

**AMENDED RECLAMATION PLAN
FOR
BAXTER QUARRY**

CA Mine ID # 91-36-0036

San Bernardino County
Reclamation Plan # 90M-02

Submitted To:
SAN BERNARDINO COUNTY
Planning Department
385 North Arrowhead Avenue
San Bernardino, California 92415

Prepared By:

CALPORTLAND[®]
CALPORTLAND COMPANY
2025 E. Financial Way
Glendora, CA 91741-4692

and

LILBURN CORPORATION
1905 Business Center Drive
San Bernardino, California 92408

April 2022

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APPENDICES

- A Biological Resources Assessment, ELMT Consulting, Inc., February 2022
- B Revegetation Plan, Jericho Systems, Inc., February 2020
- C Slope Stability Investigation Report, Terracon, May 2021
- D Baxter Quarry Record of Survey, CASC, October 2021

MAP SHEETS (attached)

- 1 CalPortland Baxter Quarry Properties and Cover Sheet
- 2 Baxter Quarry Mine Plan
- 3 Baxter Quarry Reclamation Plan
- 4 Baxter Quarry Cross Sections

PROFESSIONAL CERTIFICATIONS

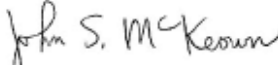
Slope Stability Investigation (Terracon Consultants) (Appendix C)

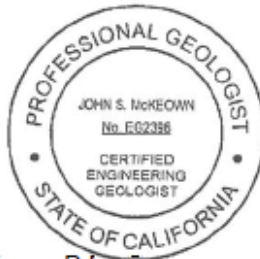
We have completed the Slope Stability Investigation services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PCB215002 dated January 26, 2021. This report presents the findings of the data review, geologic mapping, field testing, and structural evaluation, and provides recommendations concerning suitable slope angles and heights for reclamation consistent with Surface Mining and Reclamation Act (SMARA) requirements.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon Consultants, Inc.


John S. McKeown, C.E.G. 2396
Senior Geologist




Jay J. Martin, C.E.G. 1529
Principal Geologist



Subject Matter Expert: Brian J. Williams, P.E., P.G.

Baxter Quarry Map Sheets #1 to #4

California Professional Engineer David Hattaway (No. 027799) reviewed and signed/stamped Map Sheets #1 to #4. (See Maps #1 to #4 as attachments)

Record of Survey – CASC Engineering and Consulting (Appendix D)

SURVEYOR'S STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT, AT THE REQUEST OF CALIFORNIA PORTLAND CEMENT COMPANY 2021.

DATE 10/28/2021


RICHARD S FURLONG, P.L.S. 8422

RECORD OF SURVEY WAS SUBMITTED FOR REVIEW TO THE COUNTY OF SAN BERNARDINO ON 5/28/2021



**AMENDED
RECLAMATION PLAN #90M-02
FOR BAXTER QUARRY
CalPortland Company
CA Mine ID # 91-36-0036**

1.0 MINE OPERATIONS

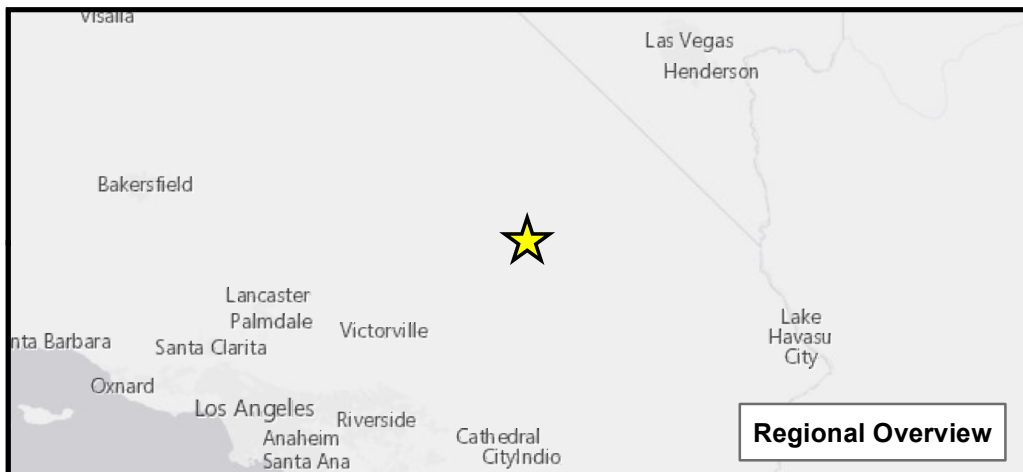
CalPortland Company (CalPortland) operates the Baxter Quarry (CA Mine ID # 91-36-0036), an existing iron ore mining and processing facility located in the County of San Bernardino (County). CalPortland and its predecessors have mined the Baxter Quarry (project site, quarry) since 1938, before the County enacted applicable use permit requirements. The County approved operations in 1973 and accordingly, has recognized the quarry as “vested” (i.e., a legal nonconforming use), and not subject to either the Surface Mining and Reclamation Act (Pub. Resources Code, § 2710 *et seq.* [SMARA]) or the County’s use permit requirements.

CalPortland seeks to amend its existing reclamation plan, approved by the County in 1990 to include the reclamation of additional iron ore reserves within the vested quarry (Amended Plan). The Baxter Quarry supplies iron ore for CalPortland’s cement plants and to other markets. The local source of iron ore reduces the need to import iron ore from more distant sources, thus reducing environmental impacts and transportation costs.

The Quarry is located approximately 19 miles southwest of the Community of Baker and 40 miles east-northeast of Barstow within approximately 452 acres of private lands mostly in Section 12, Township 11 North, Range 6 East, San Bernardino Base and Meridian (SBBM). The Amended Plan area totals 263 acres within Assessor Parcel Numbers (APNs) 542-201-02 to 10; 14, 15, 16, 18, 35 & 36. The site is accessed from Interstate 15 (I-15) south on Basin Road for 3.5 miles directly to the site. Refer to Figures 1 and 2 for a Location Map and Vicinity Map.

