, CA 92502
951-368-6463

Map Preparer: Yeager Skanska & Lilburn Corporation

Date of Map: February 2024

Utilities
Water source: Caltrans Essex Maintenance Station by water truck
Sewage disposal: Portable toilets
Electricity: None
Gas: None
Telephone: Mobile phones

Countywide Plan
Project Site: Land Use Category - Open Space (OS)
Zoning - Resource Conservation (RC)

The surrounding land uses are as follows:
Onsite: Past mining under Mine Reclamation 94M-01; 25 acres considered disturbed; no planned mining in wash; vacant, desert lands.
North: National Trails Highway (NTH); mining operations north of NTH; and vacant desert land.
South: Vacant desert land.
East: Vacant desert land.
West: Vacant desert land.

Legal Description
A.P.N.: 0655-181-01 (536.6 acres)
Section 13, T8N, R17E, San Bernardino Base and Meridian, in the County of San Bernardino, State of California

Mine Area: Approx. 50 acres including a 40-acre shallow pit and ten acres for an operations area and access road.

Access: Existing 50-foot-wide compacted gravel road directly from NTH.

Estimated Operating Life: 50 years from County approval or June 30, 2074 (assumed by July 1, 2024).

Area to be Reclaimed: 50 acres to be revegetated with native desert species; 25 acres of wash area deemed reclaimed, and remainder in setbacks.

Estimated Reclamation Completion: June 30, 2076 (two years after termination of operations followed by monitoring until revegetation meets success criteria)

Reclaimed End Use: Open space.

Signage (Public Safety)
Public access to the site will be restricted by the site perimeter with desert tortoise wire fencing and locked access gates during operations and reclamation. The pit area will be bermed. Warning signs with contrasting background lettering will be installed every 500 feet along the approved surface mine boundary shall be installed and shall read "No Trespassing - Keep Out; Surface Mining Operation" or similar during mining. Signs will be approximately 1-foot high and 2 feet wide. Upon completion of reclamation and revegetation, fencing will be removed, however the access road gate will remain in -place.

The reclaimed 3H:1V slopes will be of sufficient low gradient as not to cause a hazard to public safety if the public illegally trespasses onto the site.

Plant and Tree Protection
The operator shall implement the reclamation and revegetation requirements as described in this Reclamation Plan. In general, this includes topsoil salvage, native seed collection, salvaging and transplanting of Mojave yucca cacti, and other species protected under the California Desert Native Plant Act (CDNPA) and the San Bernardino County Code Title 8, Chapter 88.01.060 Desert Native Plant Protection, and revegetation and monitoring in compliance with this Reclamation Plan.

There are no western Joshua trees (*Yucca brevifolia)* (CDFW candidate species) located on the site as it is outside the range of this species. No State and/or federally listed threatened or endangered species were observed on site during the field surveys.

ESSEX SAND & GRAVEL MINE

MINE PLAN

SHEET 2 OF 4

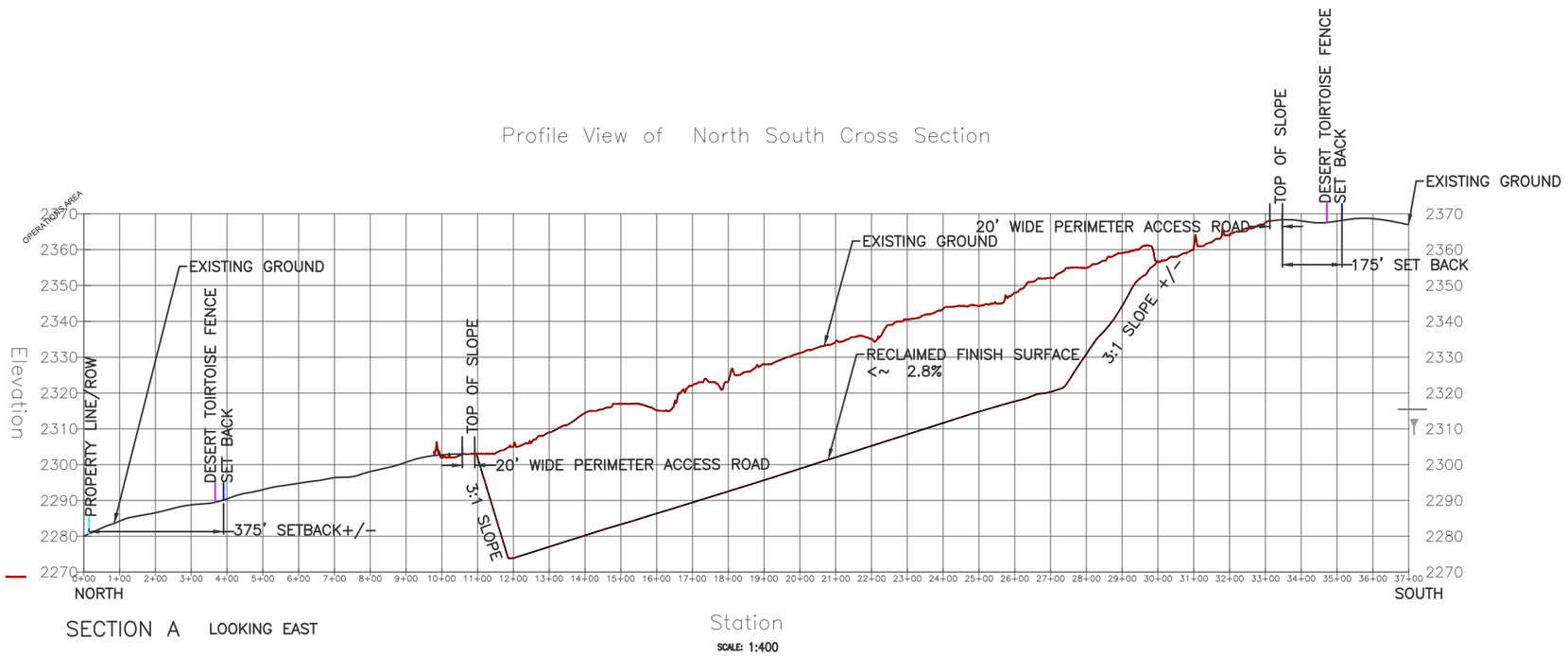
REV	DATE	DESCRIPTION
0	2/12/24	
-	-	
-	-	
-	-	
-	-	

DRAWN BY: Kilgore, Scott
CHECKED BY: Carney/Kilgore
DATE: February 15, 2024
SCALE: AS SHOWN
PROJECT NO.

REGISTERED PROFESSIONAL ENGINEER
SCOTT N. KILGORE
No. 83355
Exp. 03/31/25
CIVIL
STATE OF CALIFORNIA

SKANSKA
USA CIVIL WEST
1995 AGUA MANSA ROAD
RIVERSIDE, CA, 92509
CA MIN ID #91-36-0120

SKANSKA



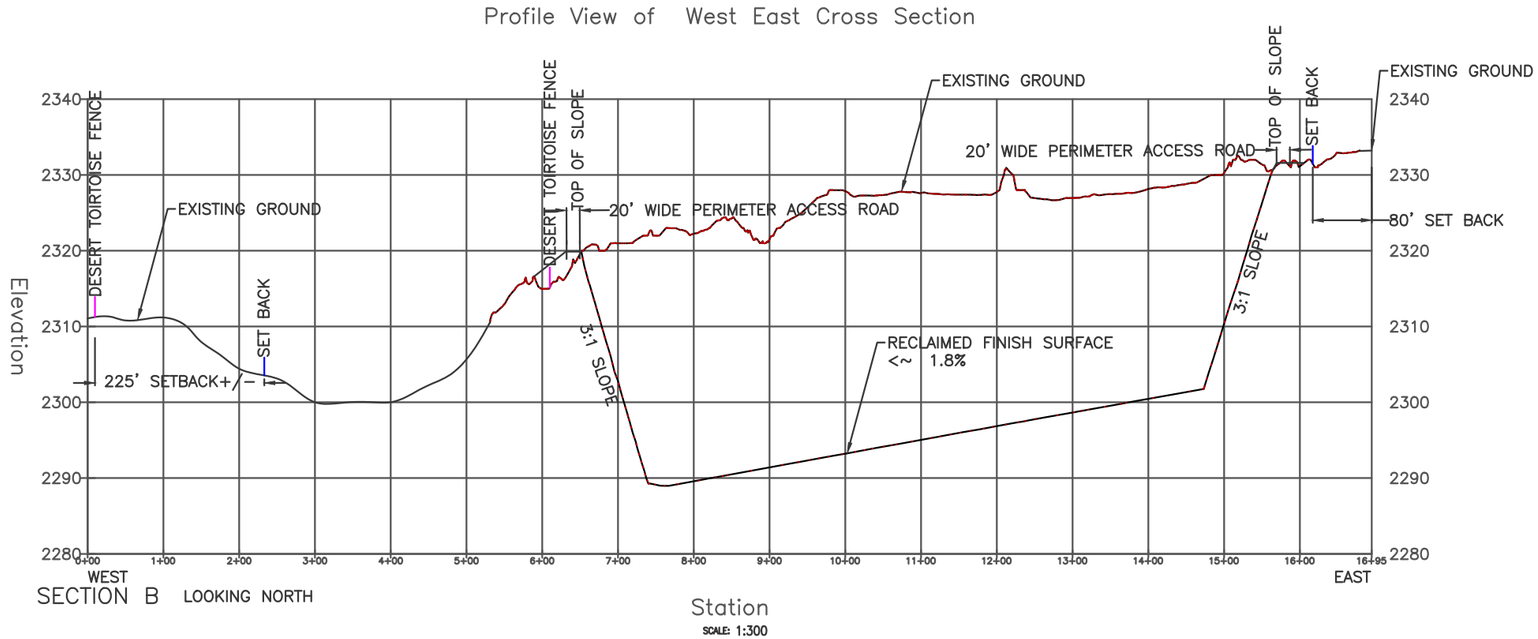


Figure 4
Mine Plan Cross Sections
Essex Sand & Gravel Mine
CA MINE ID #91-36-0120

ESSEX SAND & GRAVEL MINE

CROSS SECTION

SHEET 4 OF 4

REV	DATE	DESCRIPTION
0	2/12/24	
-	-	
-	-	
-	-	
-	-	

DRAWN BY: Kilgore, Scott
CHECKED BY: Carney/Kilgore
DATE: February 15, 2024
SCALE: AS SHOWN
PROJECT NO.

REGISTERED PROFESSIONAL ENGINEER
SCOTT N. KILGORE
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STATE OF CALIFORNIA

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USA CIVIL WEST
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RIVERSIDE, CA. 92509
CA MIN ID #91-36-0120

SKANSKA

Table 2
Mobile Mine Equipment (Typical)

Equipment Type	Typical Number	Hours/day	Purpose
Dozer and/or grader	1	4	Excavate and loosen material. Access construction and maintenance.
Dump / Haul Trucks (on-site)	2	4 – 8	Transportation of material to plant and stockpiles as needed
Excavator	1	4 - 8	Excavate and load material into feeder and trucks.
Cat 988 Loader or equivalent	1 - 2	4 - 8	Excavate and load material into feeder and trucks.
Lubrication/fuel maintenance service truck	1	Once per week	Service truck for onsite equipment
Portable Processing Plant (feed hopper, crusher, screen(s), conveyors,	1	8	Crushing/screening plant as needed to process aggregate for road base and asphaltic concrete production.
Generator(s) (diesel) (800 KW typ.)	1	8	Supplies power to plants.
Water Truck (4,000 gallons typical)	1	4	Water for dust control on mining areas, haul roads, and stockpiles and processing plant.

Source: Skanska 2024
Note that the equipment listed is typical and makes and models will vary.

Site Operations and Public Safety

Site operations will be conducted as needed intermittently primarily from 5:30 am till 6 pm (daylight hours only), up to 6 days per week; Monday through Saturday. Occasionally operations may be conducted on Sundays and nights (24/7) depending on road construction contract requirements and scheduling of road construction to avoid peak travel times. Approximately 10 employees are expected to work onsite. Active mining areas will comply with all federal (MSHA) and state (Cal-OSHA) mine safety regulations. Workers, including contractor labor, will be trained in mine safety and first aid. Access and haul roads will be designed with safety berms per MSHA requirements, the pit will be designed with safety benches with berms as needed, and inactive ramps and roads in mining areas will be blocked to prevent public access.

All refuse shall be disposed into approved trash bins (raven-proof) and removed by the operator or a commercial vendor. Portable toilets will be used on-site when in operation and serviced by a commercial vendor. Bottled water will be provided to employees. There are no water wells, portals, shafts, tunnels or openings located on-site that need to be closed.

Interim Management Plan

Skanska is in the road and highway construction business and requires varying quantities of aggregate products for the numerous construction projects in the eastern desert region. Over the life of the Essex Sand & Gravel Mine, it is expected that mining may occur on this site every other year but may occur more or less frequently with the unpredictable nature of public works, storm damage, and private projects in the region.

Sections 2770 of the Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code Section 2710 et seq.) states that within 90 days of a surface mining operation becoming idle, as defined in Section 2727.1, the operator shall submit to the lead agency for review and approval, an Interim Management Plan (IMP). The purpose of an IMP is to prevent or minimize adverse environmental effects from an idle mining operation and to ensure that residual hazards to the public health and safety are eliminated while the mine is idle. As defined in SMARA, § 2727.1, "Idle" means that an operator of a surface mining operation has curtailed production at the surface mining operation, with the intent to resume the surface mining operation at a future date, for a period of one year or more by more than 90 percent of its maximum annual mineral production within any of the last five years during which an interim management plan has not been approved.

The site operations, by design and intent, are scheduled for regular idle periods due to intermittent construction projects, during which it will follow an IMP to be submitted and approved by the County. During idle periods, the operator will implement the following procedures:

- Notification to be sent to the County of the start and ending of idle periods in accordance with SMARA;
- Removal of on-site equipment;
- Patrolling mine areas on an ongoing basis to discover any items that are inconsistent with the Site's Reclamation Plan or applicable regulations;
- Maintaining appropriate gates, signs, and fences around the Site;
- Monitoring slopes and vegetation and implementing remedial actions as necessary;
- Monitoring erosion and erosion control measures outlined in the Site's SWPPP and repairing erosion and erosion control measures as needed; and
- Inspecting mine areas and removing any deleterious or hazardous materials and trash in accordance with government requirements.

1.2 MINE WASTE

Although portions of the site have been disturbed in the past, those areas with topsoil will have the top 0.5 to one foot of surface material pushed into the storage stockpiles or perimeter berms shown on the mine plan. Overburden or waste material of approximately 50,000 tpy are expected or about 10%. Following each relocation of mining equipment and operations as mining moves, the overburden will be spread back over exposed areas for reclamation and reseeding per the reclamation plan.

There will be no imported waste materials or chemicals brought to the project site or stored on-site besides asphaltic oil, fuel and equipment maintenance fluids during active mining periods. Broken road materials may be transported to the site for recycling. Equipment maintenance and re-fueling will take place utilizing mobile maintenance trucks and portable onsite fuel tanks up to 10,000 gallons and conducted at the mine with appropriate required safeguards and best management practices (BMPs). Any used oil generated at the mine site will be collected and

transported for off-site recycling or disposal by approved methods and by properly trained and licensed personnel.

The Hazardous Materials Division of the San Bernardino County Fire Department is designated as the Certified Unified Program Agency (CUPA) for the County to focus the management of specific environmental programs at the local government level. Skanska will prepare a Business Emergency/Contingency Plan to include operations for the site. The Business Plan includes a hazardous materials inventory and Spill Prevention Control and Countermeasure Plan (SPCC) to ensure that on site materials are stored appropriately and contained in the event of uncontrolled release utilizing BMPs. Fuel storage specifications apply to all above ground fuel and oil containers. A Hazardous Materials Business Plan (HMBP) for the mine site that addresses any hazardous materials stored and used at these facilities will be prepared. The HMBP describes methods and procedures to minimize the potential for hazardous material and waste releases including an emergency response and contingency and spill response procedures. These wastes will be also contained and controlled by methods described in the Storm Water Pollution Prevention Plan (SWPPP).

1.3 ORE PROCESSING

The mined material will be loaded directly by the loader into a crushing and screening plant or transported by a conveyor or truck from the mining area to the plant feeder. Only portable process plants, ancillary facilities, and an asphalt batch plant would be established on-site for specific projects as needed. No permanent crushing or screening plant facilities are planned on-site. From the finished stockpiled materials (sand, 1/2" rock and 3/4" rock), the asphalt plant can process a pre-designed mix of asphalt concrete paving material. A front-end loader would feed each of the classified sizes of rock and sand into a "four bin" feeder. The rock, by computer selection and internal scales is fed into the dryer to remove moisture. The dryer is a gas burner (LPG) capable of drying and heating the rock and sand mixture to over 300 degrees F prior to the addition of the preheated asphalt oil. The oil, rock and sand are mixed into the final product: asphalt concrete (AC) and is conveyed to an overhead storage silo where it can be dumped into trucks, weighed on a scale and sent to the jobsite for paving.

On occasion as needed, a portable crusher/screen plant will be utilized on-site to crush/screen excavated material and to recycle road materials removed from road and drainage crossings. Recycled road materials removed from existing roads are a prime element to the repaving process conducted for all state roads. It reduces the amount of “new” material mined and reduces the need to dispose of the old material. Excavated material (raw or processed), road demolition material, recycled material, and soils may be stockpiled onsite for use as needed. When a plant is used onsite, these plants will be powered by diesel generators. All equipment, process plants and diesel generators will be permitted through the Mojave Desert Air Quality Management District (MDAQMD) as required.

1.4 PRODUCTION WATER

Water will be utilized to minimize fugitive dust generation from operations and on the crushing and screening plant. A water truck will be used for wetting-down and spraying material and roads during mining activities. Approximately 4,000 gallons of water a day may be used for

these fugitive dust suppression activities. Another estimated 4,000 gallons/day would be used for the process plant water sprays depending on volume and conditions. This totals less than 8 acre-foot per year. A 10,000-gallon portable water tank or similar will be set up on-site.

The 4,000-gallon water truck (typical) will fill at the Caltrans Essex Maintenance Station about seven miles southwest or other local sources in Essex twice per day as needed. It is not anticipated that there will be any excess water from the dust control procedures; therefore, no recycling is required or planned.

1.5 EROSION AND SEDIMENTATION CONTROL

The operator is required to comply with Statewide National Pollutant Discharge Elimination System (NPDES) and prepare and implement a SWPPP including applicable BMPs. The control of drainage, erosion, and sedimentation of the mine site will be contained in the enclosed pit conveyed and by implementing the following primary BMPs as applicable:

- Limiting surface disturbance to the minimum area required for active operations;
- Monitoring erosion on slopes and implementation of one or more soil stabilization practices as applicable for the site such as: earthen berms or dikes to re-direct flow to its natural flow; silt fence; fiber rolls; straw bales; gravel bags; sediment basin(s); and straw mulch.
- Stabilizing disturbed areas through grading slopes to 3H:1V; and
- Final revegetation of slopes by covering disturbed areas with topsoil and overburden and seeding with native species.

The final slopes will gently slope at 3H:1V into the closed pit floor. Any flow from minor drainages will be allowed to enter the pit. Mainly only direct precipitation will affect the pit and will be collected within the pit and allowed to evaporate or percolate. The gentle slopes are designed to reduce possible slope erosion and runoff channeling down the slopes. There will be no run-off away from the pit.

During mining and the final design of the 3H:1V slope contouring, some erosion may occur during heavy rainfall on the slopes. Erosion sediment caused by rainfall will be retained at the bottom of the pit and rills or channels in the slopes backfilled. After each major storm event or at least annually, any final slopes will be visually inspected to determine if any substantial erosion is evident such as sheet, rill or gully erosion. A major storm event is defined as precipitation totals of 0.5 inches per 24-hour period. Any rills or gullies in excess of 8 square inches in cross sectional area and are more than 10 linear feet located on final slopes shall be arrested using methods listed above. Revegetation will be used for the long-term control of erosion on the slopes. Access points and mined surfaces will be water sprayed as necessary to reduce wind erosion during operations.

1.6 BLASTING

There will be no blasting on-site, therefore, no explosives will be used or stored on site.

2.0 RECLAMATION PLAN

2.1 LAND USE

The Essex Sand and Gravel Mine site is located on Yeager Skanska Inc. owned private lands on the southeast side of U.S. Highway 66 (Route 66 and/or NTH); 6.5 miles southwest of the intersection with I-40. The site is approximately 6 miles northeast of Essex, 33 miles west of Needles, and over 100 miles east of Barstow in the far eastern Mojave Desert within San Bernardino County.

The planned mine site consists of approximately 50 acres within an approximate 90-acre plan boundary within portions of APN 0655-181-16 which consists of 536.6 acres owned by Yeager Skanska Inc. on the southeast side of the NTH. A mine reclamation plan (94M-01) was approved by the County in 1994. The site was used for Caltrans and other road improvements intermittently from 1994 through about 2005. The 1994 Plan operations permit expired in 2014, and the 1994 Reclamation Plan expired in 2019. Approximately 50 acres (32 acres within the wash were mined and 18 acres used for operations) were disturbed. Since around 2005, the site has been generally inactive with an "idle" status and the 32 acres within the wash have naturally revegetated and will not be further disturbed. Future mining will take place to the east of the wash.

The 2024 Plan will consist of 50 acres within the desert tortoise exclusion fencing established in 1994 of which about 25 acres are disturbed. The remainder of the 537-acre parcel is vacant, desert land and will not be impacted. Natural vegetation or re-growth on-site consists of primarily creosote sage scrub bush with smoke trees in the wash area.