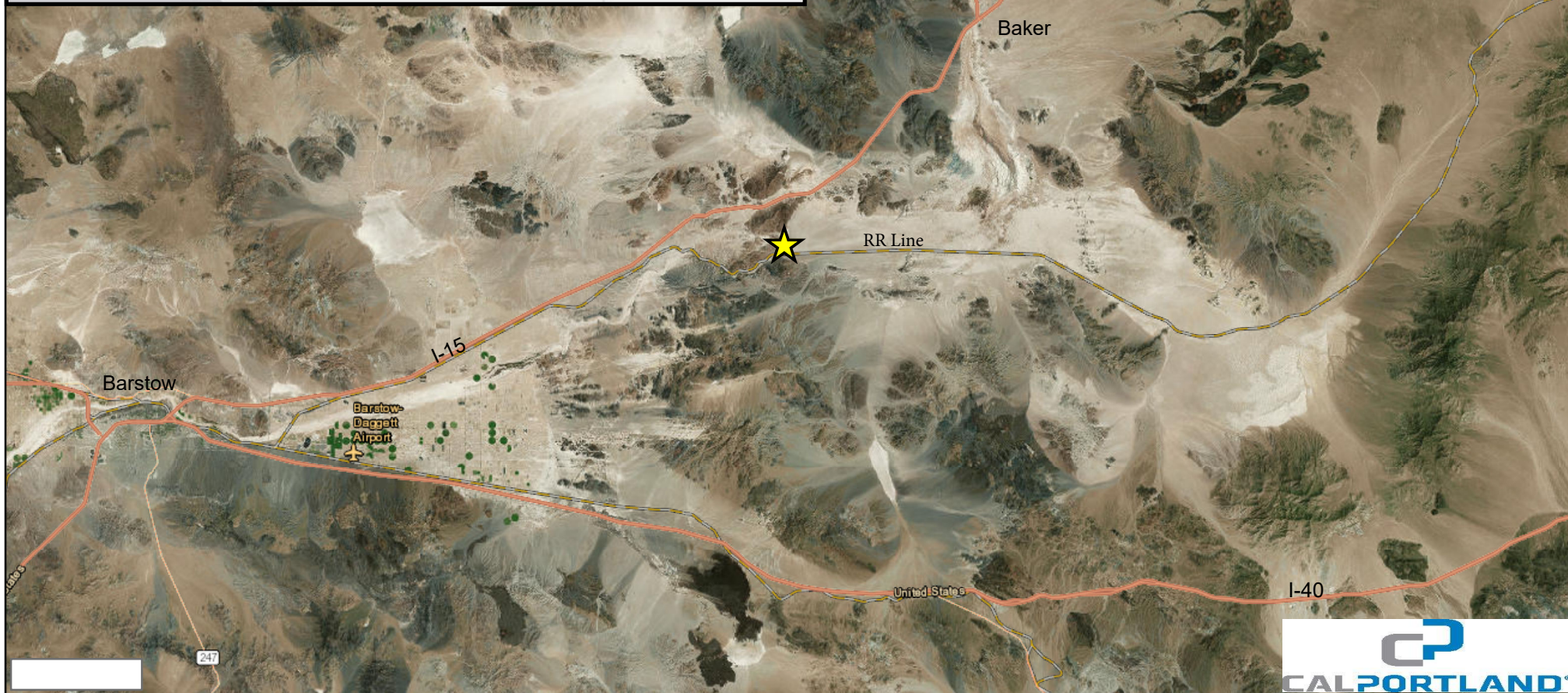
The existing Reclamation Plan for the Baxter Quarry (Reclamation Plan #90M-02) was approved by the County in 1990 and covers approximately 130 acres of the vested 452-acre property. The Quarry is located on patented (private) lands owned by CalPortland. The existing quarry or West Deposit (19 acres), overburden stockpile, staging area (stockpiled ore), and on-site access roads consist of approximately 49 disturbed acres. The proposed amendment will include an additional approximately 69 acres for a total disturbance area on approximately 118 acres to be reclaimed. Surrounding land uses include the vacant public desert lands administered by the Bureau of Land Management (BLM) to the east, south, and north. The National Trails National Monument established in 2016, is adjacent to the site on the west and northwest. The main railroad line from Los Angeles to Las Vegas is located along the Mojave River to the south. There are no adjacent or nearby residences within 6 miles.

Existing elevations at the site range from 1,600 feet above mean sea level (amsl) in the east central areas to a low of approximately 1,200 feet amsl on the east where the site flattens into the Mojave River Wash plain. Most the western half of the site is naturally around 1,400 feet amsl except for the existing West Deposit mined to a depth of 1,200 feet amsl and the overburden



Legend

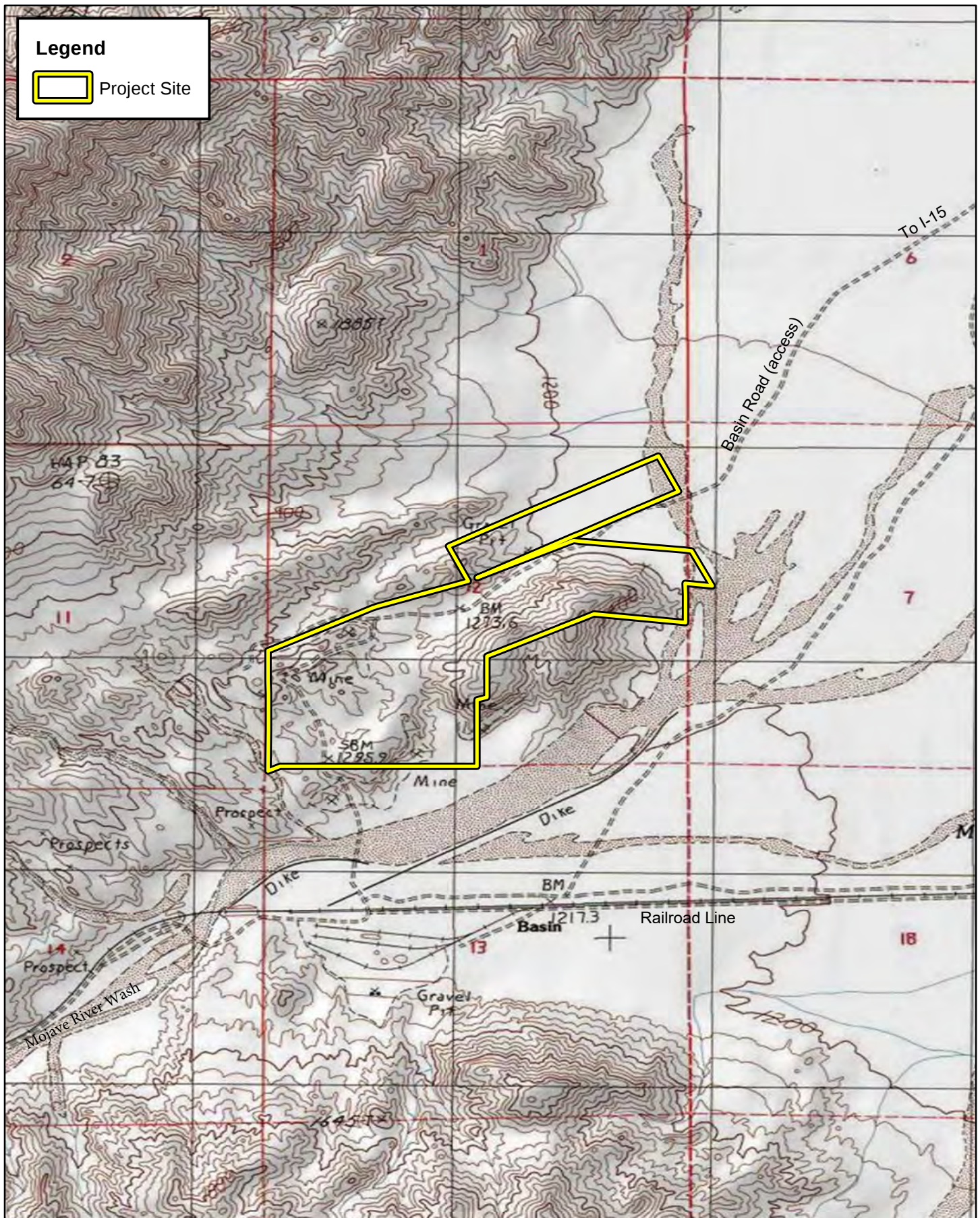
★ Site Location



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA,



Baxter Quarry Amended Reclamation Plan	Figure 1 - Location Map Baxter Quarry
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stockpile which is about 1,450 feet amsl in height. Water for dust control is supplied to the site by water truck from private wells or from the Baker County Service Area. Existing operations will continue consistent with existing use; therefore, there will be no substantial change in the amount of water used. The plant community within the boundary of the project site and adjacent open space areas is mostly creosote desert scrub.

The existing West Deposit and the planned two additional surface quarries are estimated to contain approximately three (3) million short tons (2.7 short tons/cubic yard) of iron ore. In approximately 15 to 20 years depending on iron ore demand, underground mining will be initiated from the floor in the Lillian Belle Deposit to access approximately 4 million tons of iron ore resources in the Central Deposit.

It is anticipated that the site will be mined at up to a maximum of 300,000 tons/year; with an average production rate of approximately 150,000 tons annually, subject to market demand, which will provide adequate reserves for up to 50 years (end of year 2071). The Plan amendment proposes to continue mining within the existing West Deposit. Excavations will phase into the Lillian Belle and East Deposits in the final stages of the West Deposit. Thereafter, underground mining will be developed through a portal in the Lillian Belle pit floor to access the Central Deposit to its west. Table 1 lists the existing and planned operational areas for the deposits, overburden stockpile, topsoil, staging/operational areas, and roads. Refer to Figure 3 and Sheet 2 for the Mine Plan.

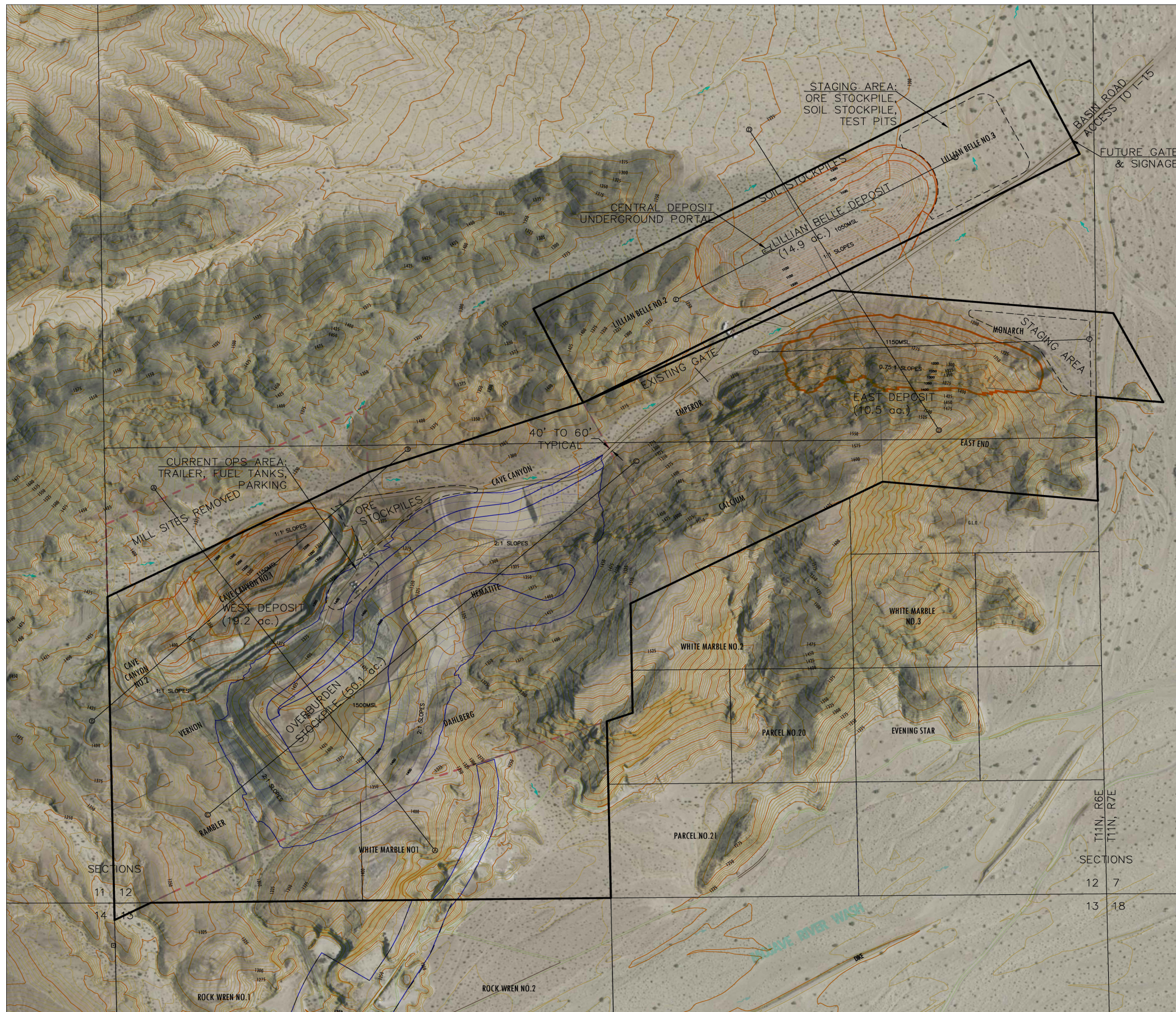
Table 1
Existing and Planned Operational Areas
Amended Reclamation Plan
Baxter Quarry