The NTH borders the site on the northwest. Besides the NTH, the adjacent properties to the north, east, and south are vacant, undisturbed desert lands. Most of the areas to the northwest are also vacant desert lands except for past mining operations northwest of the NTH.

The mine site is generally level rising approximately 100 feet from the northwest to the southeast with elevations ranging from 2,275 to 2,375 feet amsl. The Countywide Plan land use category is open space (OS), and the site is zoned as Resource Conservation (RC). Mining is an allowable use with approval of a conditional use permit and a reclamation plan. The surrounding land uses are as follows:

North	NTH, past mining operations by others, and vacant desert land.
South	Vacant desert land.
East	Vacant desert land.
West	Vacant desert land.

2.2 VISIBILITY

The mine site is located adjacent to and southeast of the NTH about seven miles northeast of Essex. Access to the site will be from the NTH. The mine site had been partially disturbed by past mining in the 1990s and 2000s for primarily the maintenance of the NTH. Mining will be

conducted in a shallow pit generally below grade and out of sight. The processing and asphalt batch plant will be visible during operations but will be on-site only temporality during construction projects. No permanent process plants will be located on-site.

2.3 VEGETATION

For a complete description of the onsite vegetation, refer to the *General Biological Resource Assessment* prepared by Jennings Environmental included in Appendix 1 of this Plan.

The Project site vegetation is dominated by shrubs and seasonal herbaceous understory creosote bush-brittlebush scrub (*Larrea tridentate-Encelia farinosa* shrubland alliance) on approximately 72 acres. The Project site includes approximately 18.7 disturbed acres impacted by previous mining activities occupying mostly flat to gently sloped terrain on the northwest portion of the site. The wash area on the west which was partially mined in the past (1994 – 2004), consists of approximately 31.4 acres of desert-willow – smoke tree wash woodland outside of the Proposed Project Area, a sensitive plant community. No desert-willow (*Chilopsis linearis*) or smoketree (*Psorothamnus spinosus)* were found within the 2024 Plan area.

No future mining will be conducted in the wash area to avoid biological impacts to the sensitive desert-willow – smoke tree wash woodland and streambed regulations. Recent County inspections have stated that *"the wash area crossing the central portion of the site appears to be reclaimed and supports a vibrant riparian community of maturing smoke trees. The operator is advised to continue protecting areas with maturing vegetation*." The recent biological survey findings concur with this assessment as no "disturbed" areas were listed in the wash area. The southeastern portion of the wash planned for mining was never disturbed and as such this area is being removed from the 2024 Plan boundary. Other minor areas observed as disturbed by County inspections will be incorporated into the 2024 Plan.

The Proposed Project Area contains silver cholla (*Cylindropuntia echinocarpa)*, pencil cholla (*Cylindropuntia ramosissima)*, Engleman's hedgehog (*Echinocereus engelmannii)*, barrel cactus (*Ferocactus cylindraceus)*, spiny fishhook cactus (*Mammillaria tetrancistra)*, beavertail (*Opuntia basilaris)*, and Mojave yucca (*Yucca schidigera)*. There are no western Joshua trees (*Yucca brevifolia)* (CDFW candidate species) located on the site as it is outside the range of this species. No State and/or federally listed threatened or endangered species were observed on site during the field surveys.

San Bernardino County Development Code, Section 88.01.060 Desert Native Plant Protection, provides regulations for the removal of specified desert native plant species in order to preserve and protect the plants and to provide conservation and wise use of desert resources. The desert native plants listed above occur within the Project Site. Prior to development of undisturbed areas, plant surveys will be conducted to mark specific plants and cacti for seed and specific plants for cuttings and/or salvaging. The disturbed habitat has very little vegetation, and the resumption of Project activities will not impact vegetation in this portion of the site.

2.4 WILDLIFE

For a complete description of the onsite wildlife, refer to the *General Biological Resource Assessment* prepared by Jennings Environmental included in Appendix 1 of this Plan.

Desert Tortoise (Gopherus agassizii)

The result of the small project desert tortoise survey was that no desert tortoise individuals were detected within the survey area. A desert tortoise carcass was found outside of the Proposed Project Area within the wash and may have been deposited by water flow. The carcass is considered disarticulated due to missing the spine and scutes at the front of the carapace, and it is therefore categorized as Class 5. One inactive burrow complex and one burrow complex currently occupied by desert kit fox (Vulpes macrotis arsipus) were documented in the Proposed Project Area. Three unoccupied burrows were located to the northeast of the Proposed Project Area: two class 4 burrows and one class 5 burrow.

Based on the current survey and the existing desert tortoise exclusion fencing, desert tortoise are currently considered absent from the Project site. However, as there is suitable creosote bush scrub habitat on site in the vicinity of the Project area, desert tortoise movement or occupation could potentially occur in the future. Nine desert tortoise protection conditions including fencing were required in the 1994 approval through consultation with the USFWS and the CDFW. Therefore, the following updated precautionary measures are recommended to avoid potentially injuring or killing any desert tortoise that may wander on site during operations:

- *Desert tortoise exclusion fence shall be installed around the perimeter of the west side of the proposed active mine areas and the existing fencing on the north and east shall be repaired as needed with required biological monitoring during fence construction;*
- *The desert tortoise exclusion fencing shall be monitored for damage or needed repair after storm flows observed and at least quarterly;*
- *A qualified biologist shall provide an Environmental Awareness Education Presentation to workers for desert tortoise, nesting birds, burrowing owl, and kit fox;*
- *Vehicle speeds shall not exceed 15 miles per hour on access roads enforced by speed limit signs and employee training program;*
- *No cross-country travel with motorized vehicles outside of the project area or access roads by project personnel shall be permitted;*
- *Workers shall inspect for desert tortoise under vehicles prior to moving them;*
- *No firearms, dogs or other pets shall be allowed within the project area; and*
- *All trash and food items shall be promptly contained within closed, common raven-proofed containers and will be removed bi-monthly from the project site to reduce the attractiveness of the area to common ravens.*

- *Desert tortoise are protected by applicable State and/or federal laws, including but not exclusive to the California Endangered Species Act (CESA) and federal Endangered Species Act (ESA). As such, if desert tortoise are found onsite during work activities, all activities likely to affect the animal(s) should cease immediately and coordination will need to occur with the USFWS and CDFW to determine if avoidance and minimization measures can be implemented to avoid any direct or indirect impacts to desert tortoise, or if "Take" permits will need to be prepared and approved by the USFWS and CDFW.*

Burrowing Owl (Athene cunicularia)

Burrowing owl (BUOW) is not listed under the State or federal ESA but is considered both a State and federal species of special concern (SSC). The BUOW is a migratory bird protected under the Migratory Bird Treaty Act (MBTA) and by State law under the California Fish and Game Code.

No evidence of BUOW was observed on-site. Therefore, BUOW are currently considered absent from the Project site. However, as there is suitable habitat on-site, future BUOW occupation could potentially occur. The following precautionary measure is recommended to avoid potential impacts to BUOW prior to new disturbance:

- *A pre-construction survey shall be conducted within 30 days prior to new ground disturbance to verify the continued absence of BUOW species in the area of operations. If burrowing owl or an occupied burrow is observed on-site during the survey, avoidance of occupied burrows during the nesting season (February 1 through August 31) with a 600 - foot setback is required by CDFW.*

Nesting Birds

The federal MBTA provides protection for nesting birds that are both residents and migrants whether or not they are considered sensitive by resource agencies. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The USFWS, in coordination with the CDFW administers the MBTA. CDFW's authoritative nexus to MBTA is provided in FGC Sections 3503.5 which protects all birds of prey and their nests and FGC Section 3800 which protects all non-game birds that occur naturally in the State.

Vegetation suitable for nesting birds does exist within and adjacent to the Project area. Most birds are protected by the MBTA. In general, impacts to all bird species (common and special status) can be avoided by conducting land clearing work on undisturbed areas outside of the nesting season, which is generally February 1 to September 15, and by conducting a worker environmental awareness training. However, if initial clearing work on undisturbed lands cannot be conducted outside of nesting season, a pre-construction nesting bird survey shall be conducted as detailed below.

- *Preconstruction Nesting Bird Surveys are recommended to be conducted within three (3) days prior to new land disturbing activities that fall within the bird nesting season (February 1 – September 15). The nesting bird surveys would serve to identify any active nests. If no active nests are found, no further action will be required. If an active nest is found, the biologist will set appropriate no-work buffers around the nest which will be based upon the nesting species, its sensitivity to disturbance, nesting stage and expected types, intensity and duration of disturbance. The nests and buffer zones shall be field checked weekly by a qualified biological monitor. The approved no-work buffer zone shall be clearly marked in the field, within which no disturbance activity shall commence until the biologist has determined the young birds have successfully fledged and the nest is inactive.*

Desert Kit Fox and American Badger

The desert kit fox is not federally- or state-listed but is considered a species of local concern. The site has suitable habitat for this species. This species was not observed during the survey. However, some burrows of suitable size or shape were observed.

American Badger (*Taxidea taxus*) is a CDFW Species of Special Concern. The site has suitable habitat for this species. This species was not observed during the survey.

The following mitigation measure should be implemented for these two species:

- *Prior to any new ground disturbing activities, a pre-construction survey for these species should be conducted within 30 days by a qualified biologist. The surveys should be conducted during the appropriate times to observe the target species and using the most current survey protocol. Appropriate protection measures shall be implemented if observed onsite.*

2.5 RECLAMATION

The intent of the California Surface Mining and Reclamation Act of 1975 as amended (SMARA) is to "maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that: (a) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative uses; (b) the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment; and (c) residual hazards to the public health and safety are eliminated" (Section 2712).

Article 9, Section 3700 of SMARA states the following: "Reclamation of mined lands shall be implemented in conformance with standards in this Article (Reclamation Standards). The standards shall apply to each surface mining operation to the extent that:

(1) they are consistent with required mitigation identified in conformance with CEQA; and

(2) they are consistent with the planned or actual subsequent use or uses of the mining site."

The objectives of this Reclamation Plan are to:

- Eliminate or reduce environmental impacts from mining operations;
- Reclaim in a usable condition for post-mining end uses which will be open space;
- Reshape mining features and revegetate disturbed areas to minimize aesthetic and biological impacts; and
- Reclaim the site as necessary to eliminate hazards to public health and safety.

Reclamation of the mine will be undertaken when portions of the pit have been mined out and principally at the completion of mining operations. Any over-steepened slopes will be partially backfilled or recontoured to 3H:1V as needed. Fill material made up of excess stockpiled material and/or overburden pushed up onto slopes to create 3H:1V. The fill will be compacted by tracking the dozer over the slope to achieve necessary compaction consistent with final end use of revegetated open space. Any rock or gravel on the roads to be reclaimed will be removed and used as fill in the pit area. Final graded slopes and the ten-acre existing disturbance area in the northwest will be revegetated and reclaimed as open space. The re-contoured slopes, pit floor, storage areas, and processing area will be planted with salvaged plants and seeded with the recommended seed mix in this Reclamation Plan. Refer to Figure 5 for the Reclamation Plan. The access road will remain to provide access onto the site for future monitoring.

2.6 REVEGETATION

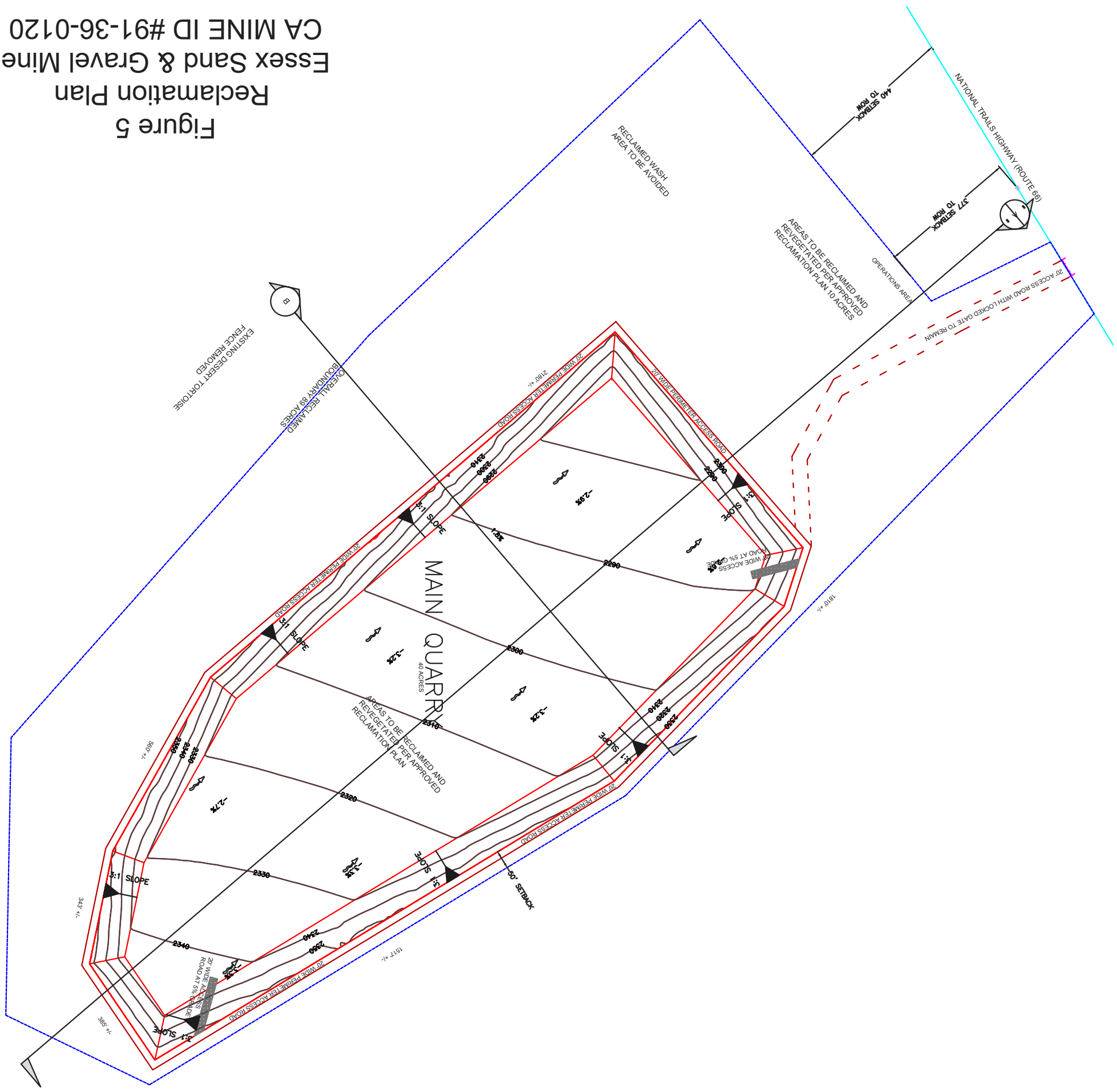
The approved 1993 Plan included a Revegetation Plan (VHBC, 1993; see Appendix 2) that includes plant and soil salvage, transplantation, erosion control , and monitoring. This 2024 Plan also includes seeding with a native seed mix based on species observed on-site to augment the transplanting plan. The revegetation plan will implement a series of activities to revegetate the site after completion of mining operations. The project site is a relatively barren environment due to past mining, lack of topsoil and the extreme hot temperatures and very dry conditions. Daytime temperatures average over 100º F. from May through September and annual rainfall is less than 5 inches.

Physical reclamation procedures will include regrading to achieve planned pit slopes of 3H:1V as needed; ripping compacted surfaces to a depth of about one-foot to hold moisture and seeds; adding available stockpiled surface material containing seeds that will be spread out evenly over the site; transplanting salvaged plants and cacti; seeding with commercially available native seeds; staking or flagging reclaimed areas to eliminate additional disturbance; and and monitoring and remediation as needed until success criteria achieved.

Baseline Data

Based on the existing Revegetation Plan, prior to new site development, the site will be surveyed to record the locations and mark all cacti and Mojave yucca, salvage those species favorable for salvage and transplanting, move said plants to a nursery area, and then transplant the salvaged

Figure 5
Reclamation Plan
Essex Sand & Gravel Mine
CA MINE ID #91-36-0120



ESSEX SAND & GRAVEL MINE RECLAMATION PLAN
CA MINE ID #91-36-0120

RECLAMATION PLAN NOTES

Mine: Essex Sand & Gravel Mine

Mineral: Construction aggregates

Mine Operator: Yeager Skanska Inc. (dba Skanska USA Civil West)
1995 Agua Mansa Road
Riverside, CA 92502
951-368-6463
John Marsh; john.marsh@skanska.com

Landowner: Yeager Skanska Inc. (dba Skanska USA Civil West)
1995 Agua Mansa Road
Riverside, CA 92502
951-368-6463

Applicant: Same as Operator

Owner of Mineral Rights: Same as Landowner

Representative Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
909-890-1818

Civil Engineer: Yeager Skanska Inc. (dba Skanska USA Civil West)
1995 Agua Mansa Road
Riverside, CA 92502
951-368-6463

Map Preparer: Yeager Skanska & Lilburn Corporation

Date of Map: February, 2024

Utilities
Water source: Caltrans Essex Maintenance Station by water truck
Sewage disposal: Portable toilets
Electricity: None
Gas: None
Telephone: Mobile phones

Countywide Plan
Project Site: Land Use Category - Open Space (OS)
Zoning - Resource Conservation (RC)

The surrounding land uses are as follows:
Onsite: Past mining under Mine Reclamation 94M-01; 25 acres considered disturbed; no planned mining in wash; vacant, desert lands.
North: National Trails Highway (NTH); mining operations north of NTH; and vacant desert land.
South: Vacant desert land
East: Vacant desert land
West: Vacant desert land

Legal Description
A.P.N.: 0655-181-01 (356.6 acres)
Section 13, T8N, R17E, San Bernardino Base and Meridian, in the County of San Bernardino, State of California.

Mine Area: Approx. 50 acres including a 40-acre shallow pit and ten acres for an operations area and access road.

Access: Existing 50-foot-wide compacted gravel road directly from NTH.

Estimated Operating Life: 50 years from County approval or June 30, 2074 (approval assumed by July 1, 2024).

Area to be Reclaimed: 50 acres to be revegetated with native desert species; 25 acres of wash area deemed reclaimed, and remainder in setbacks.

Estimated Reclamation Completion: June 30, 2076 (two years after termination of operations followed by monitoring until revegetation meets success criteria)

Reclaimed End Use: Open space.

Signage (Public Safety)
Public access to the site will be restricted with locked access gates during and after reclamation. Warning signs with contrasting background lettering will be installed at the access road. The reclaimed 3H:1V slopes will be of sufficient low gradient as not to cause a hazard to public safety if the public illegally trespasses onto the site.

Plant and Tree Protection
The operator shall implement the reclamation and revegetation requirements as described in this Reclamation Plan. In general, this includes topsoil salvage, native seed collection, salvaging and transplanting of Mojave yucca cacti, and other species protected under the California Desert Native Plant Act (CDNPA) and the San Bernardino County Code Title 8, Chapter 88.01.060 Desert Native Plant Protection, and revegetation and monitoring in compliance with this Reclamation Plan.

There are no western Joshua trees (*Yucca brevifolia*) (CDFW candidate species) located on the site as it is outside the range of this species. No State and/or federally listed threatened or endangered species were observed on site during the field surveys.

Reclamation/Revegetation Plan

Reclamation will be undertaken when portions of the pit have been mined out and at the completion of mining operations. Any over-steepened slopes will be partially backfilled or recontoured to 3H:1V as needed. Fill material made up of excess stockpiled material and/or overburden pushed up onto slopes to create 3H:1V. The fill will be compacted by tracking the dozer over the slope to achieve necessary compaction consistent with final end use of revegetated open space. Any rock or gravel on the roads to be reclaimed will be removed and used as fill in the pit area. Final graded slopes and the ten-acre existing disturbance area in the northwest will be revegetated in the late fall or early winter and reclaimed as open space. The re-contoured slopes, pit floor, storage areas, and processing area will be transplanted with salvaged plants and seeded with the recommended seed mix. The access road will remain to provide access onto the site for future monitoring.

The recommended seed mix and seeding rates are listed below. The seed mix may be modified due to availability of the seed at the time of the revegetation effort.

Recommended Seed Mix
Essex Sand & Gravel Mine

Species	Plant Type	Pure Live Seed/Acre
Creosote bush (*Larrea tridentata*)	shrub	3.0
Eaton's firecracker (*Penstemon eatonii*)	shrub	3.0
Little bear's breeches (*Acanthus arborescens*)	shrub	3.0
Creosote bush (*Larrea tridentata*)	shrub	4.0
Red fescue (*Festuca rubra*)	shrub	7.0
Bladder sage (*Salazaria mexicana*)	annual forb	0.5
Desert indigo (*Psoralea fremontii*)	annual forb	0.5
Desert mallow (*Sphaeralcea rusbyi*)	annual forb	0.4
Desert trumpet (*Eriogonum inflatum*)	perennial forb	0.5
Desert dandelion (*Malacothrix glabrata*)	annual forb	0.5
Total		16

Source: Jennings, Creasman 2020 (species essential to habitat); Hilmon & Lee Seeds (October 2020) (typical, depending on soil and available soil moisture at time of installation & management)

Revegetation efforts will be monitored annually for five years after seeding or until revegetation meets the success criteria and is self-sustaining. This schedule may be revised depending on the results of the revegetation effort and the meeting of the success criteria. Monitoring and revegetation results will be reported to the County in an annual monitoring report. Remedial activities will also be implemented, as necessary. These may include weeding and reseeding of specific areas.