Deposits and Other Areas	Existing Disturbance (acres)	Proposed New Areas (acres)	Total Disturbance Areas (acres)
West	19.2	0	19.2
Lillian Belle	0	14.9	14.9
East	0	10.5	10.5
Surface Quarries Subtotal	19.2	25.4	44.6
Central (underground)	0	2 (portal within Lillian Belle)	2 (portal within Lillian Belle)
Overburden Stockpile	26.0	24.0	50
Staging/Operations Areas	2	16.3	18.3
Topsoil Stockpiles ¹	0	3(6)	3(6)
Test Plots ¹	0	(1)	(1)
On-Site Access Road	2	0	2
Totals	49.2	68.7	117.9

Source: CalPortland, Lilburn 2022

¹ Within staging areas

Note: Totals may be slightly different due to rounding.



**CALPORTLAND COMPANY
BAXTER QUARRY
MINE NOTES**

Mine: Baxter Quarry (90M-02)

CA MINE ID #: 91-36-0023

Mineral: Iron Ore

Mine Operator: CalPortland Company
2025 E. Financial Way
Glendora, CA 91714
(626) 691-1966
dhaggard@calportland.com

Applicant: Same as Operator

Owner of Mineral Rights: Same as Owner

Representative: Desirea Haggard
CalPortland Company
2025 E. Financial Way
Glendora, CA 91714
(626) 691-1966
dhaggard@calportland.com

Civil Engineer: Same as Operator

Map Preparer: CalPortland Company & Lilburn Corporation

Geologists: CalPortland - Ed Harrison
John S. McKeown, E.G. Senior Geologist
Terracon Consultants
1355 E. Cooley Drive
Colton, CA 92324
(909) 824-7311

Date of Map: August 2021

Utilities	
Water:	Off-site water purveyor and/or private well
Sewage disposal:	Portable toilets
Electric:	Not proposed
Gas:	Not proposed
Telephone:	Mobile phones

Land Use Category / Zoning (Countywide Policy Plan November 2020):

Project Site:
Land Use Categories (LUC) - Resource/Land Management (RLM)
Zoning - Resource Conservation (RC)

Surrounding Uses (LUC / Zoning):

Legal Description:

APNs: 542-201-02 to 10; 14, 15, 16, 18, 35 & 36
Reclamation Plan Boundary Area: 262.7 acres
Area to be Impacted and Reclaimed: 117.9 acres

Portions of Sections 12; Township 11 North, Range 6 East and small portion of Section 7, T11N, R7E, SBBM, County of San Bernardino, State of California.

Signage/Public Safety:

There is a simple identification sign along Basin Road. Access on Basin Road is restricted to employees and authorized personnel. The entrance is gated with appropriate warning signs that notify the public that the mining area has restricted access and that the roads are not open to the public. During non-operating hours, gates are closed and locked. Other potential access roads are blocked or closed at the project boundary and have signs informing the public that the roads are closed to public access.

Quarry areas have warning signs, roads not used will be blocked or closed, and safety berms six feet high and 12 feet wide will be constructed along the quarry rims where there is potential access.

Parking:

Plant and Tree Protection:
Per the Desert Native plants Act and County Code 88.01.060, preconstruction surveys will determine the number and viability of each plant to survive removal and transplanting to an area ready for reclamation for any rare plants. Note that there are no protected CESA listed candidate species western Joshua trees (*Yucca brevifolia*) onsite nor is the project site within the range of this species per the species petition and notification.

PROFESSIONAL CERTIFICATIONS

Slope Stability Investigation (Terracon Consultants) (Appendix C)

We have completed the Slope Stability Investigation services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PCB215002 dated January 26, 2021. This report presents the findings of the data review, geologic mapping, field testing, and structural evaluation, and provides recommendations concerning suitable slope angles and heights for reclamation consistent with Surface Mining and Reclamation Act (SMARA) requirements.

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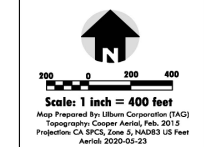
Subject Matter Expert: Brian J. Williams, P.E., P.G.

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DATE 10/28/2021

RICHARD S FURLONG, P.L.S. 8422
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THE COUNTY OF SAN BERNARDINO ON 5/28/2021

[illegible]

LEGEND

- Revised Reclamation Plan Boundary (262.7 ac.)
- Proposed Quarry Limits
- Approved Reclamation Plan Boundary (130.0 ac.)
- Proposed Overburden Stockpile Limits
- Proposed Mining Contours
- Roads to Remain
- Existing Topography
- Parcel Lines

MINE PLAN

#	Title
1	Cover
2	Mine Plan
3	Reclamation Plan
4	Cross Sections and Details

Scale: 1"=400'

Date: 08/20/21

DGRN Sh22of4 Box-Mine Plan 2021b

Sheet **2** of **4**

This Amended Plan was prepared with the following objectives:

- To continue development of an existing iron ore resource pursuant to the State's and County's SMARA requirements;
- To provide iron ore from a local source to meet CalPortland's cement production needs and for other markets rather than importing material from more distant or out of state locations, resulting in decreased truck diesel fuel consumption and air pollutant emissions;
- Maintain all equipment in compliance with air quality regulations;
- Continue to implement dust control measures at active quarries, stockpile areas, and on roads per Mojave Desert Air Quality Management District (MDAQMD) regulations;
- To provide reclamation to impacted mining sites to reduce visual, biological, and safety impacts; and
- To reclaim the site for an open space end use.

Land Owner, Operator:

CalPortland Company
2025 E. Financial Way
Glendora, CA 91741-4692
(626) 691-1966 (office)

Representative:

CalPortland Company
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Glendora, CA 91741-4692
Desirea Haggard
(626) 691-1966 (office)
(626) 629-9366 (cell)
dhaggard@CalPortland.com

Reclamation Plan No.: 90M-02 (approved in 1990)

CA Mine ID #: 91-36-0036

County Wide Policy Plan Designations (November 2020)

Land Use Categories (LUC) – Resource/Land Management (RLM)
Zoning - Resource Conservation (RC)

Estimated Start Date: In operation

Estimated Operating Life: 50 years (or until December 31, 2072)

Estimated Mining Termination Date: December 31, 2072

Private Property Boundary Area: 452.1 acres

Reclamation Plan Boundary Area: 262.7 acres

Area to be Reclaimed: 117.9 acres

Estimated Reclamation Completion: December 31, 2077 (followed by revegetation monitoring until success criteria achieved)

Reclaimed End Uses: Open space

Land Holdings

CalPortland's contiguous private land holdings and those parcels that make up the reclamation plan boundary are listed below (refer to Figure 3 and Sheets 1 and 2). Table 2 lists the assessor's parcel number, area, and location. All parcels are within Section 12, Township 11 North, Range 6 East (T11N, R6E) SBBM except for a small eastern portion of APN 0542-201-02 which is within Section 7, T11N, R7E.

Mineral Resource Zoning

The California Division of Mines and Geology (CDMG) has designated the Baxter Quarry iron ore deposits as Mineral Resource Zone 2 status (MRZ-2) (*Mineral Land Classification of the Calmat Land Co. Baxter Iron/Carbonate Rock Deposit* (OFR 90-02), CA Dept. of Conservation, Division of Mines and Geology; San Bernardino County, California, 1990). MRZs are important planning designations as they recognize the significance and importance of mineral resources and mining in land use planning.

The on-site iron ore deposits are classified as follows:

MRZ-2A - (Areas where geologic data indicate significant measured or indicated resources are present). The East or Monarch and West or Cave Canyon iron ore bodies were given this classification based upon drill hole and assay data and geologic field evaluation which shows significant iron ore deposits exist.

MRZ-2b - (Areas where geologic information indicates that significant inferred resources are present). The Lillian Belle iron ore body was given this classification based upon limited drilling and assay data and geologic field evaluation.

Table 2
Baxter Quarry Reclamation Plan Boundary
on CalPortland's Privately-Held Land Holdings

Parcel Numbers	Area (acres)	Location: Sections within T11N, R6E
Existing Reclamation Plan Parcels		
0542-201-04	16.53	12
0542-201-05	20.66	12
0542-201-06	2.67	12
0542-201-07	17.22	12
0542-201-08	19.72	12
0542-201-14	20.66	12
0542-201-15	19.36	12
Existing Reclamation Plan Area¹	116.8	---
Planned New Areas		
0542-201-02	17.45	12; eastern portion in Section 7, T11N, R7E
0542-201-03	20.66	12
0542-201-09	18.44	12
0542-201-10	15.95	12
0542-201-16	7.79	12
0542-201-18	24.25	12
0542-201-35	20.66	12
0542-201-36	20.66	12
Planned New Areas	145.9	---
Total Amended Reclamation Plan Area	262.68	
0542-201-11	9.18	12
0542-201-12	10.0	12
0542-201-13	18.18	12
0542-201-19	9.23	12
0542-201-20	10.0	12
0542-201-21	20.0	12
0542-201-22	10.0	12
0542-201-24	80.0	13
0542-201-29	22.82	13
Parcel Areas outside Reclamation Plan Boundary	189.41	
Total Property Area	452.09	---

Sources: San Bernardino County APN information, 2021 & CASC Record of Survey,
Appendix D, May 2021. ¹ – Existing Reclamation Plan parcels minus two mill site claims.

1.1 MINING OPERATIONS

As discussed above, CalPortland will continue operations in the existing reclamation plan area but proposes to amend the current reclamation plan to accommodate reclamation of an additional 69 acres of vested lands. The project does not propose any change to CalPortland's existing vested mining operations including, for example, productions levels, mining systems or processes, and ultimate throughput, based on market demand. The Amended Plan proposes to continue mining within the existing West Deposit and excavations will phase into the Lillian Belle and East Deposits in the final stages of the West Deposit. Thereafter, underground mining will be developed through a portal in the Lillian Belle pit floor to access the Central Deposit to its west. The surface area, estimated iron ore reserves, the average ore and overburden estimated per year, and the estimated life of mine are listed for each deposit in Table 3 below.