SKANSKA
USA CIVIL WEST
1995 AGUA MANSA ROAD
RIVERSIDE, CA, 92509
CA MIN ID #91-36-0120

REGISTERED PROFESSIONAL ENGINEER
SCOTT N. KILGORE
No. 83555
Exp. 03/31/25
CIVIL
STATE OF CALIFORNIA

		REV	DATE	DESCRIPTION
SCALE: AS SHOWN	DRAWN BY: Kilgore, Scott	0	2/12/24	
PROJECT NO.	CHECKED BY: Carney/Kilgore	-	-	
	DATE: February 15, 2024	-	-	
		-	-	

ESSEX SAND & GRAVEL MINE
RECLAMATION PLAN
SHEET 3 OF 4

plants to the same locations after completion of mining. Additional cuttings and plants will be used to augment the number of plants with a survivor rate goal of 80%.

Site Preparation

The following procedures will be implemented prior to when an area is cleared or developed:

- Conduct plant surveys to record locations and mark sensitive and protected plants and cacti for salvaging; (note that there are no western Joshua trees onsite; outside range). The location of each cactus, yucca, and cholla (target species) within the proposed mine phase will be determined for likelihood of transplant survivability and mapped. The northern side of each target species will be marked using surveyor's tape for transplantation reference and the minimum size of the root ball of each species will be determined (18" around each species).;
- Collect seeds from target species if available;
- Salvage re-locatable plants and cacti cuttings for re-planting to a holding or nursery area; and
- Stockpile available surface material for use as a seed bed and bank in separate identified stockpiles seeded with an erosion control ground cover or covered with a larger rock material to limit wind and water erosion.

Revegetation

Upon completion of mining, all disturbed slopes will be reclaimed and revegetated within two years. Non-native species will be removed, and revegetation surfaces (slopes and pit floor) ripped to about 12 inches in depth to break up compacted areas and left in a textured or rough condition with shallow rills and furrows to aid in holding moisture and seeds. Any available soils will be deposited uniformly or in random "islands" up to one-foot thick depending on amount of salvaged soil, mixed with loosened soil, and seeded with a native seed mix.

Any rock or gravel on the roads to be reclaimed will be removed and used as fill in the pit area. The revegetation area will be broadcast seeded with a certified weed-free native seed mix and salvaged plants and cacti will be transplanted. Watering of transplanted plants will take place monthly or as determined by the biologist. No invasive, non-native plant species will be used in the revegetation plan. Only native seeds tolerant to existing soil and rainfall conditions will be used.

Seeding and planting will take place between November 1 and March 1 after the first substantial rains to take advantage of winter precipitation and eliminate the need for area-wide irrigation. Reclaimed areas will be clearly staked and flagged to eliminate additional disturbance. Broadcast seeding will be conducted by hand and therefore should not occur when there are strong winds that might carry seed away. Seeds will be hand raked or mechanically covered by a tractor with a chain attachment or sheep's foot.

The recommended seed mix and seeding rates are outlined in Table 3 (below) and may be modified if a native observed species is not available during that year of revegetation and/or if seed costs are exorbitant (if seed is to be collected, it would be conducted by a qualified biologist). All seeds will be pure live seed in lbs/acre. The seed mix is a subset of the native plants identified during surveys. Species recommended were the most encountered on the site.

Table 3
Recommended Seed Mix
Essex Sand & Gravel Mine

Species	Plant Type	Pure Live Seed Lbs/Acre
Cheesebush *(Ambrosia salsola)*	shrub	3.0
Buckwheat (*Erigonum fasciculatum)*	shrub	2.0
Brittlebush (*Encelia farinosa)*	shrub	2.0
Creosote bush *(Larrea tridentata)*	shrub	4.0
Anderson's desert thorn *(Lycium andersonii)*	shrub	2.0
Fiddleneck (*Amsinckia tessellata)*	annual herb	1.0
Desert primrose (*Chylisimia brevipes)*	annual herb	0.5
Desert calico (*Loeseliastrum matthewsii)*	annual herb	0.5
Desert trumpet (*Eriogonum inflatum)*	perennial herb	0.5
Desert dandelion **(***Malacothrix glabrata*)	annual herb	0.5
Total		16

Source: Jennings, October 2023 (species identified on-site) ; Lilburn and S&S Seeds (October 2023) (typical, depending on seed availability and updated plant transects at time of initiation of revegetation)

Test Plots

In addition, the operator shall establish four 50-square meter test plots. The test plots will be located in the southeastern portion of the site on level ground and shallow slopes; refer to Sheet 1 of the Mine Plan. The plot areas shall be representative of disturbed slope area with the following treatments: (1) ripping to depth of 1-foot with no seeding or transplanting; and (2) ripping and covering with available topsoil, seeding, and transplanting. The test plots will be maintained and monitored, and tests conducted to refine revegetation techniques, species type, and seeding rates.

Irrigation

The seed palette proposed for the mine site consists of primarily drought-tolerant plants species that should perform well without additional water. The average precipitation in the area should be sufficient for seed germination and root establishment of native species.

Planting in the fall, prior to the winter rains, will be sufficient for seed germination and root establishment and reduce weed growth that is typically associated with supplemental irrigation. Scarification of the soil and the creation of surface rills and furrows will allow for maximized

collection of water from rain events and run-off. The transplanted plant s and cacti will be watered monthly for up to a year as needed, and thereafter as determined by the biologist.

Fertilization

No fertilization of the site is recommended. The native seeds used for revegetation will be tolerant of existing soil conditions. Additionally, the mechanical loosening and creation of surface furrows will create favorable conditions for seed germination and root establishment. Widespread use of fertilizers on desert sites appears to benefit non-native weedy species and not native species.

If deemed needed by the site biologist, mycorrhizal inoculum will be utilized for the transplanted species. Mycorrhizal inoculum is a fungus that is a necessary component of a functioning ecosystem. When installed, the fungi attach themselves to plant roots and are beneficial to plant establishment and persistence against disease.

Weed Control

The purpose of the non-native invasive species control plan is to reduce the growth of non-native invasive plant species that may invade the site where revegetation is taking place. Non-native invasive species (weeds) can compete with native plant species for available moisture and nutrients and consequently interfere with revegetation of the site.

The occurrence of non-native invasive species on-site shall be annually monitored by visual inspection. The biological report observed two invasive, non-native species: foxtail chess (*Bromus madritensis)* and Mediterranean grass *(Schismus arabicus).*

The goal is to prevent non-native invasive species from becoming established and depositing seeds in revegetated areas. No areas will be allowed to have more than ten percent non-native invasive species ground cover. If inspections reveal that non-native invasive species are becoming or have become established on site, then removal will be initiated. Inspections shall be made in conjunction with revegetation monitoring.

Removal may occur regularly in the first year and may consist of using mechanized equipment, hand tools and/or herbicide spraying. Herbicides may be applied to control an aggressive and extensive weed invasion on site. Once the weed growth is under control, weeding will take on a more selective approach. Reports of inspections and weed control implementation shall be part of the annual revegetation monitoring and kept on file by the Operator.

Revegetation Monitoring

The Revegetation Monitoring Plan will be an ongoing effort to assess the results of revegetation on the disturbed areas of the site. The monitoring plan will be followed annually to monitor and assess completed revegetated areas (and test plots) and areas where revegetation is being planned or just beginning. A Revegetation Monitoring Report submitted by the operator to the County

will be part of the overall compliance with conditions. Revegetated areas will be assessed utilizing success criteria with successful methods being implemented for future revegetation.

Revegetation efforts will be monitored quarterly for the first year and annually thereafter as needed for five years after re-planting and seeding or until revegetation meets the success criteria and is self-sustaining. Revegetation observations will be summarized annually as part of the overall-monitoring program. This schedule may be revised depending on the results of the revegetation effort and the meeting of the success criteria.

The annual monitoring will include random transect sampling within the revegetation area. The number of transects and plots will vary in order to produce the 80% confidence level required under SMARA's Performance Standards for Revegetation. The following data will be collected within transects and plots:

a. Survivorship: assessed by absolute counts
b. Plant density
c. Species richness
d. Cover per specified area

All data will be recorded, and permanent photo documentation stations will also be established for representative transects to visually document annual vegetation changes and community development.

If at any time the revegetation efforts are found unsuccessful as compared to surrounding areas, the botanist will reevaluate the revegetation guidelines and recommend procedures to ensure successful plant propagation. Remedial activities may include but are not limited to additional seeding, change of seed mix, removal of invasive non-native species, and additional plant protection from human and animal impacts as deemed necessary. Monitoring of the revegetation will continue for five years after cessation of mining or until the site is deemed successfully revegetated by the County. These results will be reported to the County of San Bernardino annually.

Success Criteria

The site consists of creosote bush-brittlebush scrub (*Larrea tridentate - Encelia farinosa* shrubland alliance) with typical minimal desert vegetation. Success criteria will be based on the overall quality of the revegetation results compared to the recorded baseline vegetation data. Following completion of the revegetation, the surviving perennial plant species shall be evaluated annually by the consulting botanist for relative growth as determined by cover, diversity and density. Individual specimens or areas shall receive appropriate remedial attention as necessary. Remedial actions may include removing invasive weed species or reseeding. The above procedure will be repeated annually for a total of five years or until success criteria are achieved. Successful revegetation for transplanted species is listed at 80% per the existing revegetation plan (see Table 4).

Table 4
Essex Sand & Gravel Mine
Recommended Revegetation Success Criteria

Mixed Desert Scrub	Baseline Mean (typical for area)	Success Criteria (80%)
Shrub Cover (%)	5% (per 100 sq. m)	4% cover of native perennials
Shrub Density (stems/100 m^2)	20 (per 100 sq. m)	16 native perennials/100 sq. meters
Species Diversity (species/100 m^2)	5 (per 100 sq. m)	4 native perennials/100 sq. meters

Source: General Biological Assessment, Jennings 2023; Lilburn Corp. 2023. (Note that site specific plant transects will be conducted prior to initiation of revegetation.)

2.7 CLEANUP

At the completion of mining activities, all mining plants and equipment will be removed from the project site. All debris will be removed and disposed of at a permitted facility. All mine and desert tortoise exclusion fencing and gates will be removed to return the site to open space.

2.8 POST RECLAMATION AND FUTURE MINING

The reclaimed site will not preclude any future mining activities with depth or surface area modification. Upon completion of mining activities, the site will consist of a 40-acre shallow pit to be reclaimed and revegetated as open space.

2.9 SLOPE AND SLOPE TREATMENT

Stabilization of the mine slopes will be accomplished concurrent with final sloping of a completed slope during the final excavations and may include some backfilling of slopes if over-steepened. Slope stabilization will improve the aesthetics of the site; reduce slope erosion; eliminate slope sliding; and eliminate hazards such as un-safe drop-offs.

Final slopes will be reclaimed at 3H:1V so backfilling will be minimized. The shallow slopes will be easily negotiated by wildlife, safe for inevitable use by illegal off-road vehicles. and serve as a good foundation for plant growth. If some minor fill is required to create final 3H:1V slopes, the fill will be compacted by tracking the dozer over the slope to achieve appropriate compaction consistent with the final end use of open space. Overly compacted final-graded slopes and/or the pit floor may require being loosened by mechanical means to aid the reseeding effort.

Preserved topsoil (as described in Section 2.11 Soils) will be placed over the prepared compacted/loosened surface, with final treatment and subsequent revegetation to follow pursuant to Section 2.6 Revegetation. Revegetation activities will generally commence in late fall and winter to correspond with the rainy season of the area.

2.10 PONDS, WASTES

No ponds are proposed, and waste materials will be handled per Section 1.3 above. There will be no chemical waste or pollution remaining after the completion of reclamation.

2.11 SOILS

No soil surveys are available in this remote area. Soils on site are solely comprised of alluvium sands and gravels. For undisturbed areas (approximately 25 acres), topsoil or at minimum the top 6-12 inches of surface soils and material, will be graded into stockpiles to preserve as much of the organic material and seeds as practicable. Locations for temporary and more long-term surface material stockpiles are identified on Sheet 1 of the Mine Plan. Approximately 40,000 cubic yards may be salvaged and stored on two acres of stockpiles at 6-foot high. Some surface material may be directly utilized for areas ready for final reclamation.

2.12 DRAINAGE AND EROSION CONTROLS

Post-reclamation drainage on-site will be contained by the resulting shallow basin. Only minor sheet flow may drain into the pit. No defined drainages will be intersected by the project site. Refer to Section 1.5 for a description of drainage and erosion controls that will be maintained after termination of mining.

2.13 PUBLIC SAFETY

During operations, public access to the site will be restricted by the site perimeter fence and locked access gates. Warning signs with contrasting background lettering will be installed every 500 feet along the approved surface mine boundary fencing shall be installed and shall read “No Trespassing - Keep Out; Surface Mining Operation” or similar during mining. Signs will be approximately 1-foot high and 2 feet wide.

Upon completion of all mining operations, all equipment, debris, and fencing will be removed from the site. Any remaining stockpiles will be graded uniformly into the surface. The reclaimed 3H:1V slopes will be of sufficient low gradient as not to cause a hazard to public safety if the public illegally trespasses onto the site.

There are no wells, portals, shafts, tunnels, or openings located on-site requiring closure.

2.14 MONITORING AND MAINTENANCE

The County, as lead agency to implement SMARA, requires annual reporting of Mining and Reclamation activities. The reports are filed with the State Division of Mine Reclamation and the County.

Monitoring and maintenance of reclamation is an ongoing responsibility of the operator and landowner. Monitoring will include both site monitoring to assess and control trash dumping and other forms of human disturbances, as well as biological monitoring of revegetation progress.

Site monitoring of human use (access, trash dumping and off-road vehicle use) includes monthly inspection to check access control and signs and to schedule removal of illegal dumping. Biological monitoring will be conducted to evaluate overall conditions of the revegetated site with respect to native plant conditions, weed growth and control effectiveness as detailed in Section 2.6 above.

The operator will also conduct the following among others:

a. Storm Water Pollution Prevention per the NPDES plan and SWPPP required by State and Federal rules. Erosion control will be reviewed and addressed within the SWPPP.
b. Implementation and effectiveness of dust control measures;
c. Maintenance and managing idling for trucking operations; and
d. Inspection of gates, fencing and signs.

2.15 RECLAMATION ASSURANCE

In addition to the monitoring through inspections and reporting, the operator is required to assure reclamation of the site in accordance with the approved Mine Reclamation Plan in compliance with Section 2773.1 of SMARA. The operator shall continue to post reclamation assurance mechanisms in an amount sufficient to pay for the cost of reclamation as outlined in Section 2. The financial assurances must be approved by and payable to the County and the California Department of Conservation.

Based on the 1994 Plan and approval, Skanska has maintained the site in a safe condition, submitted annual mining reports to the County and the State DMR, provided updated financial assurances cost estimates (FACEs) and financial assurance mechanisms (FAMs). Currently the reclamation bond for the site totals $159,899. The FACE will be updated annually 30 days after the County's inspection of the site.

3.0 GEOLOGY

The Essex Sand and Gravel Mine site is located approximately 6 miles northeast of Essex, 33 miles west of Needles, and over 100 miles east of Barstow in the far eastern Mojave Desert within San Bernardino County. The eastern Mojave Desert is characterized by an interior region of isolated mountain ranges separated by expanses of desert plains. In general, the area has an interior enclosed drainages and many playas. Two important fault trends control topography in the Mojave province, one being a prominent northwest/southeast trend and the other a secondary east-west trend. The Study Area is generally underlain by recent age alluvium and terrace deposits made up of weathered rock and sand; unconsolidated and semi-consolidated.

The Study Area, as is most of Southern California, is located in a seismically active area. According to the California Geologic Survey, Fault Activity Map, 2010, the nearest active fault is the South Bristol Mountain Fault located approximately 35 miles west of the site. The site is not located within a Geologic Hazards Zone (Policy Map HZ-1 Earthquake Fault Zones; Countywide Policy Plan, 2019).

4.0 HYDROLOGY

The following information is from *California Groundwater Basin Bulletin 118, https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/7_002_FennerValley.pdf. (last update 2/27/2004)*

The project site is located within the Fenner Valley Groundwater Basin.
• Groundwater Basin Number: 7-2
• County: San Bernardino
• Surface Area: 454,000 acres (709 square miles)

This basin underlies Fenner and Clipper Valleys in eastern San Bernardino County. The basin is bounded by nonwater-bearing rocks of the Marble and Providence Mountains on the west, of the Providence and New York Mountains on the north, of the Piute and Old Woman Mountains on the east, and of the Ship and Old Woman Mountains on the south. Surface water drains south and southwest toward Schuyler Wash, which follows the axis of the valley, and exits the valley through Fenner Gap and beneath Bristol and Cadiz Lakes. Average annual precipitation ranges from 7 to 10 inches in the basin; Barstow averages 4 inches annually.

In this part of the Mojave Desert, both an upper and a lower alluvial aquifer have been identified. The upper aquifer consists of Quaternary age sands and gravels that reach 600 feet thick (DWR 1967; MWD 1999; 2000). The lower aquifer consists of middle to late Tertiary age alluvial deposits that contain a higher proportion of fine material and are generally less permeable than those the upper aquifer (MWD 2000). The thickness of the lower alluvial aquifer may reach 1,800 feet near the town of Danby (MWD 2000). These aquifers are separated in places by discontinuous layers of silt and clay; however, both aquifers are presumably unconfined (MWD 1999).

Recharge is dominantly from percolation of surface runoff through stream beds and washes. Because of limited pumping, groundwater levels in the basin have remained fairly stable (MWD 1999). The total storage capacity is estimated at 5,600,000 acre-feet (af) (DWR 1975). Natural recharge is estimated to be about 3,000 af/yr. with only minor extractions reported in this area.

The site lies within an alluvial fan with a broad (approximately 400 to 675 feet in width) dry wash with surface flows from the southeast to the northwest. There are no perennial (year-round) streams on-site. Wash was partially mined in the 1990s with 1600 permitting and has since naturally revegetated. The 2024 Plan will avoid this wash to eliminate any future impacts to the hydrological and biological resources of the wash. This drainage will be avoided by mining operations with a 50-foot setback on the east side of the wash defined by a planned desert tortoise protection fence. No active major drainages will be impacted by the proposed excavation area. The jurisdictional delineation (Jennings 2023) estimated that approximately 4,266 feet or 38.6 acres of waters of the state occur within the wash which will be avoided. These are no waters of the U.S. or wetlands on-site.

Groundwater

Groundwater is anticipated to flow northwest generally mimicking surface topography. According to the State Water Board "Groundwater Ambient Assessment Program" (GAMA), groundwater is recorded at a depth greater than 350 feet below ground surface (bgs).

Water use on-site will be utilized to minimize dust generation. A water truck will be used for wetting-down material and roads during mining activities and for wetting-down haul trucks prior to site departure. The processing plants will also utilize water sprays to limit dust production per MDAQMD permit requirements. Approximately 8,000 gallons of water a day or about 8 af/year may be used for dust suppression activities. The 4,000-gallon water truck (typical) will fill at the Caltrans Essex Maintenance Station about seven miles southwest or other local sources in Essex twice per day as needed.

REFERENCES

California Department of Conservation, Division of Mine Reclamation. *Surface Mining and Reclamation Act of 1975* (SMARA, Public Resources Code, Sections 2710-2796). January 2023.

California Dept. of Water Resources. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/7_002_FennerValley.pdf.

County of San Bernardino, Countywide Policy Plan. Approved October 27, 2020, Adopted November 27, 2020. http://countywideplan.com/wp-content/uploads/2020/08/CWP_PolicyPlan_PubHrngDraft_HardCopy_2020_July.pdf

County of San Bernardino 2007 Development Code, 2022 S-31 Supplement contains: Local Legislation current through Ord. 4445, passed August 23, 2022. Chapter 88.03 Surface Mining and Land Reclamation.

Jennings Environmental, LLC. *Biological Resources Assessment and Jurisdictional Delineation – Essex Mine Project,* October 2023.

Western Regional Climate Center, wrcc@dri.edu ; Barstow Daggett AP climate data. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2257.

ACRONYMS

af	acre-feet
amsl	above mean sea level
APN	assessor's parcel number
BLM	Bureau of Land Management
BMP	Best Management Practices
Cal-OSHA	California Occupational Safety and Health Administration
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNPS	California Native Plant Society
COA	Condition of Approval
CUPA	Certified Unified Program Agency (Hazardous Materials Division of the San Bernardino County Fire Department is designated as the "CUPA.")
CY, cy	Cubic yards
DEHS	Department of Environmental Health Services (County)
DMR	Division of Mine Reclamation
DOC	Department of Conservation
DWR	Department of Water Resources
FESA	Federal Endangered Species Act
H:V	horizontal to vertical; typically, in feet (slope inclination)

MBTA	Migratory Bird Treaty Act (protects nesting birds)
MSHA	Mining Safety and Health Administration
MDAQMD	Mojave Desert Air Quality Management District
NCSS	National Cooperative Soil Survey
NPDES	National Pollutant Discharge Elimination System
NTH	National Trails Highway (US Route 66)
OS	Open Space (Countywide Plan land use category
RC	Resource Conservation (County zoning)
RWQCB	Regional Water Quality Control Board
SCS	Soil Conservation Service
SMARA	Surface Mining and Reclamation Act of 1975
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Storm Water Pollution Prevention Plan
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

CROSS REFERENCE MATRIX

Essex Sand & Gravel Mine
Mine Reclamation Plan
CA MINE ID #91-36-0120
Surface Mining and Reclamation Act of 1975 (SMARA) &
California Code of Regulations (CCR Title 14)

Prepared by Lilburn Corporation – August 2024

Including reference to:
ARTICLE 1. GENERAL PROVISIONS. SECTION 2710 et seq.
ARTICLE 2. DEFINITIONS. SECTION 2725 et seq.
ARTICLE 3. DISTRICT COMMITTEES. SECTION 2740 – 2741
ARTICLE 4. STATE POLICY FOR THE RECLAMATION OF MINED LANDS. SECTION 2755 et seq.
ARTICLE 5. RECLAMATION PLANS AND THE CONDUCT OF SURFACE MINING OPERATIONS. SECTION 2770 et seq., as amended
CCR TITLE 14 (REGISTER 85, No. 18-5-4-83)
CHAPTER 8. MINING AND GEOLOGY
SUBCHAPTER 1. STATE MINING AND GEOLOGY BOARD
ARTICLE 1. SURFACE MINING AND RECLAMATION PRACTIVE. SECTION 3500 et seq.
ARTICLE 9. RECLAMATION STANDARDS. SECTION 3700 et seq.