Table 3
Estimated Deposits' Production and Areas
(through 2051 – Iron Ore Reserves)

Deposit	Surface Area (acres)	Iron Ore Reserves (million tons)	Annual Average Ore Excavated (tons)	Annual Average Waste Excavated (tons)	Estimated Years
West	19.2	2.0	150,000	50,000	7 - 10
Lillian Belle	14.9	0.5	150,000	50,000	3.5 - 5
East	10.5	0.5	150,000	50,000	3.5 - 5
Central (underground)	Portal within Lillian Belle Pit	4.0	150,000	varies	27 - 30
Total Iron Ore		7.0	150,000	50,000	40 - 50

Source: CalPortland 2022

Areas are rounded to the nearest tenth of an acre and tonnage to quarters. Totals may be slightly different due to rounding.

All tons are short tons. Mining in deposits will overlap during phase-in periods.

Maximum annual production could be up to 300,000 tpy per existing Plan.

The following activities will be conducted prior to opening new areas for mining and overburden stockpile development to limit disturbed areas to within the reclamation plan boundary and to facilitate ongoing and future reclamation and revegetation. Note that the West Deposit is completely disturbed with no soil available as it is only being mined to an additional 50 feet in depth.

- Excavation limits will be located and marked in the field;
- Specified plants per the California Desert Plant Protection Act if found on-site that can tolerate transplant will be salvaged to the degree possible and will be replanted on reclaimed land available for revegetation; (note that there are no western Joshua trees (*Yucca brevifolia*) onsite and the site is outside this species range); and

- Salvageable soils and/or growth media up to 0.5 feet to 1-foot typically will be placed in a separate identified topsoil stockpile(s) located north and south and in the staging area adjacent to the Lillian Belle Deposit which has a cover of alluvium. There are no new areas to be opened in the West Deposit and the East Deposit is a steep hillside with rock outcrops with minimal salvageable surface material. The soil stockpiles will be clearly marked and covered with larger material to limit wind and water erosion.

General Mining Operations

Surface mining operations consist of drilling and blasting, excavating by loader, and loading ore from the active quarry face directly into a track-mounted portable crushing and magnetic separator plant located and moved as needed within each pit. The crushed and magnetically separated iron ore is loaded onto 45-ton off-road haul trucks (typical) by a loader and transported to the adjacent ore stockpiles and loading area located to the east of the West Deposit, and in the future, adjacent to the to be developed Lillian Belle and East Deposits. where it is loaded into street-legal trucks for transport off-site. During underground mining, the ore will be conveyed out the portal to the portable crushing and magnetic separator plant located in the floor of the Lillian Belle Pit. Off-site truck loading and shipping will be conducted in the staging area to its east.

The separated overburden and waste rock is approximately 25% of excavated material. Surface alluvium overlying the Lillian Belle Deposit will be salvaged and stored in soil stockpiles in the staging area to its north, south, and east. Overburden will be loaded into off-highway 45-ton haul trucks (typical) and transported along interior haul roads to the overburden stockpile. The overburden stockpile is discussed in detail in Section 1.2.

Pit haul roads are typically 40 to 50 feet wide and grade is 10% or less depending on locations and conditions. All operational and reclaimed slopes will have an overall slope of 1H:1V or slightly more on the south slope of the East Deposit. The main access road is about 36 feet wide.

There are no changes proposed for annual maximum (300,000 tons/year) or average annual production (150,000 tons/year) with this amendment. Mining and processing operations will continue to produce an average of 500 tons/day of ore and 175 tons/day of overburden based on an annual average rate of 150,000 tons of ore and 50,000 tons of overburden on 250 to 300 annual operational days. Daily production will vary due to market demand and overburden ratio. The processing plant is separately permitted through the MDAQMD with a maximum throughput of 400 tons/hour and an annual throughput of nearly 1.5 million tons.

Approximately 5 employees typically work onsite in one shift with no nighttime operations planned.

West Deposit

The West Deposit consists of an oval-shaped pit totaling 19.2 acres. No surface expansion is planned, only an additional 50 feet of depth is proposed. The deposit is currently at a depth of 1,200 feet amsl. The planned depth is another two benches to a final floor elevation of 1,150 feet

amsl. The deposit is mined with 25-foot vertical cuts with a 21 to 25-foot horizontal bench (1 vertical:1 horizontal; 1V:1H). The “inter bench” is sloped at approximately 70° to 80°, which creates a bench off-set of approximately 4 feet for a horizontal bench of 21 feet (refer to Figure 3). Bench heights and widths may slightly vary with deposit geometry as determined in the field. The overall slope for operations and reclamation is approximately 45° or 1H:1V. See Figure 4 and Sheet 4 for detailed cross-sections of the three deposits.

Approximately 2 million tons of ore will be excavated over the next 7 to 10 years from this deposit.

Lillian Belle Deposit

The Lillian Belle Deposit has been drilled with some past mining operations. The site will be developed as an oval-shaped open pit on approximately 14.9 acres. The deposit will be mined to a depth of 150 to 175 feet with a pit floor of 1,050 feet amsl in 25-foot vertical cuts with a 21-foot horizontal bench. The “inter bench” is sloped at approximately 70° to 80°. Bench heights and widths may vary with deposit geometry as determined in the field. The overall slope for operations and reclamation is 45° or 1H:1V. Refer to Figure 4 for the Lillian Belle cross section and Sheet 4 for detailed cross-sections.