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
SMARA 2770.5	100-year flood, Caltrans contact	X		
SMARA 2772 (c) (1)	Name and Address of operator/agent.		3	1.0
SMARA 2772 (c) (2)	Quantity & type of minerals to be mined.		2-3, 6	1.0, 1.1
SMARA 2772 (c) (3)	Initiation and termination date.		3, 6	1.0
SMARA 2772 (c) (4)	Maximum anticipated depth of mining.		1, 6	1.0 – 1.1
SMARA 2772 (c) (5)	Description, including map with boundaries, topographic details, geology, streams, roads, utilities.		1-10	1.0 - 1.5
SMARA 2772 (c) (6)	Mining plan and time schedule for reclamation (concurrent or phased reclamation).		2-11, 18-19	1.0, 1.1, 2.5
SMARA 2772 (c) (7)	Proposed subsequent use.		25	2.8
SMARA 2772 (c) (8)	Description of reclamation measures adequate for		18-25	2.5 - 2.7

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
	proposed end use.			
SMARA 2772 (c) (8) (a)	Description of containment control and mine waste disposal.		11-12	1.2
SMARA 2772 (c) (8) (b)	Rehabilitation of stream banks/beds to minimize erosion	X	Completed per County inspection	
SMARA 2772 (c) (9)	Impact of reclamation on future mining.		25	2.8
SMARA 2772 (c) (10)	Applicant statement accepting responsibility for reclamation per the reclamation plan.		Attached to application	
SMARA 2773 (a)	Water quality monitoring plan specific to property.		13, 26 SWPPP to be updated upon approval	1.5, 2.12
SMARA 2773 (a)	Sediment and erosion control monitoring plan specific to property.		13, 26 SWPPP to be prepared upon approval	1.5, 2.12
SMARA 2773 (a)	Revegetation plan specific to property. Monitoring Plan.		19-25	2.6
SMARA 2773.1	Performance (financial) assurances.		on file with County in amount of $159,215	2.15
SMARA 2777	Amended reclamation plans required prior to substantial deviations to approved plans.	X	INFORMATIONAL	
CCR 3502 (b) (1)	Environmental setting and impact of reclamation on surrounding land uses. (Identify sensitive species, wildlife habitat, sensitive natural communities, e.g., wetlands, riparian zones, etc.).		14-18	2.1 – 2.5
CCR 3502 (b) (2)	Public health and safety (exposure).		26	2.13
CCR 3502 (b) (3)	Slopes: critical gradient, consider physical properties and landscaping.		2-11, 25	1.1, 2.9

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3502 (b) (4)	Fill materials in conformance with current engineering practice.	X	---	
CCR 3502 (b) (5)	Disposition of old equipment		25	2.7
CCR 3502 (b) (6)	Temporary stream and water diversions shown.	X	---	
CCR 3503 (a) (1)	Removal of vegetation and overburden preceding mining kept to a minimum.		18-25	2.5, 2.6
CCR 3503 (a) (2)	Overburden stockpiles managed to minimize water and wind erosion.	X	---	
CCR 3503 (a) (3)	Erosion control facilities (dikes, ditches, etc.) as necessary.		13, 26	1.5, 2.12
CCR 3503 (b) (1)	Settling ponds (sedimentation and water quality).	X	---	---
CCR 3503 (b) (2)	Prevent siltation of groundwater recharge areas.	X	---	---
CCR 3503 (c)	Protection of fish and wildlife habitat (all reasonable measures).		15-18	2.3, 2.4
CCR 3503 (d)	Disposal of mine waste and overburden (stable-no natural drainage restrictions without suitable provisions for diversion).	X	---	
CCR 3503 (e)	Erosion and drainage (grading to drain to natural courses or interior basins).		13, 26	1.5, 2.12
CCR 3503 (f)	Resoiling (fine material on top plus mulches).		19-26	2.6, 2.11
CCR 3503 (g)	Revegetation and plant survival (use available research).		19-25	2.6
CCR 3703 (a)	Sensitive species conserved or mitigated		15-18	2.3
CCR 3703 (b)	Wildlife habitat at least as good as pre-project, if approved end use is habitat.		19-25	2.6

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3703 (c)	Wetlands avoided or mitigated at 1:1 minimum	X		
CCR 3704 (a)	For urban use, fill compacted in accordance with UBC or local grading ordinance.	X		
CCR 3704 (b)	For resource conservation, compare to standard for that end use	X		
CCR 3704 (c)	Mine waste stockpiled to facilitate phased reclamation and separate from growth media.	X		
CCR 3704 (d)	Final reclamation fill slopes do not exceed 2:1, except when engineering and revegetation analysis allow.	X		
CCR 3704 (e)	Final landforms or fills conform with surrounding topography or end use.		18-19, 26	2.5, 2.9
CCR 3704 (f)	Cut slopes have minimum factor of safety for end use and conform with surrounding topography.		18-19, 26	2.5, 2.9
CCR 3704 (g)	Piles or dumps not placed in wetlands without mitigation.	X		
CCR 3705 (a)	Vegetative cover, suitable to end use, self-sustaining. Baseline studies documenting cover, density and species richness.		19-25	2.6
CCR 3705 (b)	Test plots if success has not been proven previously		19-25	2.6
CCR 3705 (c)	Decompaction of site.		18-25	2.5, 2.6
CCR 3705 (d)	Roads stripped of road base materials, resoiled and revegetated, unless exempted.		18-25	2.5, 2.6
CCR 3705 (e)	Soil altered or other than native topsoil, required soil analysis. Amend if necessary.	X		

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3705 (f)	Temporary access not bladed. Barriers installed.	X		
CCR 3705 (g)	Use native plant species, unless exotic species meet end use.		19-25	2.6
CCR 3705 (h)	Plant during correct season.		19-25	2.6
CCR 3705 (i)	Erosion control and irrigation, when necessary.		13, 26	1.5, 2.12
CCR 3705 (j)	If irrigated, demonstrate self-sustaining without for two-year minimum.	X		
CCR 3705 (k)	Weeds managed.		23	2.6
CCR 3705 (l)	Plant protection measures, fencing, caging.		18-25	2.6
CCR 3705 (m)	Success quantified by cover, density and species-richness. Standards proposed in plan. Sample method set forth in plan and sample size provides 80 percent confidence level, as minimum.		18-25	2.6
CCR 3706 (a)	Mining and reclamation to protect downstream beneficial uses.	X	No additional mining planned for wash area	
CCR 3706 (b)	Water quality, recharge, and groundwater storage shall not be diminished, except as allowed by plan.	X		
CCR 3706 (c)	Erosion and sedimentation controlled during all phases as per RWQCB/SWRCB.		13, 26	1.5, 2.12
CCR 3706 (d)	Surface runoff and drainage controlled, and methods designed for not less than 20 year/1 hour intensity storm event.		13, 26	1.5, 2.12
CCR 3706 (e)	Altered drainages shall not cause increased erosion or sedimentation.	X	---	

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3706 (f)	Stream diversions constructed in accordance with DFG 1603, EPA 404, Sec. 10 Rivers and Harbors.	X	No impact to jurisdictional waters	
CCR 3706 (g)	All temporary diversions eventually removed.	X	---	
CCR 3707 (a)	Return prime ag to prime ag, unless exempted.	X	---	
CCR 3707 (b)	Segregate and replace topsoil by horizon.	X	---	
CCR 3707 (c)	Productivity rates equal pre-project or similar site for two consecutive years. Rates set forth in plan.	X	---	
CCR 3707 (d)	Fertilizers and amendments do not contaminate water.	X	---	
CCR 3708	Other ag capable of sustaining crops of area.	X	---	
CCR 3709 (a)	Equipment stored in designated area and waste disposed of according to ordinance.		11-12	1.2
CCR 3709 (b)	Structures and equipment dismantled and removed.		25	2.7
CCR 3710 (a)	Surface and groundwater protected.		13, 26	1.5, 2.12
CCR 3710 (a)	Surface and groundwater projected in accordance with Porter Cologne and Clean Water Acts (RWQCB/SWRCB).		13, 26	1.5, 2.12
CCR 3710 (b)	In-stream in accordance with CFG 1600, EPA 404, and Sec. 10 Rivers and Harbors.	X	No impact to jurisdictional waters	
CCR 3710 (c)	In-stream channel elevations and bank erosion evaluated annually using extraction quantities, cross-sections, and aerial photos.	X	No in-stream mining.	

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3710 (d)	In-stream mining activities shall not cause fish to become entrapped in pools or in off-channel pits. California Fish and Game Code section 1600.	X	No in-stream mining.	
CCR 3711(a)	All salvageable topsoil removed. Topsoil and vegetation removal does not proceed mining by more than one year.		26	2.11
CCR 3711 (b)	Topsoil resources mapped prior to stripping, location of stockpiles on map. Topsoil and growth media in separate stockpiles.		26	2.11
CCR 3711 (c)	Soil salvage and phases set forth in plan, minimize disturbance, designed to achieve revegetation success.		26	2.11
CCR 3711 (d)	Topsoiling phased ASAP. Stockpiles not to be disturbed until needed. Stockpiles clearly identified and planted with vegetation or otherwise protected.		26	2.11
CCR 3711 (e)	Topsoil redistributed in stable site and consistent thickness.		18-26	2.6, 2.11
CCR 3712	Waste and tailings, and waste disposal governed by SWRCB (Article 7, Chapter 15, Title 23, CCR).		12	1.2
CCR 3713 (a)	Drill holes, water wells, monitoring wells abandoned in accordance with laws.	X	No wells onsite.	
CCR 3713 (b)	All portals, shafts, tunnels, or openings, gated or protected from public entry, but preserve access for wildlife.	X	None onsite.	

Appendix 1

BIOLOGICAL RESOURCES ASSESSMENT, JURISDICTIONAL DELINEATION, and NATIVE PLANT PROTECTION PLAN for the ESSEX SAND AND GRAVEL MINE

Jennings Environmental, LLC
October 2023

BIOLOGICAL RESOURCES ASSESSMENT, JURISDICTIONAL DELINEATION, AND NATIVE PLANT PROTECTION PLAN FOR THE ESSEX SAND AND GRAVEL MINE PROJECT, IN UNINCORPORATED SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

Lilburn Corporation
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Prepared by:

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October 2023

Table of Contents

SECTION 1.0 – INTRODUCTION

Jennings Environmental, LLC (Jennings) was retained by Lilburn Corporation (Lilburn) to conduct a literature review and reconnaissance-level survey for the proposed Essex Sand and Gravel Mine Project in the unincorporated area of Yermo, California (Project). The survey identified vegetation communities, the potential for the occurrence of special status species, or habitats that could support special status wildlife species, and recorded all plants and animals observed or detected within the Project boundary. This biological resources assessment is designed to address the potential effects of the proposed project on designated critical habitats and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or species designated as sensitive by the California Department of Fish and Wildlife (CDFW) or the California Native Plant Society (CNPS).

Information contained in this document is in accordance with accepted scientific and technical standards that are consistent with the requirements of the United States Fish and Wildlife Service (USFWS) and CDFW. Additionally, the site was surveyed for any drainage features that would meet the definition of the Waters of the US (WOUS), Waters of the State (WOS), or CDFW jurisdiction. Also, the project is located within the desert of San Bernardino County. As such, this report also contains the results of the Native Plant Protection Plan in accordance with San Bernardino County Development Code Section 88.01.060.

1.1 PROJECT LOCATION

The Project is generally located in Section 13, Township 8 North, Range 17 East, and is depicted within the *Fenner* U.S. Geological Survey's (USGS) 7.5-minute topographic map. More specifically the project is located within APN 0655-181-16, within an unincorporated area of San Bernardino County, California. The Project site is located approximately 6.43 miles southwest of the intersection of National Trails Highway and Interstate 40. The site is surrounded by vacant parcels (Figures 1 and 2 in Appendix A).

1.2 PROJECT DESCRIPTION

The quarry may supply locally sourced construction material. Project operations are likely to include the following: a borrow site for native material to repair transportation infrastructure, materials storage area, storage area for spoils, and a temporary staging area for nearby construction projects. Activities will likely include grading, excavation, and utilization of heavy construction machinery and processing plants for screening and asphalt concrete production. The Project seeks to resume rock mining within a smaller portion of the site. Prior to this report, the Project consisted of two overlapping areas of interest: the Previous Project Area from prior Project activities, and Proposed Project Area (Figure 2). The Proposed Project Area encompasses 74.14 acres.

SECTION 2.0 – METHODOLOGY

2.1 LITERATURE REVIEW

Prior to performing the field survey, existing documentation relevant to the Project site was reviewed. The most recent records of the California Natural Diversity Database (CNDDB) managed by CDFW (CDFW 2023), the USFWS Critical Habitat Mapper (USFWS 2023), and the California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2023) were reviewed for the following quadrangle containing and surrounding the Project site: *Fenner, Fenner Spring, Little Piute Mountains, and Essex*, USGS 7.5-minute quadrangles. The *Fenner Spring, Little Piute Mountains, and Essex* quads were included in this search due to the sites' proximity to their borders. These databases contain records of reported occurrences of federal- or state-listed endangered or threatened species, California Species of Concern (SSC), or otherwise special status species or habitats that may occur within or in the immediate vicinity of the Project site. These sources include:

- California Natural Diversity Database (CNDDB) managed by CDFW (CDFW 2023)
- USFWS Critical Habitat Mapper (USFWS 2023)
- California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2023), issuer of the California Rare Plant Rank (CRPR).
- U.S. Fish and Wildlife (USFWS) threatened and endangered species occurrence GIS overlay;
- USGS National Map;
- Calwater Watershed Maps
- USFWS Designated Critical Habitat Maps
- San Bernardino County Biotic Recourses Overlay
- San Bernardino County Development Code, 88.01.060 Desert Native Plant Protection

2.2 BIOLOGICAL RECONNAISSANCE-LEVEL SURVEY

Field Surveys were conducted using Jennings Environmental Sub-Consultant, Mountain View Biological Consulting (MVBC). MVBC Biologists conducted a meandering pedestrian survey of the Survey Area during daylight hours under weather conditions that did not preclude observations of special-status species (Table 1) although the survey timing was outside the floristic period for rare plants, which precluded a include CDFW Rare Plant protocol survey. The site was accessed via National Trails Highway with no overland travel. MVBC recorded all evidence of DETO that was not previously documented in the Protocol Survey, including burrows, and categorized burrows according to the Field Manual (USFWS 2009). Biologists documented dominant vegetation alliances and recorded all flora and fauna observed. All tree locations were marked with individual points or as polygon aggregations, as appropriate, and labeled according to diameter at breast height (DBH) as required by County of San Bernardino General Biological Survey Report Protocol. Data were recorded with ESRI Fieldmaps and Survey123, and images were obtained using Solocator. Photographs of the Project site were taken to document existing conditions (Appendix B).

In addition to conducting the General Biological Assessmennt, MVBC also conducted protocol level desert tortoise surveys.

Desert tortoise (Gopherus agassizii) Protocol Surveys

The Project site is located within a region that does contain habitat suitable for the listed species, desert tortoise. Additionally, the site is located within designated critical habitat. As such, protocol surveys were conducted in accordance with the 2018 USFWS Desert Tortoise Survey Protocol as described below.

Small Project Surveys

Smaller project sites are expected to be used by too few tortoises to allow for accurate estimation of take. Operationally, the USFWS considers sites in Upper Virgin River Recovery Unit that are < 67 ha (165 acres) or in the rest of the desert tortoise range < 200 ha (500 acres) to be "small." The action areas of small projects are less likely to include the entire home ranges of desert tortoises; therefore, desert tortoises that regularly use the area may be off site during surveys.

The USFWS protocol described for quantitative surveys should be followed, but can be completed at any time of year. The quantitative survey protocol is described below.

- Use 10-meter-wide belt transects to cover the action area.
- On the datasheet included in this guidance, record all evidence that indicates desert tortoises may be present (e.g., scat, burrows, carcasses, courtship rings, drinking depressions, etc. in addition to live tortoises).
- Use the Field Manual (USFWS 2009) to categorize the condition of sign.
- Record information and measure desert tortoises as described for large project sites.
- Use mirrors or flashlights to inspect burrows.

2.3 JURISDICTIONAL FEATURES

A general assessment of jurisdictional waters was conducted by Jennings Environmental's Regulatory Specialist, Gene Jennings. This assessment reviewed the site for the presence of waters regulated by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW was conducted for the proposed Project area. Pursuant to Section 404 of the Clean Water Act, USACE regulates the discharge of dredged and/or fill material into waters of the United States. The State of California (State) regulates the discharge of material into waters of the State pursuant to Section 401 of the Clean Water Act and the California Porter- Cologne Water Quality Control Act (California Water Code, Division 7, §13000 et seq.). Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, CDFW regulates all substantial diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. The initial assessment was conducted by a desktop survey through the USGS National Hydrography Dataset for hydrological connectivity. A discussion of the regulatory framework is provided in Appendix C.

The delineation was conducted based on aerial maps and global positioning units were used to assist in determining the limits of jurisdictional waters. All areas identified as supporting jurisdictional waters were measured to the nearest foot. Suspected jurisdictional areas were checked for the presence of definable

channels and/or wetland vegetation, riparian habitat, soils, and hydrology. The JD was conducted in accordance with regulations set forth in 33CFR part 328 and the USACE guidance documents referenced below:

- *USACE Wetlands Research Program Technical Report Y-87-1 (on-line edition), Wetlands Delineation Manual, Environmental Laboratory, 1987 (Wetland Delineation Manual).*
- *USACE Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest, 2001 (Arid Southwest Guidelines).*
- *USACE Minimum Standards for Acceptance of Preliminary Wetlands Delineations, November 30, 2016 (Minimum Standards).*
- *USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), September 2008 (Arid West Supplement).*
- *USACE Jurisdictional Determination Form Instructional Guidebook, May 30, 2007 (JD Form Guidebook).*
- *USACE A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, August 2008 (Delineation Manual).*

Mr. Jennings assessed the site for indicators of active surface flow (presence of hydrophytic vegetation, staining, cracked soil, ponding, etc.). All apparent flow regimes and corresponding hydrogeomorphic features (banks, racking, sediment sorting, destruction of vegetation, etc.) were identified. The lateral extent of USACE jurisdiction was measured at the Ordinary High Watermark (OHWM), which is indicated by a clear, natural line impressed on the bank, shelving, changes in the character of soil, and the presence of flow debris.

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and *A Review of Stream Processes and Forms in Dryland Watersheds* (CDFW, 2010). Specifically, CDFW jurisdiction was delineated by measuring the elevations of land that confine a stream to a definite course when its waters rise to their highest level and to the extent of associated riparian vegetation. Here the bank-full width was used to mark the lateral extent of the jurisdictional drainages.

Potential wetland areas were assessed by searching for hydrophytes and depressions/ponded areas where water would likely collect. Three soil pits were dug to evaluate the soils on site and determine if hydric soils were present. Plant species were identified and given an indicator status as prescribed in the 2013 National Wetland Plant List (Arid West Region) (Lichvar, 2013). Vegetation nomenclature follows The Jepson Manual, *Vascular Plants of California*, 2nd Edition (Baldwin, 2012). When the Jepson Manual does not list a common name, common name nomenclature follows the United States Department of Agriculture, Natural Resources Conservation Service (USDA) Plants Database (USDA, 2014a).

In order to be considered a *jurisdictional wetland* under Section 404, an area must possess three wetland characteristics: hydrophytic *vegetation*, hydric *soils*, and wetland *hydrology*.

Hydrophytic vegetation

Hydrophytic vegetation is plant life that grows, and is typically adapted for life, in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, and herb layers) is considered hydrophytic. Hydrophytic species are those included on the 2013 National Wetland Plant List (Arid West Region) (Lichvar, 2013). Each species on the list is rated according to a wetland indicator category, as shown in Table A. To be considered hydrophytic, the species must have *wetland indicator status*, i.e., be rated as OBL, FACW or FAC.