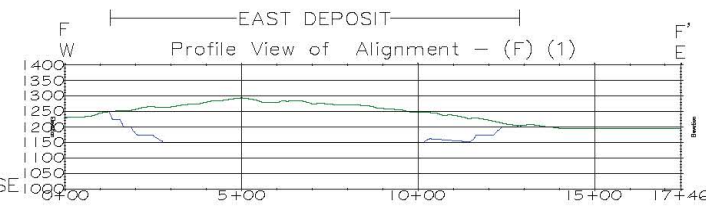
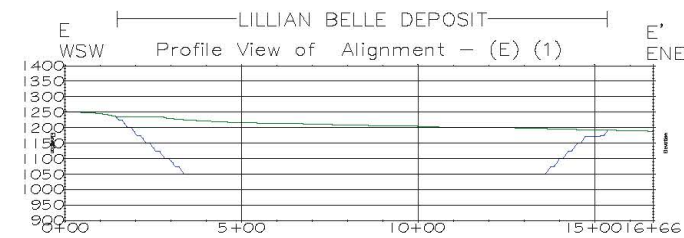
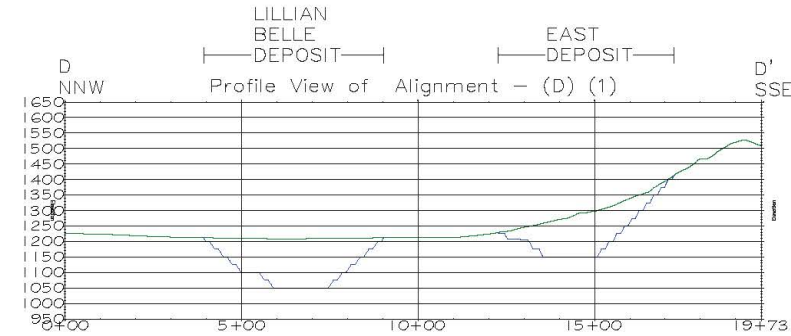
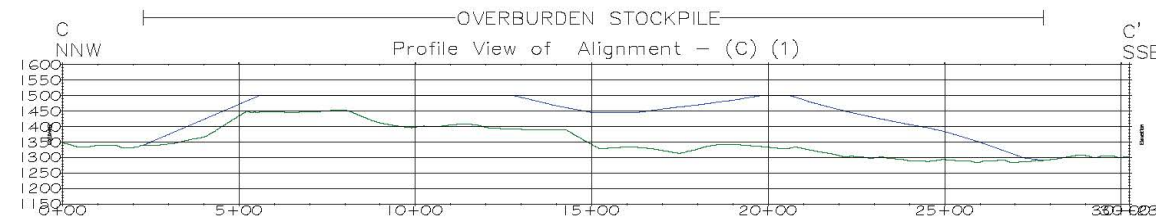
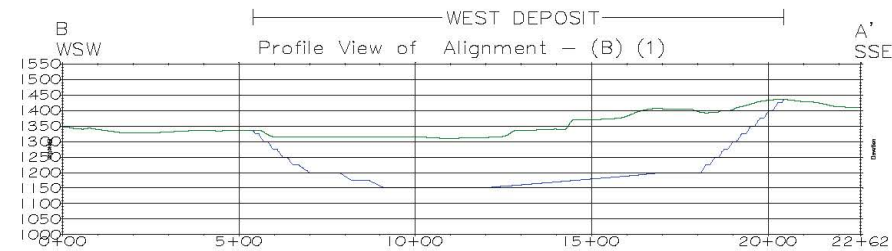
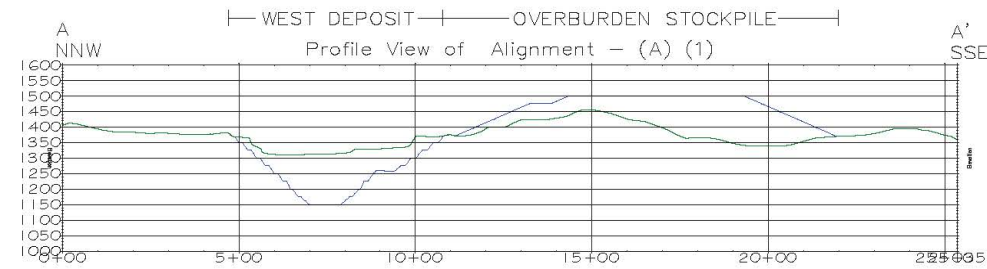
Approximately 0.5 million tons of ore will be excavated over a period of 3.5 to 5 years from this deposit.

East Deposit

The East Deposit has also been drilled with some past mining operations and will be developed as a hillside quarry on approximately 10.5 acres. The deposit will be mined to a depth of approximately 75 feet on the north to a floor elevation of 1,150 feet amsl in 25-foot vertical cuts with a 21-foot horizontal bench. The “inter bench” is sloped at approximately 70° to 80°. On the south, the existing ridge rises to 1,500 to 1,600 feet amsl. This ridge will be mined from the 1,400-foot amsl elevation northward to the pit floor for a depth of approximately 250 feet. This steeper south wall of the East Deposit area is planned to be mined at 55 degrees using 25-foot faces and 18-foot wide benches. Bench heights and widths may vary with deposit geometry as determined in the field. Refer to Figure 4 for the East Deposit cross section and Sheet 4 for detailed cross-sections. Approximately 0.5 million tons of ore will be excavated over a period of 3.5 to 5 years from this deposit.

Central Deposit (Underground)

CalPortland has evaluated the use of a Room and Pillar (R & P) underground mining method for the Central Deposit. The deposit is 300 feet below ground surface and can be accessed from the bottom of the adjacent Lillian Belle Deposit once excavated. The surrounding lands to the north of the Central Deposit are now part of the Mojave National Preserve, which has restricted the ability to mine this area with an open pit. In order to uncover the Central Deposit, a 300-foot highwall on the north of an open pit would need to be extended into the Preserve area.



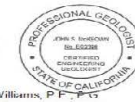
We have completed the Slope Stability Investigation services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PCB215002 dated January 26, 2021. This report presents the findings of the data review, geologic mapping, field testing, and structural evaluation, and provides recommendations concerning suitable slope angles and insights for reclamation consistent with Surface Mining and Reclamation Act (SMARA) requirements.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

John S. McKeown
Senior Geologist

Subject Matter Expert Brian J. Williams, P.E., P.G.