Table 1: Wetland Indicator Vegetation Categories

Category	Probability
Obligate Wetland (OBL)	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland (FACW)	Usually occur in wetlands (estimated probability 67 to 99%)
Facultative (FAC)	Equally likely to occur in wetlands and non-wetlands (estimated probability 34 to 66%)
Facultative Upland (FACU)	Usually occur in non-wetlands (estimated probability 67 to 99%)
Obligate Upland (UPL)	Almost always occur in non-wetlands (estimated probability >99%)

Hydric Soil

Soil maps from the USDA-NRCS Web Soil Survey (USDA 2015) were reviewed for soil types found within the subject property. Hydric soils are saturated or inundated long enough during the growing season to develop anaerobic conditions that favor growth and regeneration of hydrophytic vegetation. There are a number of indirect indicators that may signify the presence of hydric soils including hydrogen sulfide generation, the presence of iron and manganese concretions, certain soil colors, gleying, and the presence of mottling. Generally, hydric soils are dark in color or may be gleyed (bluish, greenish, or grayish), resulting from soil development under anoxic (without oxygen) conditions. Bright mottles within an otherwise dark soil matrix indicate periodic saturation with intervening periods of soil aeration. Hydric indicators are particularly difficult to observe in sandy soils, which are often recently deposited soils of flood plains (entisols) and usually lack sufficient fines (clay and silt) and organic material to allow use of soil color as a reliable indicator of hydric conditions. Hydric soil indicators in sandy soils include accumulations of organic matter in the surface horizon, vertical streaking of subsurface horizons by organic matter, and organic pans.

The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the Munsell Soil Color Charts (Gretag/Macbeth, 2000). Soil pits were dug to an approximate depth of 18 to evaluate soil profiles for indications of anaerobic and redoximorphic (hydric) conditions in the subsurface.

Wetland Hydrology

The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987 and 2008b).

2.4 VEGETATION

All plant species observed within the Project site were recorded. Vegetation communities within the Project site were identified and qualitatively described. Plant communities were determined in accordance with the *Manual of California Vegetation*, *Second Edition* (Sawyer et al. 2009). Plant nomenclature follows that of *The Jepson Manual, Second Edition* (Baldwin et al. 2012). A comprehensive list of the plant species observed during the survey is provided in Appendix D.

2.5 WILDLIFE

All wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (native vegetation, wildlife trails, etc.) or in habitats with the potential to support state- and/or federally listed or otherwise special-status species. Notes were made on the general habitat types, species observed, and the conditions of the Project site. A comprehensive list of the wildlife species observed during the survey is provided in Appendix D.

2.6 WILDLIFE CORRIDORS AND HABITAT CONSERVATION PLAN

According to the California Essential Habitat Connectivity Project, the Project Site is not mapped within an area for wildlife movement and is not within a habitat conservation plan. Additionally, the site is not within a desert linkage as mapped by the Mojave Desert Land Trust.

SECTION 3.0 – RESULTS

3.1 LITERATURE REVIEW RESULTS

According to the CNDDB, CNPSEI, and other relevant literature and databases, 11 sensitive species including 4 listed species, have been documented in the *Fenner, Fenner Spring, Little Piute Mountains, and Essex* quads. This list of sensitive species and habitats includes any State and/or federally-listed threatened or endangered species, CDFW-designated Species of Special Concern (SSC), and otherwise

Special Animals. "Special Animals" is a general term that refers to all of the taxa in the CNDDB that CDFW is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species." The CDFW considers the taxa on this list to be those of greatest conservation need.

An analysis of the likelihood of the occurrence of all CNDDB-sensitive species documented in the *Fenner, Fenner Spring, Little Piute Mountains, and Essex* quads are provided in Table 2, in Appendix D. This analysis takes into account species range as well as documentation within the vicinity of the project area and includes the habitat requirements for each species and the potential for their occurrence on the site, based on required habitat elements and range relative to the current site conditions.

3.1.1 SPECIAL STATUS SPECIES

Desert Tortoise (Gopherus agassizii)

The desert tortoise is a State and federally-listed threatened species. Throughout its range, it is threatened by habitat loss, domestic grazing, predation, collections, and increased mortality rates. The desert tortoise is typically found in creosote bush scrub. They are most often found on level or sloped ground where the substrate is firm but not too rocky. Tortoise burrows are typically found at the base of shrubs, in the sides of washes and hillsides. Because a single tortoise may have many burrows distributed throughout its home range, it is not possible to predict the exact numbers of individuals on a site based upon burrow numbers.

In 1992 the US Bureau of Land Management issued the *California Statewide Desert Tortoise Management Policy* which included categorizing habitat into three levels of classification. The management goal for Category I areas is to maintain stable, viable populations and to increase the population where possible. The management goal for Category II areas is to maintain stable, viable populations. The management goal for Category III areas is to limit population declines to the extent feasible. In April 1993, the BLM amended the CDCA plan to delineate these three categories of desert tortoise habitat on public lands. Although habitat categories apply only to public lands administered by the BLM, regulatory agencies typically determine habitat compensation ratios based on the nearest BLM habitat categories (Desert Tortoise Compensation Team 1991). With the adoption of the West Mojave Plan (U.S. Bureau of Land Management 2005), all lands that are outside Desert Wildlife Management Areas, including the subject parcel, are characterized as Category 3 Habitat, which is the lowest priority management area for viable populations of the desert tortoise.

Burrowing Owl (Athene cunicularia)

The burrowing owl (BUOW) is a state and federal SSC. This owl is a mottled, brownish and sand-colored, dove-sized raptor, with large, yellow eyes, a rounded head lacking ear tufts, white eyebrows, and long legs compared to other owl species. It is a ground-dwelling owl typically found in arid prairies, fields, and open areas where vegetation is sparse and low to the ground. The BUOW is heavily dependent upon the presence of mammal burrows, with ground squirrel burrows being a common choice, in its habitat to provide shelter from predators, inclement weather, and to provide a nesting place (Coulombe 1971). They are also known to make use of human-created structures, such as cement culverts and pipes, for burrows.

BUOW spends a great deal of time standing on dirt mounds at the entrance to a burrow or perched on a fence post or other low to the ground perch from which they hunt for prey. BUOW frequently hunt by hovering in place above the ground and dropping on their prey from above. They feed primarily on insects such as grasshoppers, June beetles, and moths, but will also take small rodents, birds, and reptiles. They are active during the day and night but are considered a crepuscular owl; generally observed in the early morning hours or at twilight. The breeding season for BUOW is February 1 through August 31. Up to 11, but typically 7 to 9, eggs are laid in a burrow, abandoned pipe, or other subterranean hollows where incubation is complete in 28-30 days. Young BUOW fledges in 44 days. The BUOW is considered a migratory species in portions of its range, which includes western North America from Canada to Mexico, and east to Texas and Louisiana. BUOW populations in California are considered to be sedentary or locally migratory.

Throughout its range, the BUOW is vulnerable to habitat loss, predation, vehicular collisions, and destruction of burrow sites, and the poisoning of ground squirrels (Grinnell and Miller 1944, Zarn 1974, Remsen 1978). BUOW has disappeared from significant portions of their range in the last 15 years and, overall, nearly 60% of the breeding groups of owls known to have existed in California during the 1980s had disappeared by the early 1990s (Burrowing Owl Consortium 1993). The BUOW is not listed under the state or federal Endangered Species Act but is considered both a federal and state Species of Special Concern. The BUOW is a migratory bird protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5).

Desert Kit Fox (*Vulpes macrotis*)

The desert kit fox is not federally- or state-listed, but is considered a species of local concern by the County of Los Angeles. It is an uncommon to rare permanent resident in arid habitats within southern California (CDFW 2017b). Kit foxes are threatened by a number of human activities, including poaching, pesticide and rodenticide use, and direct poisoning, as well as heavy agricultural and urban development (Eder 2005). Desert kit foxes occur in the desert and other arid habitats, including sagebrush flats, creosote scrub, and annual grassland habitats, and other areas with scattered brush, scrub, and shrubs. They are an important predator of small mammals, preying on black-tailed jackrabbits (*Lepus californicus*), desert cottontails (*Sylvilagus audubonii*), kangaroo rats, ground squirrels, and other rodents, insects, reptiles, birds, and bird eggs. Limited vegetation may be taken. Desert kit foxes excavate burrows in loose-textured sandy or loamy soils for shelter, pupping, and as an escape from extreme heat and cold (Eder 2005, CDFW B). Open, level areas are preferred for burrowing. Man-made structures and infrastructure, including culverts and pipes, also may be used for denning where suitable friable soils are not present (CDFW B).

American Badger (*Taxidea taxus*)

The American badger is a CDFW Species of Special Concern. Badgers are uncommon, permanent residents throughout California, and occur most commonly in open stages of shrub, woodland, and herbaceous habitats. They are tenacious diggers and occur where friable soils support denning and burrowing activities. They are active year-round, and most often nocturnal, although they may be active during the day. They prey upon fossorial rodents, especially California ground squirrels and pocket gophers; rats and

mice, some reptiles, insects, eggs, birds, and carrion also may be taken. Breeding typically occurs in the summer and early fall, with pups being born the following March or April in burrows dug in relatively dry, often sandy soil. American badgers are threatened primarily by indiscriminate trapping, agricultural conversion, and the eradication of ground squirrels and other fossorial rodents that comprise the majority of their prey base (CDFW B).

3.1.2 JURISDICTIONAL WATERS

Aerial imagery of the site was examined and compared with the surrounding USGS 7.5-minute topographic quadrangle maps to identify drainage features within the survey area as indicated from topographic changes, blue-line features, or visible drainage patterns. The U.S. Fish and Wildlife Service National Wetland Inventory and Environmental Protection Agency (EPA) Water Program "My Waters" data layers were also reviewed to determine whether any hydrologic features and wetland areas had been documented within the vicinity of the site. Similarly, the Soil maps from the U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2023) were reviewed to identify the soil series on-site and to check if they have been identified regionally as hydric soils. Upstream and downstream connectivity of waterways (if present) was reviewed in the field, on aerial imagery, and topographic maps to determine jurisdictional status.

3.1.3 DESIGNATED CRITICAL HABITAT

The site is located within the USFWS-designated Critical Habitat for the federally endangered desert tortoise, As such, protocol surveys were completed to determine the presence or absence of this species within the critical habitat. See section 3.2.3 for the results of the protocol desert tortoise surveys.

3.1.4 HYDROLOGY AND HYDROLOGIC CONNECTIVITY

Hydrologically, the project site is located within an undefined Hydrologic Sub-Area (HSA 710.20), as identified on the Calwater Watershed maps. This undefined area comprises a 704,024-acre drainage area within the larger Lower Watson Wash Watershed Area (Hydrologic Unit Code [HUC10] 1810010033, US Watershed Maps) (CalTrans, 2023). The Lower Watson Wash watershed is bordered to the north by the Upper Watson Wash watershed, to the east by the Upper Homer Wash watershed, to the south by the Lower Homer Wash watershed, and to the west by the Schulyler Wash and Clipper Valley Wash watersheds. (Figure 3 in Appendix A).

3.1.5 SAN BERNARDINO COUNTY DEVELOPMENT CODE

§ 88.01.060 Desert Native Plant Protection.

This Section provides regulations for the removal or harvesting of specified desert native plants in order to preserve and protect the plants and to provide for the conservation and wise use of desert resources. The provisions are intended to augment and coordinate with the Desert Native Plants Act (Food and Agricultural Code §§ 80001 *et seq.*) and the efforts of the State Department of Food and Agriculture to implement and enforce the Act. Section § 88.01.060 of the San Bernardino Development Code is described below.

(a) *Definitions.* Terms and phrases used within this Section shall be defined in Division 10 (Definitions) and/or defined by the California Food and Agricultural Code. The California Food and Agricultural Code definition, if one exists, shall prevail over a conflicting definition in this Development Code.

(b) *Applicability.* The provisions of this Section shall apply to desert native plants specified in Subdivision (c) (Regulated Desert Native Plants) that are growing on any of the following lands, unless exempt in compliance with § 88.01.030 (Exempt Activities):

(1) Privately owned or publicly owned land in the Desert Region.

(2) Privately owned or publicly owned land in any parts of the Mountain Region in which desert native plants naturally grow in a transitional habitat.

(c) *Regulated Desert Native Plants.* The following desert native plants or any part of them, except the fruit, shall not be removed except under a Tree or Plant Removal Permit in compliance with § 88.01.050 (Tree or Plant Removal Permits). In all cases the botanical names shall govern the interpretation of this Section.

(1) The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:

(A) Dalea spinosa (smoketree).

(B) All species of the genus Prosopis (mesquites).

(2) All species of the family Agavaceae (century plants, nolinas, yuccas).

(3) Creosote Rings, ten feet or greater in diameter.

(4) All Western Joshua trees.

(5) Any part of any of the following species, whether living or dead:

(A) Olneya tesota (desert ironwood).

(B) All species of the genus Prosopis (mesquites).

(C) All species of the genus Cercidium (palos verdes).

(d) *Compliance with Desert Native Plants Act.* Removal actions of all plants protected or regulated by the Desert Native Plants Act (Food and Agricultural Code §§ 80001 *et seq.*) shall comply with the provisions of the Act before the issuance of a development permit or approval of a land use application.

3.2 FIELD STUDY RESULTS

3.2.1 HABITAT

The habitat on site consists of approximately 71.83 acres of creosote bush-brittle bush scrub (*Larrea tridentata - Encelia farinose* Shrubland Alliance) was mapped on site. This plant association is dominated by creosote bush and brittle bush (*Encelia farinosa*), a short open canopy and a seasonal herbaceous annual layer. Creosote bush – brittle bush scrub habitats have well-drained soils and frequently occur on small washes, rills, alluvial fans, and colluvium on upland slopes. This habitat type is not considered to be a sensitive habitat type that requires CEQA review. However, there is presence of vegetation that is subject to the San Bernardino Desert Native Plant Protection Development Code.

The site also contained approximately 18.67 acres of creosote bush-brittle bush scrub showed evidence of rock mining and is categorized as "disturbed" for this assessment. This area included denuded soils, sparse or damaged vegetation of which approximately 75% was native. The sparse vegetation cover was approximately 20% and included creosote bush, cheesebush (*Ambrosia salsola*), Skeleton weed (*Eriogonum deflexum*), Mediterranean grass (*Schismus arabicus*) and Foxtail chess (*Bromus madritensis*).

3.2.2 SPECIAL STATUS SPECIES

No State and/or federally listed threatened or endangered species or other sensitive species were observed on-site during surveys.

Desert Tortoise

The habitat within the southeast corner of the site is minimally suitable for desert tortoise. However, because the site is within designated critical habitat, protocol surveys were completed for this species. Protocol surveys were conducted using the 2018 USFWS Desert Tortoise Protocol.

> ***Findings***: No live desert tortoises were observed within the Project area. A class 5 desert tortoise carcass was located within the within the Previous Project Area (Figure 4, Appendix A. The anterior portion of the shell was absent and broken, which is considered disarticulated. However, scutes were not peeling off the bone, and the shell was mostly complete. The shell was cracked and no spinal cord was present. No other desert tortoise sign was observed. Additionally, the tortoise survey identified additional suitable burrows that were not occupied. There was no sign of tortoise (scat, tracks, etc.) within the entrance to the burrows or in the vicinity of the burrows.

Burrowing Owl

Based on the August 2023 field survey, the site does contain suitable habitat for this species. However, no burrowing owls were observed during the site visit. No portion of the Project site showed any evidence of past or present BUOW activity. No feathers, whitewash, or castings were found.

> ***Findings***: Although burrowing owl was absent from the site during the survey, there is suitable habitat within the Project site. As such, it is recommended that pre-construction surveys be

completed for this species. The pre-construction survey should follow the recommended guidance from CDFW.

Desert Kit Fox

The site is suitable for this species. This species was not observed during the survey. However, some burrows of suitable size or shape were observed. Therefore, the following mitigation measure should be implemented:

> ***Findings***: Prior to any ground disturbing activities, a pre-construction survey for this species should be conducted by a qualified biologist. The surveys should be conducted during the appropriate times to observe the target species and using the most current survey protocol.

American Badger

The site is suitable for this species. This species was not observed during the survey. However, some burrows of suitable size or shape were observed. Therefore, the following mitigation measure should be implemented:

> ***Findings***: Prior to any ground disturbing activities, a pre-construction survey for this species should be conducted by a qualified biologist. The surveys should be conducted during the appropriate times to observe the target species and using the most current survey protocol.

3.2.3 NESTING BIRDS

The Project site and immediate surrounding area does contain marginal habitat suitable for nesting birds. As such the Project is subject to the following nesting bird regulations. Recommendations for avoidance and minimization are in section 4.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918. This Act implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The Act has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The Act prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service.

California Fish and Game Code

The Project site is also subject to Sections 3503 and 3503.5 of the Fish and Game Code. Section 3503 states, “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto”. And Section 3503.5 states, “It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto”.

3.2.4 JURISDICTIONAL WATERS

Waters of the United States and Waters of the State

The USACE has the authority to permit the discharge of dredged or fill material in WOUS under Section 404 CWA. While the Regional Water Quality Board has authority over the discharge of dredged or fill material in WOS under Section 401 CWA as well as the Porter-Cologne Water Quality Control Act. The Project area was surveyed with 100 percent visual coverage and Drainage A on-site does not meet the definition for WOUS and WOS. Therefore, there are no permits needed from the Army Corps of Engineers or the Regional Water Quality Board.

Fish and Game Code Section 1602 - State Lake and/or Streambed

The CDFW asserts jurisdiction over any drainage feature that contains a definable bed and bank or associated riparian vegetation. The Project area was surveyed with 100 percent visual coverage and Drainage A on-site is considered jurisdictional under CDFW. Table 1 below details the extent of CDFW jurisdiction within the channel (Figure 5 in Appendix A).

Table 2 – Jurisdiction Areas for the Essex Project

Feature	Bank-Full width (feet)	Length (feet)	Max Channel Depth (feet)	WoUS Corps jurisdiction (acres)	FGC 1600 CDFW jurisdiction (acres)
Drainage A	675	4,266	3	0	38.6
			Total	0	38.6

Although the drainage is present within the Previous Project Area, the current Project Area has reduced the boundary of the site to exclude any work from within the wash. As such no regulatory permits will be required for the proposed Project.

3.2.5 WETLANDS AND BLUE LINE STREAM

According to the National Wetlands Inventory Map (NWI), the jurisdictional area is mapped as Riverine. More specifically the classification is listed as R4SBJ (R=Riverine, 4=Intermittent, SB=Streambed, and J=Intermittently Flooded). Although the site is classified as Riverine, there are no wetlands present within the Project site. For an area to be classified as a Wetland, it must meet the three requirements listed above. The site does not have sufficient hydrology, hydrophytic vegetation, or hydric soils. Therefore, there are no wetlands present on-site.

3.2.6 NATIVE PLANT PROTECTION PLAN

The Proposed Project Site does contain silver cholla, pencil cholla, clustered barrel cactus, Engleman's hedgehog cactus, barrel cactus, spiny fishhook cactus, beavertail, and Mojave yucca, which is are protected species under San Bernardino County Development Code § 88.01.060 and the California Desert Native Plant Act. See section 4 for recommendations on required permits for compliance.

SECTION 4.0 – CONCLUSIONS AND RECOMMENDATIONS

Based on the literature review and personal observations made in the immediate vicinity, no State and/or federally-listed threatened or endangered species are documented/or expected to occur within the Project site. Additionally, no plant species with the California Rare Plant Rank (CRPR) of 1 or 2 were observed on-site or documented to occur on-site in the relevant databases. No other sensitive species were observed within the project area or buffer area.

4.1 JURISDICTIONAL AREAS

As noted above the Project has reduced the Project footprint to exclude the wash area, As such, there are no streams, channels, washes, or swales that meet the definitions of Section 1600 of the State of California Fish and Game Code (FGC) under the jurisdiction of the CDFW, Section 401 ("Waters of the State") of the Clean Water Act (CWA) under the jurisdiction of the Regional Water Quality Control Board (RWQCB), or "Waters of the United States" (WoUS) as defined by Section 404 of the CWA under the jurisdiction of the U.S. Army Corps of Engineers (Corps) within the subject parcel. Therefore, no permit from any regulatory agency will be required.

4.2 SENSITIVE SPECIES

Desert tortoise

Although a desert tortoise carcass was found within the Previous Project Area (desert wash), the proposed Project does not propose any disturbance to the wash and the Project boundary will be fenced with desert tortoise fencing following currently acceptable guidelines from the USFWS.

However, because the site does contain suitable habitat and tortoise have been documented within the region, it is recommended that pre-construction surveys be completed for this species prior to any ground-disturbing activities or desert tortoise fence installation. These surveys should be conducted by a qualified biologist and at an appropriate time of day/year to observe signs of desert tortoise. Surveys should also be conducted using the current survey protocol from the USFWS.

If desert tortoise are found onsite during the pre-construction clearance survey, coordination will need to occur with the USFWS and CDFW to determine if avoidance and minimization measures can be implemented to avoid any direct or indirect impacts to desert tortoise, or if "Take" permits will need to be prepared and approved by the USFWS and CDFW.

Desert Kit Fox and American Badger

The site is suitable for these species. Therefore, the following mitigation measure should be implemented:

> Prior to any ground disturbing activities, a pre-construction survey for this species should be conducted by a qualified biologist. The surveys should be conducted during the appropriate times to observe the target species and using the most current survey protocol.

4.3 SAN BERNARDINO COUNTY DEVELOPMENT CODE AND THE CALIFORNIA DESERT NATIVE PLANT ACT

As stated above, the Project is subject to compliance with the San Bernardino County Development Code § 88.01.060 and the California Desert Native Plant Act. Therefore, the following mitigation measure should be put in place:

> Any native desert plant protected by the Desert Native Plant Act that, is proposed to be impacted, should be flagged for relocation on-site, to a nursery, or suitable other entity (as determined by the County) prior to construction. Any construction that removes any protected plant species would require a permit from the agricultural commissioner.

4.4 BURROWING OWL

Burrowing Owl

Since there is some habitat within the Project site and adjacent area that is suitable for BUOW in general, the following mitigation measure should be implemented:

30-Day Pre-Construction Survey

> Prior to the start of any construction, a 30-day pre-construction survey should be conducted for the presence of BUOW. Surveys shall be completed following the recommendationsand guidelines provided within the 2012 BUOW Staff Report provided by the CDFW.

4.5 NESTING BIRDS

Nesting Birds

Since there is some of the habitat within the Project site and adjacent area that is marginally suitable for nesting birds in general, the following mitigation measure should be implemented.

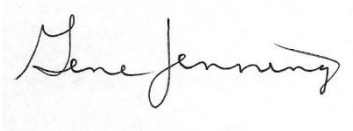
> Nesting bird nesting season generally extends from February 1 through September 15 in southern California and specifically, March 15 through August 31 for migratory passerine birds. To avoid impacts to nesting birds (common and special status) during the nesting season, a qualified Avian Biologist will conduct pre-construction Nesting Bird Surveys (NBS) prior to Project-related disturbance to nestable vegetation to identify any active nests. If no active nests are found, no further action will be required. If an active nest is found, the biologist will set appropriate no-work buffers around the nest which will be based upon the nesting species, its sensitivity to disturbance, nesting stage, and expected types, intensity, and duration of the disturbance. The nests and buffer zones shall be field-checked weekly by a qualified biological monitor. The approved no-work buffer zone shall be clearly marked in the field, within which no disturbance activity shall commence until the qualified biologist has determined the young birds have successfully fledged and the nest is inactive.

4.6 CERTIFICATION

I hereby certify that the statements furnished herein, and in the attached exhibits present data and information required for this analysis to the best of my ability, and the facts, statements, and information presented are true and correct to the best of my knowledge and belief. This report was prepared in accordance with professional requirements and standards. Fieldwork conducted for this assessment was performed by me. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project proponent and that I have no financial interest in the project.

Please do not hesitate to contact me at 909-534-4547 should you have any questions or require further information.

Sincerely,



Gene Jennings
Principal/Regulatory Specialist

Appendices:

- Appendix A – Figures
- Appendix B – Site Photos
- Appendix C – Regulatory Framework
- Appendix D – Tables

Section 5 – REFERENCES

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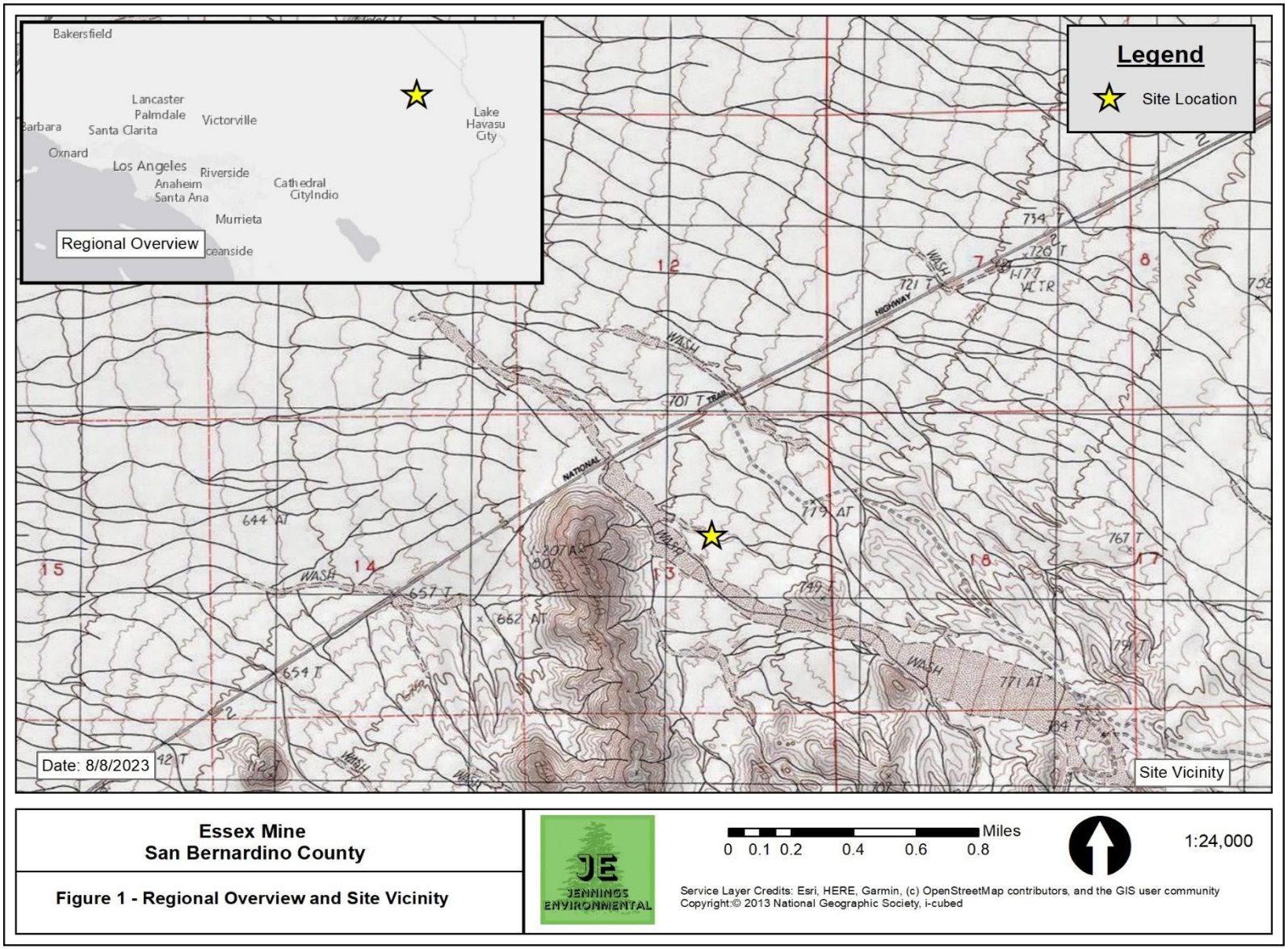
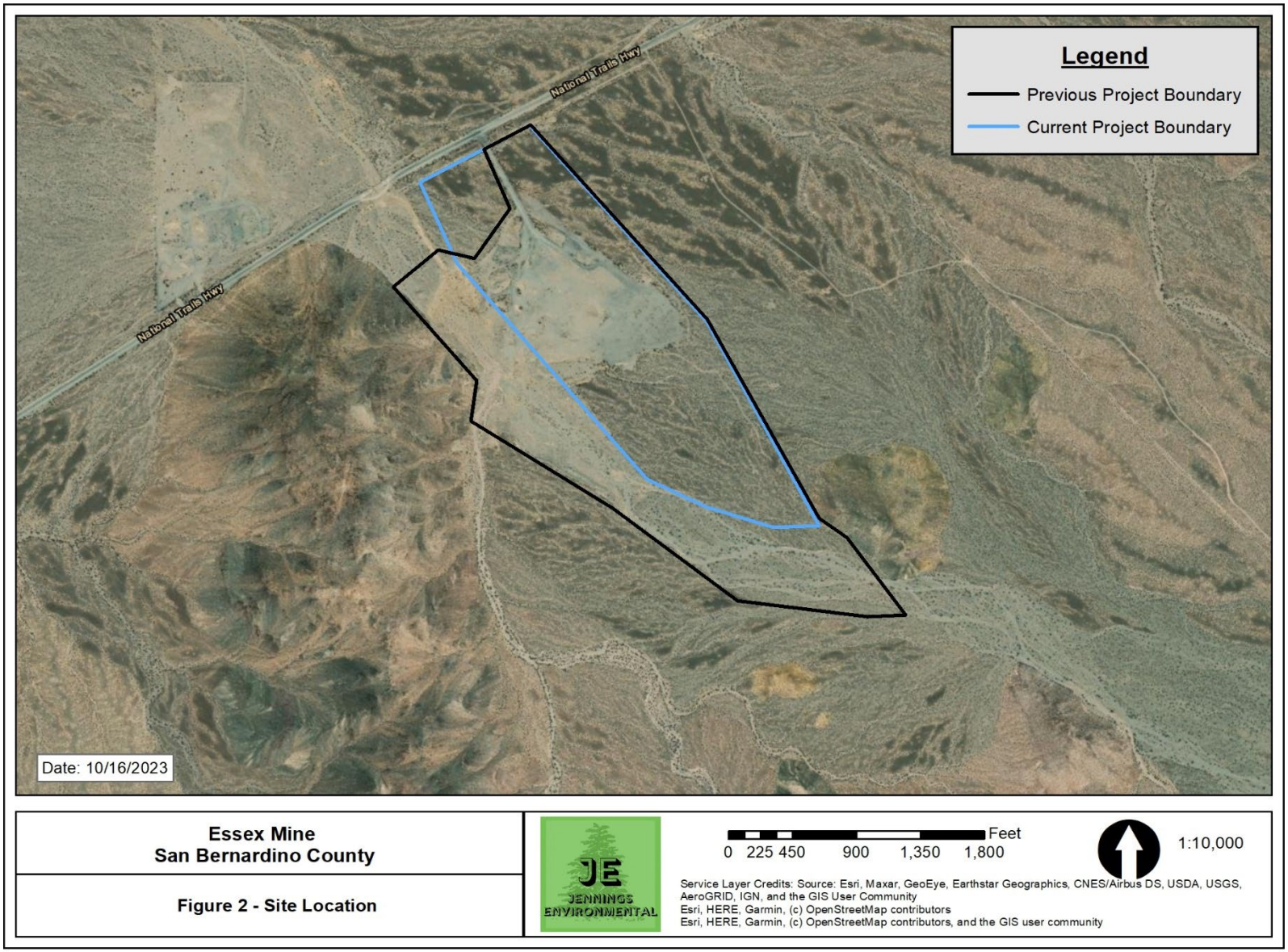
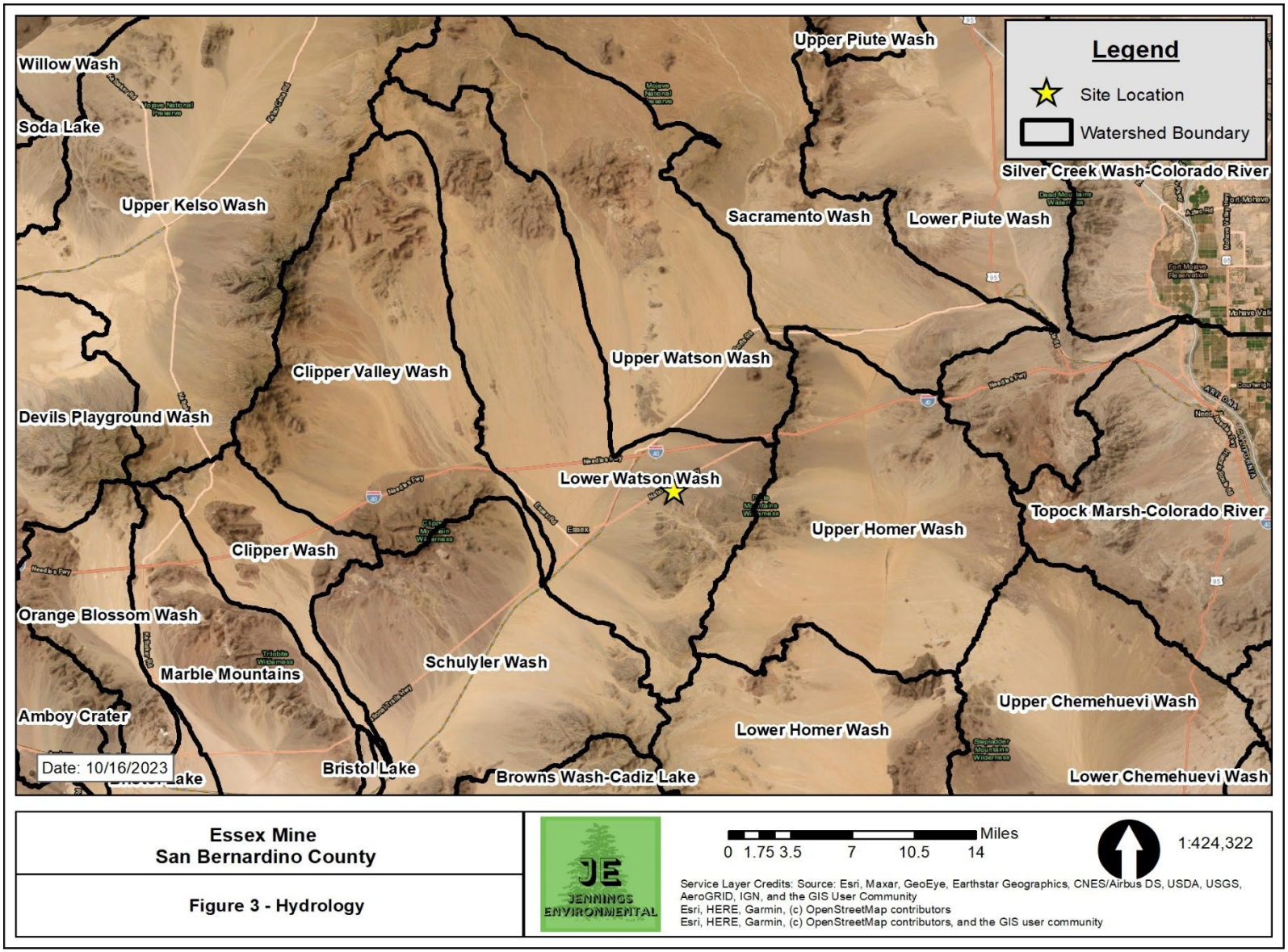
Appendix A – Figures


Bakersfield
Lancaster
Palmdale
Victorville
Santa Clarita
Oxnard
Los Angeles
Riverside
Anaheim
Santa Ana
Cathedral City
Indio
Murrieta
Lake Havasu City
Regional Overview
Legend
Site Location
Date: 8/8/2023
Site Vicinity
Essex Mine
San Bernardino County
Figure 1 - Regional Overview and Site Vicinity
JE
JENNINGS ENVIRONMENTAL
0 0.1 0.2 0.4 0.6 0.8 Miles
1:24,000
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Copyright:© 2013 National Geographic Society, i-cubed


Legend
Previous Project Boundary
Current Project Boundary
National Trails Hwy
National Trails Hwy
Date: 10/16/2023
Essex Mine
San Bernardino County
Figure 2 - Site Location
JE
JENNINGS ENVIRONMENTAL
0 225 450 900 1,350 1,800
Feet
1:10,000
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community


Legend
Site Location
Watershed Boundary
Willow Wash
Soda Lake
Upper Piute Wash
Silver Creek Wash-Colorado River
Upper Kelso Wash
Sacramento Wash
Lower Piute Wash
Clipper Valley Wash
Upper Watson Wash
Devils Playground Wash
Lower Watson Wash
Topock Marsh-Colorado River
Upper Homer Wash
Clipper Wash
Orange Blossom Wash
Schulyler Wash
Marble Mountains
Amboy Crater
Upper Chemehuevi Wash
Lower Homer Wash
Bristol Lake
Browns Wash-Cadiz Lake
Lower Chemehuevi Wash
Date: 10/16/2023
Essex Mine
San Bernardino County
Figure 3 - Hydrology
JE
JENNINGS ENVIRONMENTAL
Miles
0 1.75 3.5 7 10.5 14
1:424,322
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

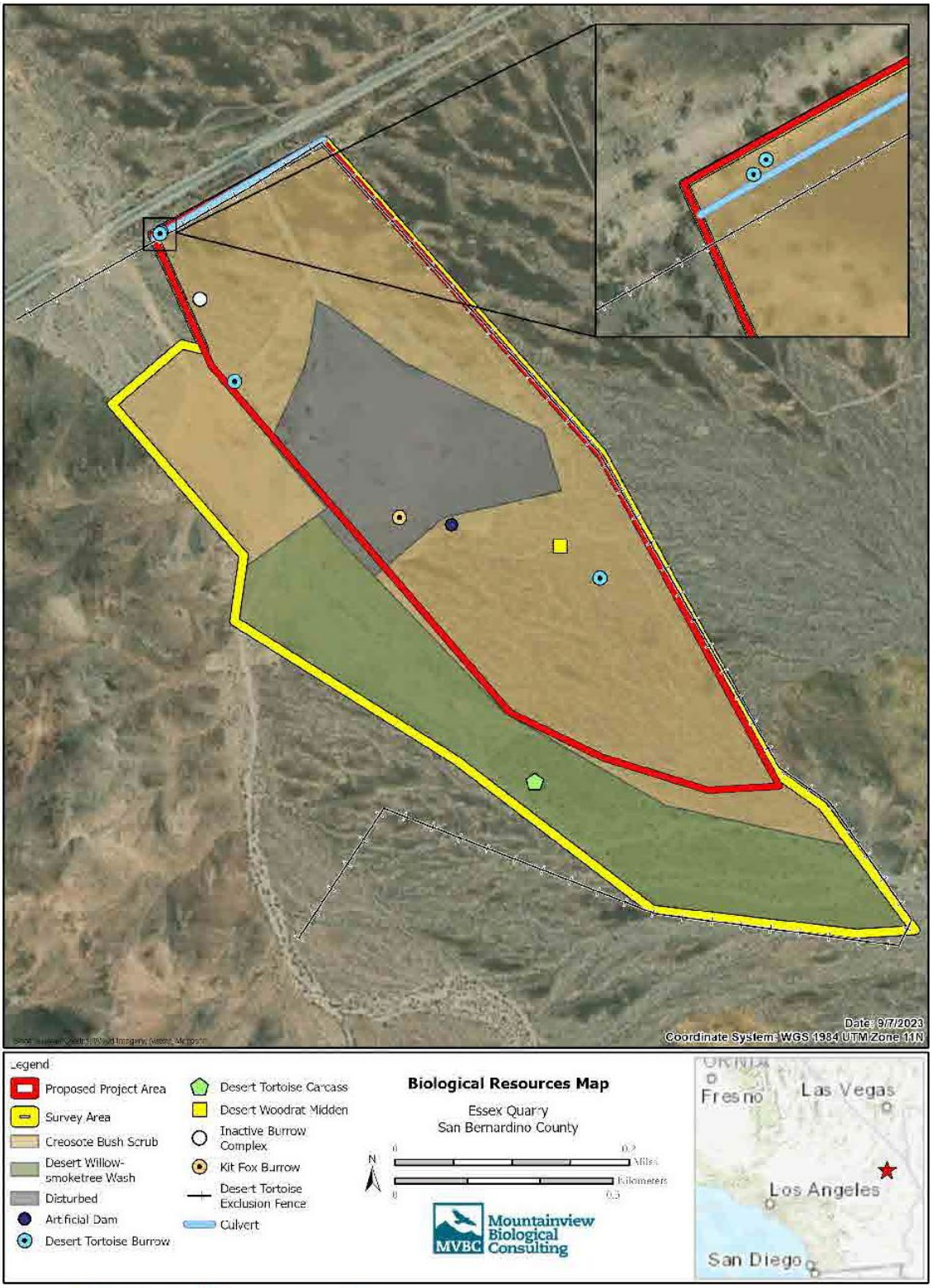
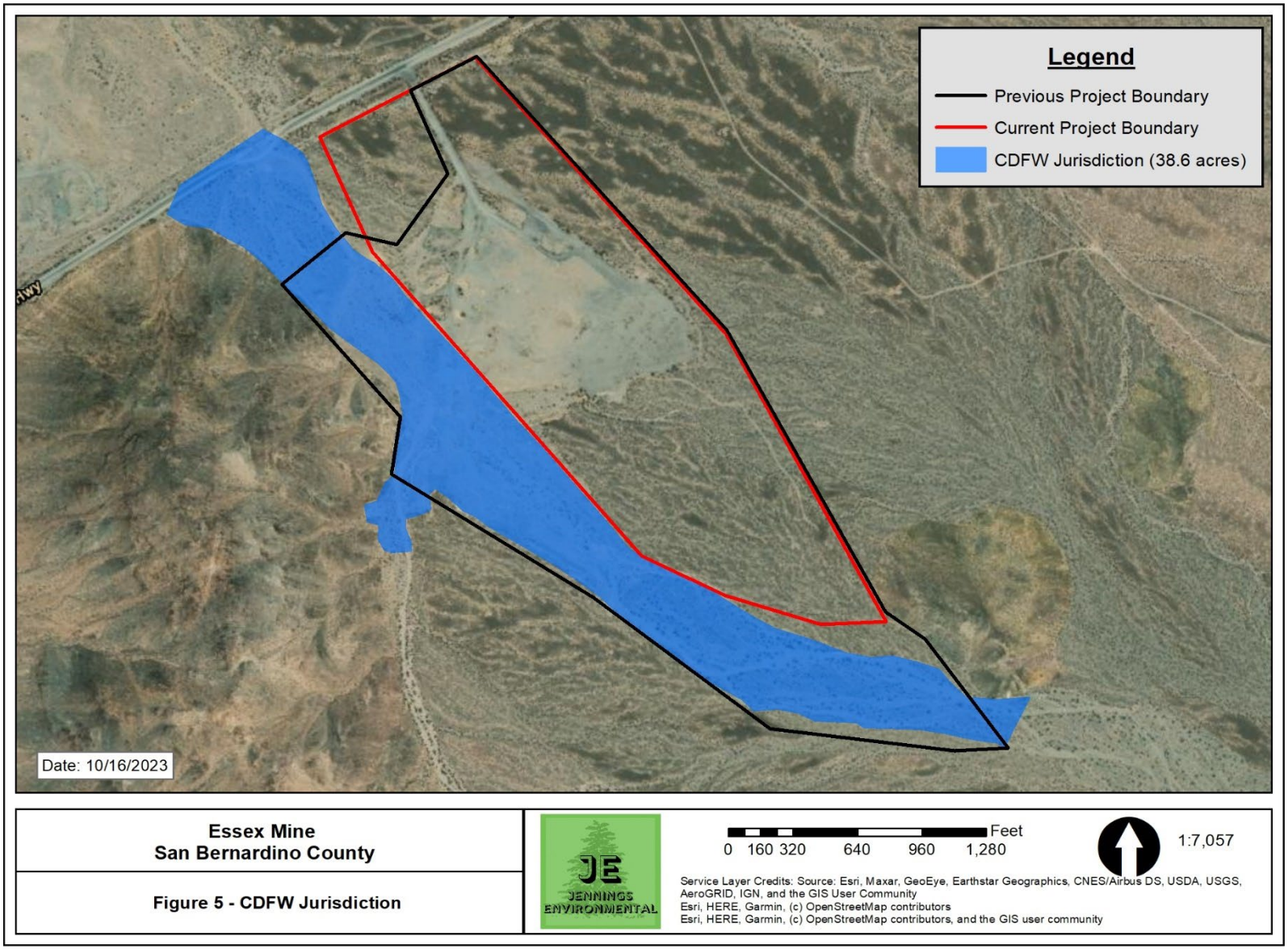


Figure 4. Biological Resources Map


Legend
Previous Project Boundary
Current Project Boundary
CDFW Jurisdiction (38.6 acres)
Date: 10/16/2023
Essex Mine
San Bernardino County
Figure 5 - CDFW Jurisdiction
JE
JENNINGS ENVIRONMENTAL
0 160 320 640 960 1,280
Feet
1:7,057
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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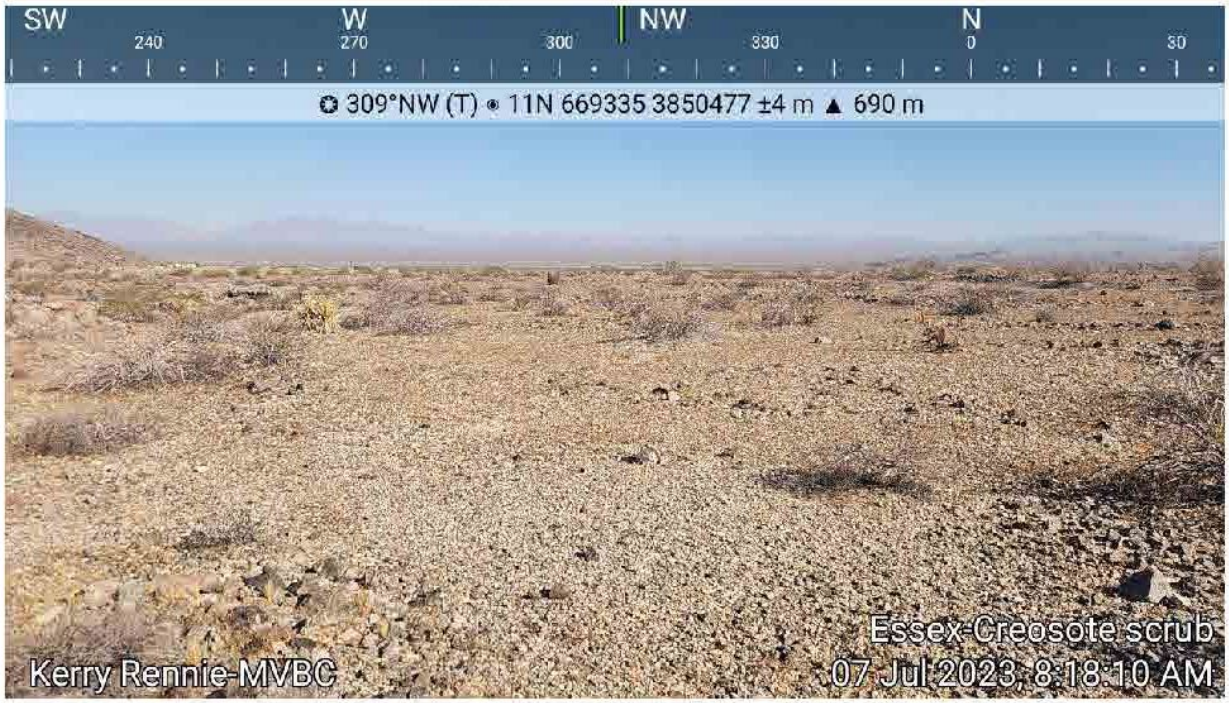
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Appendix B – Photos

General Site Photos

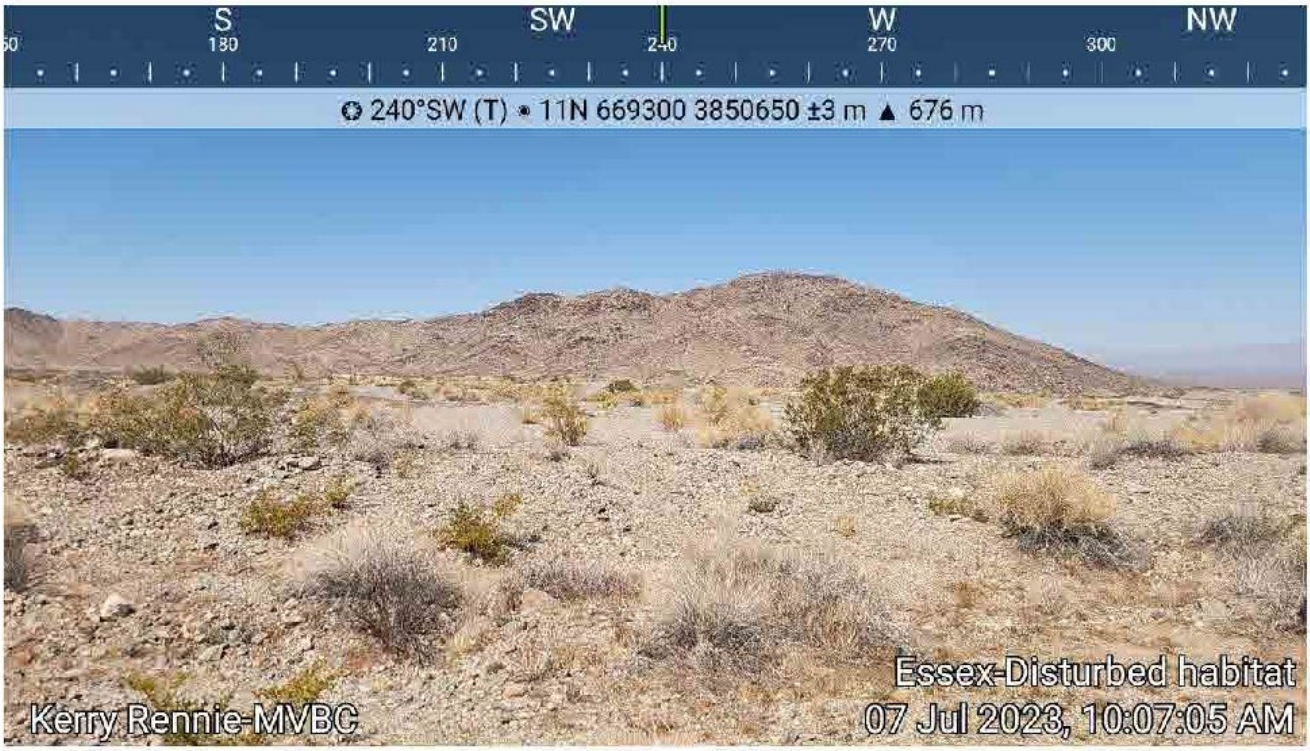
GS 01 Creosote bush – brittle bush scrub on north portion of the site; National Trail Highway is visible in the distance

GS 02 Creosote bush – brittle bush scrub central to the site



GS 03 Creosote bush – brittle bush scrub

GS 04 Ecotone between creosote bush scrub and desert wash



GS 09 Disturbed habitat

GS 10 Disturbed habitat with boulder stockpile

GS 11 Disturbed habitat with stockpile

GS 12 Disturbed habitat with vehicle tracks

Appendix C – Regulatory Framework

1.1 FEDERAL JURISDICTION

1.1.1 United States Army Corps of Engineers

Activities within inland streams, wetlands, and riparian areas in California are regulated by agencies at the federal, state, and regional levels. At the federal level, the U.S. Army Corps of Engineers (USACE) Regulatory Program regulates activities within wetlands and waters of the US pursuant to Section 404 of the Federal Clean Water Act (CWA).

At the state level, the California Department of Fish and Wildlife (CDFW) regulates activities within the bed, bank, and associated habitat of a stream under the Fish and Game Code §§ 1600–1616. The California State Water Resources Board (SWRB) delegates authority at the regional level to Regional Water Quality Control Boards (RWQCB) that are responsible for regulating discharge into waters of the US under Section 401 of the federal CWA and waters of the State under the California Porter-Cologne Water Quality Act.

The CWA was implemented to maintain and restore the chemical, physical, and biological integrity of the Waters of the United States (33 Code of Federal Regulations [CFR] Part 328 Section 328.3). "Waters of the US" are defined as follows:

> **§ 328.3 Definitions.**
> For the purpose of this regulation these terms are defined as follows:
> (a) *Waters of the United States* means:
> (1) Waters which are:
> (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
> (ii) The territorial seas; or
> (iii) Interstate waters, including interstate wetlands;
> (2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;
> (3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section:
> (i) That are relatively permanent, standing or continuously flowing bodies of water; or
> (ii) That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section;
> (4) Wetlands adjacent to the following waters:
> (i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3)(i) of this section and with a continuous surface connection to those waters; or

(iii) Waters identified in paragraph (a)(2) or (3) of this section when the wetlands either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section;

(5) Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) of this section:

(i) That are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3)(i) of this section; or

(ii) That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section.

(b) The following are not ‘‘waters of the United States’’ even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area’s status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is

abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (*e.g.,* gullies, small washes) characterized by low volume, infrequent, or short duration flow.

(c) In this section, the following definitions apply:

(1) *Wetlands* means 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. Wetlands generally include swamps, marshes, bogs, and similar areas.

(2) *Adjacent* means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are ''adjacent wetlands.''

(3) *High tide line* means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such at those accompanying a hurricane or other intense storm.

(4) *Ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(5) *Tidal waters* means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

(6) *Significantly affect* means a material influence on the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section. To determine whether waters, either alone or in combination

with similarly situated waters in the region, have a material influence on the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section, the
functions identified in paragraph (c)(6)(i) of this section will be assessed and the factors identified in paragraph (c)(6)(ii) of this section will be considered:

(i) Functions to be assessed:

(A) Contribution of flow;

(B) Trapping, transformation, filtering, and transport of materials (including nutrients, sediment, and other pollutants);

(C) Retention and attenuation of floodwaters and runoff;

(D) Modulation of temperature in waters identified in paragraph (a)(1) of this section; or

(E) Provision of habitat and food resources for aquatic species located in waters identified in paragraph (a)(1) of this section;

(ii) Factors to be considered:

(A) The distance from a water identified in paragraph (a)(1) of this section;

(B) Hydrologic factors, such as the frequency, duration, magnitude, timing, and rate of hydrologic connections, including shallow subsurface flow;

(C) The size, density, or number of waters that have been determined to be similarly situated;

(D) Landscape position and geomorphology; an

(E) Climatological variables such as temperature, rainfall, and snowpack.

1.2 STATE JURISDICTION

The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the CWA as well as the California Porter-Cologne Water Quality Control Act (Porter-Cologne; California Water Code, Division 7, §13000 et seq.). Waters of the State are defined by Porter-Cologne as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050(e)). Waters of the State broadly includes all waters within the State's boundaries (public or private), including waters in both natural and artificial channels.

1.2.1 Regional Water Quality Control Board

Under Porter-Cologne, the State Water Resources Control Board (SWRCB) and the local Regional Water Quality Control Boards (RWQCB) regulate the discharge of waste into waters of the State. Discharges of waste include "fill, any material resulting from human activity, or any other 'discharge' that may directly or indirectly impact 'waters of the state.'" Porter-Cologne reserves the right for the State to regulate activities that could affect the quantity and/or quality of surface and/or groundwaters, including isolated wetlands, within the State. Wetlands were defined as waters of the State if they demonstrated both wetland hydrology and hydric soils. Waters of the State determined to be jurisdictional for these purposes require, if impacted, waste discharge requirements (WDRs).

When an activity results in fill or discharge directly below the OHWM of jurisdictional waters of the United States (federal jurisdiction), including wetlands, a CWA Section 401 Water Quality Certification is required. If a proposed project is not subject to CWA Section 401 certification but involves activities that may result in a discharge to waters of the State, the project may still be regulated under Porter-Cologne and may be subject to waste discharge requirements. In cases where waters apply to both CWA and Porter-Cologne, RWQCB may consolidate permitting requirements to one permit.

1.2.2 California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, the California Department of Fish and Wildlife (CDFW) regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation" (California Code of Regulations, Title 14, Section 1.72). The jurisdiction of CDFW may include areas in or near intermittent streams, ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams that are indicated on USGS maps, watercourses that may contain subsurface flows, or within the flood plain of a water body. CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW limits of jurisdiction typically include the maximum extents of the uppermost bank-to-bank distance and/or the outermost extent of riparian vegetation dripline, whichever measurement is greater.

In a CDFW guidance of stream processes and forms in dryland watersheds (Vyverberg 2010), streams are identified as having one or more channels that may all be active or receive water only during some high flow event. Subordinate features, such as low flow channels, active channels, banks associated with secondary channels, floodplains, and stream-associated vegetation, may occur within the bounds of a single, larger channel. The water course is defined

by the topography or elevations of land that confine a stream to a definite course when its waters rise to their highest level. A watercourse is defined as a stream with boundaries defined by the maximal extent or expression on the landscape even though flow may otherwise be intermittent or ephemeral.

Artificial waterways such as ditches (including roadside ditches), canals, aqueducts, irrigation ditches, and other artificially created water conveyance systems also may be under the jurisdiction of CDFW. CDFW may claim jurisdiction over these features based on the presence of habitat characteristics suitable to support aquatic life, riparian vegetation, and/or stream-dependent terrestrial wildlife. As with natural waterways, the limit of CDFW jurisdiction of artificial waterways includes the uppermost bank-to-bank distance and/or the outermost extent of riparian vegetation dripline, whichever measurement is greater.

CDFW does not have jurisdiction over wetlands but has jurisdiction to protect against a net loss of wetlands. CDFW supports the wetland criteria recognized by USFWS; one or more indicators of wetland conditions must exist for wetlands conditions to be considered present. The following is the USFWS accepted definition of a wetland:

> Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the lands supports hydrophytes, (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated withwater or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).

In A Clarification of the U.S. Fish and Wildlife Service's Wetland Definition (Tiner 1989), the USFWS definition was further clarified "that in order for any area to be classified as wetland by the Service, the area must be periodically saturated or covered by shallow water, whether wetland vegetation and/or hydric soils are present or not; this hydrologic requirement is addressed in the first sentence of the definition." When considering whether an action would result in a net loss of wetlands, CDFW will extend jurisdiction to USFWS-defined wetland conditions where such conditions exist within the riparian vegetation that is associated with a stream or lake and does not depend on whether those features meet the three-parameter USACE methodology of wetland determination. If impacts to wetlands under the jurisdiction of CDFW are unavoidable, a mitigation plan will be implemented in coordination with CDFW to support the CDFW policy of "no net loss" of wetland habitat.

Appendix D – Tables

Table 1. Species Observed On-Site

Scientific Name	Common Name	Family	Status	Other Notes (Density, etc)
Plants				
Yucca schidigera	Mojave yucca	Agavaceae	CDNPA	~0.1/acre
Ambrosia salsola	Cheesebush	Asteracaea		
Bebbia juncea	Sweetbush	Asteracaea		Only observed in desert wash.
Dicoria canescens	Desert twinbugs	Asteracaea		
Encelia farinosa	Brittlebrush	Asteracaea		
Amsinckia tessellata	Fiddleneck	Boraginaceae		
Phacelia crenulata	Crenulate-leaved phacelia	Boraginaceae		
Lepidium fremontii	Desert pepper grass	Brassicaceae		
Cylindropuntia echinocarpa	Silver cholla	Cactaceae	CDNPA	
Cylindropuntia ramosissima	Pencil cholla	Cactaceae	CDNPA	
Echinocactus polycephalus	Clustered barrel cactus	Cactaceae	CDNPA	
Echinocereus engelmannii	Engleman's hedgehog cactus	Cactaceae	CDNPA	
Ferocactus cylindraceus	Barrel cactus	Cactaceae	CDNPA	~10/acre. Evenly spread out.
Mammillaria tetrancistra	Spiny fishhook cactus	Cactaceae	CDNPA	
Opuntia basilaris	Beavertail	Cactaceae	CDNPA	
Marah spp.	Wild Cucumber	Cucurbitaceae		Assoc. with desert woodrat midden.
Chamaesyce albomarginata	Rattlesnake weed	Euphorbiaceae		
Dalea mollissima	Downy dalea	Fabaceae		
Psorothamnus spinosus	Smoketree	Fabaceae	CDNPA, SBCDC	
Senegalia greggii	Catclaw acacia	Fabaceae		
Phacelia crenulata	Notch leaved phacelia	Hydrophyllaceae		
Krameria erecta	Ratany	Krameriaceae		Only observed in washes.
Salvia columbariae	Chia sage	Lamiaceae		Only observed in washes.
Chylisimia brevipes	Desert primrose	Onagraceae		
Bromus madritensis	Foxtail chess	Poaceae	Invasive; Non-Native	
Schismus arabicus	Mediterranean grass	Poaceae	Invasive; Non-Native	

Scientific Name	Common Name	Family	Status	Other Notes (Density, etc)
Loeseliastrum matthewsii	Desert calico	Polemoniaceae		
Chorizanthe brevicornu	Brittle chorizanthe	Polygonaceae		
Chorizanthe rigida	Rigid chorizanthe	Polygonaceae		
Eriogonum deflexum	Skeleton weed	Polygonaceae		Only observed in disturbed habitat.
Eriogonum fasciculatum	Buckwheat	Polygonaceae		
Eriogonum inflatum	Desert trumpet	Polygonaceae		
Lycium andersonii	Anderson's desert thorn	Solanaceae		
Physalis crassifolia	Thick leaved ground cherry	Solanaceae		
Phoradendron californicum	California mesquite mistletoe	Visaceae		Only observed in smoke trees.
Larrea tridentata	Creosote bush	Zygophyllaceae		No protected circles observed.

Animals

Scientific Name	Common Name	Family	Group	Status
Aspidoscelis tigris	tiger whiptail	Teiidae	Reptile	No status
Dipsosaurus dorsalis	desert iguana	Iguanidae	Reptile	No status
Sauromalus ater	common chuckwalla	Iguanidae	Reptile	No status
Uta stansburiana	common side-blotched lizard	Phyrosonomatidae	Reptile	No status
Gopherus agassizii	Mojave DETO	Testudinidae	Reptile	FT, ST
Callisaurus draconoides	zebra-tailed lizard	Phyronosomatidae	Reptile	No status
Zenaida macroura	Mourning Dove	Columbidae	Bird	No status
Cathartes aura	Turkey Vulture	Cathartidae	Bird	No status
Corvus corax	Common Raven	Corvidae	Bird	No status
Eremophila alpestris	Horned Lark	Aluadidae	Bird	No status
Salpinctes obsoletus	Rock Wren	Troglodytidae	Bird	No status
Mimus polyglottos	Northern Mockingbird	Mimidae	Bird	No status
Myiarchus cinerascens	Ash-throated Flycatcher	Tyrannidae	Bird	No status
Amphispiza bilineata	Black-throated Sparrow	Passerellidae	Bird	No status
Ammospermophilus leucurus	white-tailed antelope squirrel	Sciuridae	Mammal	No status
Vulpes macrotis arsipus	desert kit fox	Canidae	Mammal	No status
Equus asinus	wild burro	Equidae	Mammal	No status

Table 2 – CNDDB Potential to Occur for the *Fenner, Fenner Spring, Little Piute Mountains, and Essex* Quadrangles

Scientific Name	Common Name	Federal/State Status	Other Status	Habitat	Potential to Occur
Anaxyrus canorus	Yosemite toad	Threatened, None	G2, S2, CDFW-SSC	Vicinity of wet meadows in central High Sierra, 6,400 to 11,300 feet in elevation. Primarily montane wet meadows; also in seasonal ponds associated with lodgepole pine and subalpine conifer forest.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.
Claytonia megarhiza	fell-fields claytonia	None, None	G5, S2, 2B.3	Alpine boulder and rock field, subalpine coniferous forest. In the crevices between rocks, rocky or gravelly soil. 2560-3505 m.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.
Falco mexicanus	prairie falcon	None, None	G5, S4, CDFW-WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores. Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.
Gopherus agassizii	desert tortoise	Threatened, Threatened	G3, S2S3		Suitable habitat for this species does occur on site. As such, **pre-construction** surveys are recommended.

Scientific Name	Common Name	Federal/State Status	Other Status	Habitat	Potential to Occur
Gulo gulo	wolverine	Proposed Threatened, Threatened	G4, S1, CDFW-FP	Found in the north coast mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats. Needs water source. Uses caves, logs, burrows for cover and den area. Hunts in more open areas. Can travel long distances.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.
Lupinus gracilentus	slender lupine	None, None	G3, S3, 1B.3	Subalpine coniferous forest. Semi-moist shaded areas. 2380-2895 m.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.
Ovis canadensis nelsoni	desert bighorn sheep	None, None	G4T4, S3, CDFW-FP	Widely distributed from the White Mtns in Mono Co. to the Chocolate Mts in Imperial Co. Open, rocky, steep areas with available water and herbaceous forage.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.
Pellaea truncata	spiny cliff-brake	None, None	G5, S3, 2B.3	Pinyon and juniper woodland. Granitic boulders and fissures in granite cliffs, also in volcanic or sandy limestone soils. 1215-1920 m.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.
Rana sierrae	Sierra Nevada yellow-legged frog	Endangered, Threatened	G1, S2, CDFW-WL	Always encountered within a few feet of water. Tadpoles may require 2 - 4 yrs to complete their aquatic development.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.

Scientific Name	Common Name	Federal/State Status	Other Status	Habitat	Potential to Occur
Taxidea taxus	American badger	None, None	G5, S3, CDFW-SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Suitable habitat for this species does occur on site. As such, **pre-construction** surveys are recommended.
Toxostoma lecontei	Le Conte's thrasher	None, None	G4, S3, CDFW-SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	Suitable habitat for this species does not occur on site. As such, this species is considered **absent** from the Project site.

Coding and Terms

E = Endangered T = Threatened C = Candidate FP = Fully Protected SSC = Species of Special Concern R = Rare

State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats. Raptor and owls are protected under section 3502.5 of the California Fish and Game code: "It is unlawful to take, possess or destroy any birds in the orders Falconiformes or Strigiformes or to take, possess or destroy the nest or eggs of any such bird."

State Fully Protected: The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Global Rankings (Species or Natural Community Level):

G1 = Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 = Imperiled – At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3 = Vulnerable – At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4 = Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 = Secure – Common; widespread and abundant.
? = Uncertainty in the exact status of an element (could move up or down one direction from current rank)

Subspecies Level: Taxa which are subspecies or varieties receive a taxon rank (T-rank**)** attached to their G-rank. Where the G-rank reflects the condition of the entire species, the T-rank reflects the global situation of just the subspecies. For example: the Point Reyes mountain beaver, *Aplodontia rufa* ssp. *phaea* is ranked G5T2. The G-rank refers to the whole species range i.e., *Aplodontia rufa.* The T-rank refers only to the global condition of ssp. *phaea*.

State Ranking:

S1 = Critically Imperiled – Critically imperiled in the State because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.
S2 = Imperiled – Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the State.
S3 = Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the State.
S4 = Apparently Secure – Uncommon but not rare in the State; some cause for long-term concern due to declines or other factors.
S5 = Secure – Common, widespread, and abundant in the State.

California Rare Plant Rankings (CNPS List):

1A = Plants presumed extirpated in California and either rare or extinct elsewhere.
1B = Plants rare, threatened, or endangered in California and elsewhere.
2A = Plants presumed extirpated in California, but common elsewhere.
2B = Plants rare, threatened, or endangered in California, but more common elsewhere.
3 = Plants about which more information is needed; a review list.
4 = Plants of limited distribution; a watch list.

Threat Ranks:

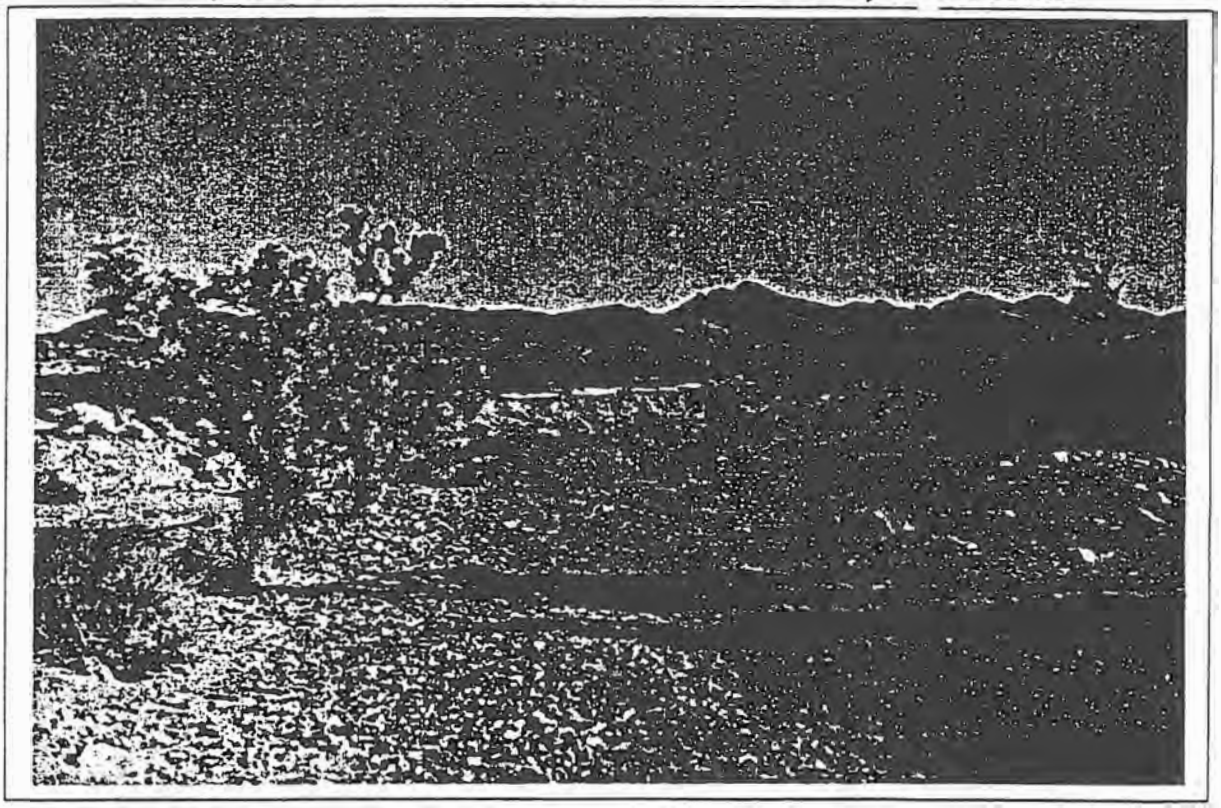
.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Appendix 2

Revegetation Plan
for the Yeager Construction
Essex Sand and Gravel Pit

VHBC, Incorporated

Revegetation Plan for the E. L. Yeager Construction Sand and Gravel Pit Located 5.5 Miles Northeast of Essex, California



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October 29, 1993

Revegetation Plan for the Proposed E. L. Yeager Construction Mine located northeast of Essex, California

The following revegetation plan was developed by Victor Horchar (Senior biologist, VHBC) with the assistance of Mick Reed (Botanist, Arizona-Sonora Desert Museum). Additionally, data from a recent revegetation plan developed by Victor Horchar, Mick Reed, and Ken McMullen (BLM botanist in 1992) was used during the development of this plan. The following plan details the timing and extent of the revegetation plan necessary for the successful reclamation of the 50 acre project site (Figure 1). This plan addresses four critical revegetation issues: soil stabilization, transplantation, erosion control, and monitoring.

The mining plan will be conducted in several phases, and hence revegetation will be completed subsequent to each mining phase. Each phase of the revegetation effort will concentrate on the removal, relocation, and final transplantation of target species (cactus, yucca, and cholla) in the area from which they originally came. Hence, the procedure described below will be repeated for each phase of the mining operation. The goal is to reclaim each phase of the site as soon as it is no longer being used to mine sand and gravel.

Target Species: Cacti, Yucca, and Cholla

1. A temporary plant relocation ("nursery") area measuring 100 x 50' will be created near the southeastern portion of the project area, away from all mining operations (Figure 1).

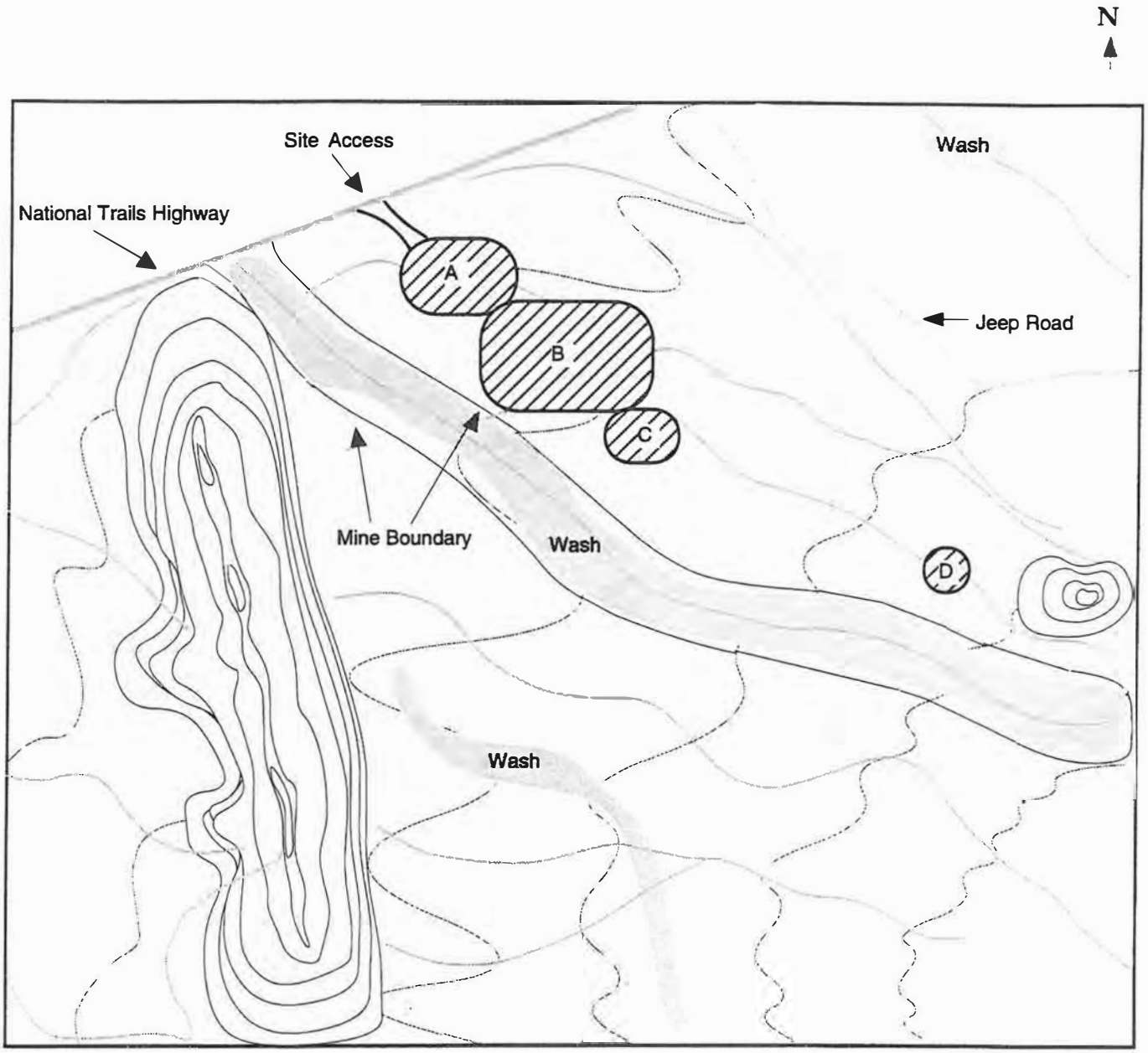
2. The location of each cactus, yucca, and cholla (target species) within the proposed mine phase will be determined and mapped. The orientation, size, health, and distance to the nearest conspecific of each target species will then be recorded. The northern side of each target species will then be marked using surveyors tape for future transplantation reference and the minimum size of the root ball of each species will then be determined (18" around each species).

3. Transplantation holes will be excavated in the "nursery" area based on the number of target species being transplanted and the root ball size of each species. Each hole and the necessary backfill will be covered by a fine layer of sulfur to reduce the potential for infection to the transplanted flora. Likewise, each hole will contain Miracle-Gro fertilizer to aid in the transplantation process.

4. Support stakes will be placed over each hole so that they can bear the weight of the body of each target species (Figure 2). The support stakes will prevent the body of each target species from crushing its own root ball.

FIGURE 1.0

E. L. Yeager Construction
Proposed Essex Mine Pit

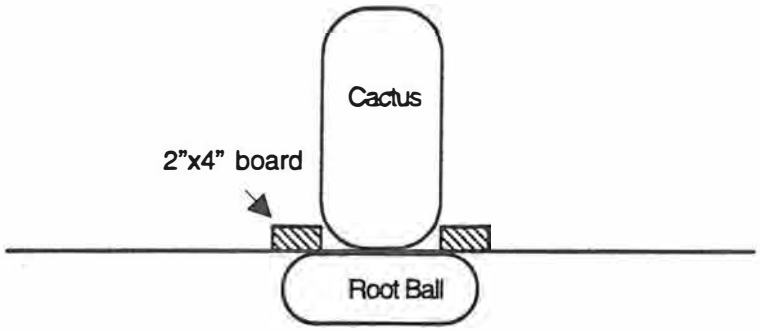


A = 5 acre A. C. Plant
B = 10 acre Screening Plant
C = 2 acre Overburden Stockpile
D = 100′ x 50′ "Nursery"

Mine Site Size = 32 acres
Processing areas = 17 acres
Nursery < 1 acre

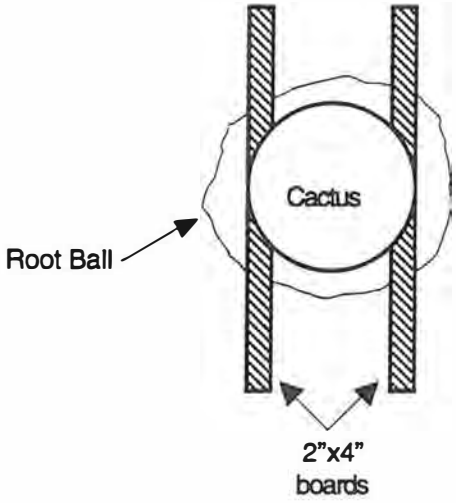
FIGURE 2

A



SIDE VIEW

B



TOP VIEW

A: Side view of a cactus resting on 2"x4" boards after transplantation to "nursery" area.

B: Top view of a cactus resting on 2"x4" boards and relieving unnecessary pressure on the root ball.

5. Each target species will be carefully excavated by hand in the mining area. The root ball and any open wounds in the plant will be covered with powdered sulfur to prevent infections. Each excavated species will be carefully transported to the "nursery" area and placed in an appropriately sized hole. The body of each species will be situated so that it rests primarily on the support stakes present over each hole. Likewise, the original orientation of each species will be replicated.

6. An artificial "nurse plant" will be placed on each transplanted target species by loosely tying the branches of recently excavated creosote or smoke tree to the sunny side of each target species. As the target species acclimates to the new conditions, the artificial "nurse plant" will slowly fall off of the target species, simulating the natural dying of the nurse plant (Figure 3).

7. Three weeks after the target species are transplanted, the "nursery" will be watered by a water truck. Watering will then take place on a monthly basis. The watering will be monitored by a biologist, during which time the health of each transplanted target species will be determined. Signs of poor health may include distinct color changes, bum spots, signs of herbivory, open wounds that have not healed since transplantation, and/or tilting away from the original vertical transplant position.

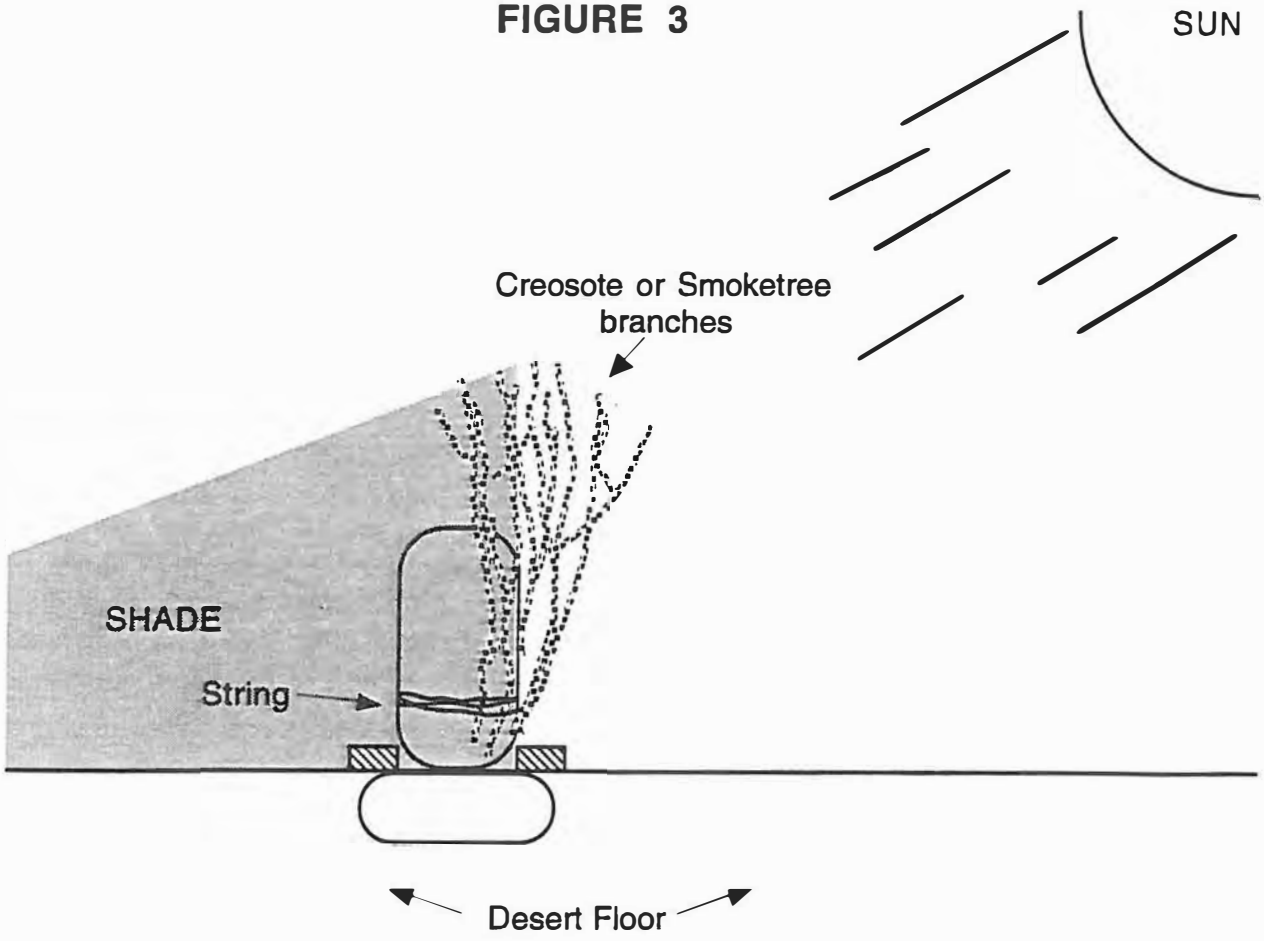
   If any sign of health problems arise, corrective measures will be taken where prudent: uprighting any titled plants, placing powdered sulfur on open wounds, attaching creosote or smoketree limbs on the target species to provide cover over bum spots and discolored areas, placing #10 chicken wire around the target species to stop herbivory, etc. In cases where health problems require further work to resolve, the botanical specialists at the Arizona-Sonora Desert Museum will be contacted for advice.

8. The target species in the "nursery" area will be monitored 6 months after the transplanting of plants to the "nursery" and again 12 months later. Monitoring will take place once each year over a five year period until the mine phase is completed and reclamation commences.

9. When the mine phase is completed and is ready for reclamation, the target species in the "nursery" area will be transplanted into the reclaimed area. These species will be transplanted in the same locations from which they originally came, using the techniques described above. These species will be monitored according to the schedule listed above (in number 8).

10. We have set a performance standard of 80% success. If the performance standard falls below 80%, buds from the target species will be propagated in the Cal. State Fullerton greenhouse and transplanted onto the site to replace the target species that die.

FIGURE 3


SUN
Creosote or Smoketree
branches
SHADE
String
Desert Floor

General Revegetation

1. In all areas where digging will occur, the top 6" - 12" of soil will be removed and set aside for future use in the revegetation process. This soil will be covered by a thin layer of materials from the mining process (gravel, rocks) to protect it from erosion while it is set aside. This soil layer contains the seed bank from which some of the revegetation will be accomplished.

2. The soil will be spread over the pit area of each phase being reclaimed. A layer of gravel and rocks will then be spread over the newly spread soil. The gravel and rocks will prevent erosion and will serve as micro-habitat catch basins for airborne organic material (which will serve as fertilizer). Additionally, the gravel and rocks will serve to catch and protect airborne seeds that land on the site naturally, and will facilitate revegetation by serving as energy dissipators during wet periods (preventing erosion). The roots from the vegetation that will grow in the pit area will aid in stabilizing the soil.

3. Each revegetated phase will be monitored once per year over a five year period.

An annual report will be filed with E. L. Yeager Construction detailing the progress of the revegetation effort. Copies of annual reports will be sent to the environmental staff of the County of San Bernardino (Andrew Rush).

Please address any questions or comments about this revegetation plan to:

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