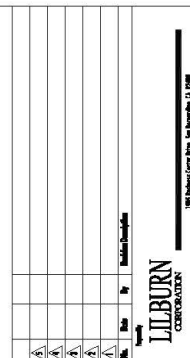
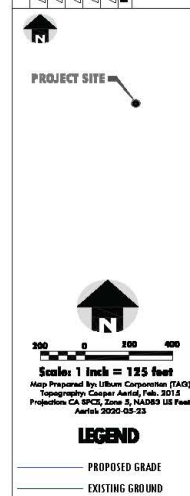


Jay J. Martin, C.E.G. 1529
Principal Geologist



CROSS SECTIONS AND DETAILS
Baxter Quarry - Amended Reclamation Plan
RECLAMATION PLAN No. 90M-02
CA Mine ID # 91-36-0023

SHEET INDEX
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CROSS SECTIONS
Baxter Quarry
Revised Reclamation Plan 90M-02
San Bernardino County, CA
FIGURE 4

The mine phasing is to first complete the West Deposit followed by the Lillian Belle and the East Deposits as described above. The Central Deposit would be accessed by a portal located in the west central pit floor of the Lillian Belle Deposit on an approximate 2-acre area. The entrance portal and underground staging area including ventilation fans and other underground mining facilities will be located here. Iron ore would be conveyed to the crusher and magnetic separator plant located east of the portal with product stockpiled in the staging area to the east. From there it will be loaded onto street-legal haul trucks for delivery to market.

Underground mining is regulated by the Federal Department of the Interior, Mine Safety and Health Administration (DOI MSHA) and is not part of SMARA except for surface disturbances related to the ongoing underground mining. All surface areas utilized during the underground mining phase will be reclaimed per the approved reclamation plan and SMARA. The portal will be closed per MSHA requirements and SMARA Regulations section 3713(b): "Prior to closure, all portals, shafts, tunnels, or other surface openings to underground workings shall be gated or otherwise protected from public entry in order to eliminate any threat to public safety and to preserve access for wildlife habitat." Final closure of the portal will be coordinated with MSHA and the County.

The finalized mine/excavation plan for the Central Deposit will be prepared by a Certified Professional Underground Mining Contractor. The plan will be monitored and regulated during mining by the Federal agency, MSHA. Surface subsidence from underground mining will not occur due to the depth of the deposit under the surface and the conservative pillar design to support open stopes. The preliminary underground R & P design leaves about 49% of the material in the ground for underground support pillars, hangingwall and footwall support pillars for each mining level, coupled with the 300 feet of depth to the deposit. With these support parameters used with the mine design, there will be no subsidence of the surface area above the underground operation.

Slope Stability

The *Slope Stability Investigation Report* prepared by Terracon May 2021 (see Appendix C for detailed assessment and background information) addressed slope stability in representative slopes for the existing and future quarries' reclamation and overburden stockpile. Slope stability calculations for feasibility of reclamation rock slope configurations and kinematic analysis of potential failure geometries in rock benches were performed for the project area pits and deepening of the existing West Deposit pit. The kinematic data include the measured geologic structures and pertinent data from site mapping. Global slope stability was evaluated along model sections representing the tallest and steepest proposed slopes with consideration of the major geologic units and structures as they potentially affect the wall-scale stability. The slope assessment is summarized below.

Geologic units within the amended reclamation area include stockpile fill, alluvium, recent wash deposits, talus, sand deposits, alluvial fan deposits, granitic bedrock, mixed metamorphic rocks including carbonates, and metamorphic breccia. Field work shows intrusive bodies of felsic (feldspar-rich) and mafic types within the metamorphic unit. Breccia derived from the metamorphic units that appear to overlie ore bodies is exposed in the West Deposit pit. The pit

area includes primarily alluvial cover within the Lillian Belle Deposit and carbonate rocks within the East Deposit footprint.

The presence of breccias in the ore-bearing units of the project area are the characteristic geologic structure. Breccias and associated shear/slide planes are extensively exposed in the existing pit and exhibit south-directed shearing. Slope stability calculations were performed for three representative rock types on slopes modeled as summarized in Table 4.

Table 4
Summary of Global Slope Stability Models

Mine Area	Overall Height (ft.)	Face Height (ft.)	Face Angle ¹	Bench Width (ft.)	Geologic Unit	Overall Slope Angle
Lillian Belle West slope	200	25	90°	25	MS schist	45
Lillian Belle Southeast slope	150 (35 alluvium 115 rock)	25	90°	25	Alluvium MS schist	35 alluvium 45 rock
East Deposit South slope	275 cut in rock 160 native in rock	25	90°	18	Carbonate	55 in cut 33 in native
West Deposit	275	25	90	25	MS breccia	45

¹ as modeled for this evaluation. Bench face angles at ~70 degrees are anticipated post reclamation. Consideration of the steeper face angle (90 degrees) is a more conservative condition for slope stability calculations

Source: *Slope Stability Investigation Report* prepared by Terracon May 2021 (see Appendix C, page 15)

The results of global slope stability analyses are summarized below and in Table 5. Details of stability calculations including material type boundaries, strength parameters, and the minimum factor of safety and critical slip surface are attached in Appendix C.

Static factors of safety calculated for representative walls were 1.63 to 2.17 with seismic factor of safety ranging from 1.3 to 1.75. Based on the results of the stability analyses, the proposed rock slope configurations are considered stable under static and seismic conditions as reclaimed slopes. Sufficient static factors of safety (FS) in excess of 1.5 and seismic factors of safety at or greater than 1.1 for the proposed end use, which are in conformance with Division of Mine Reclamation (DMR) criteria, were indicated for the modeled scenario rock slopes configurations.

The overall slope angles would be on the order of 45 degrees, using a 25-foot high, 25-foot wide face to bench ratio. The south wall of the East Deposit area is planned at 55 degrees which can be achieved using 25-foot faces and 18-foot wide benches. The slope models used vertical bench faces in global calculations. Typical face angles are between 65 degrees and 80 degrees in rock slopes; therefore, the modeled global configuration is based on a more conservative geometry.

Consideration of local structural conditions in reclamation may include modification of geometry to achieve suitable face performance (preservation of sufficient bench width) and overall slope angles in the various rock materials.

Final stockpile slopes are planned at a ratio of 2V:1V or flatter. This configuration is considered stable by inspection/practice. In addition, the presence of large angular clasts in stockpile fill materials improves the stability of these slopes.

Table 5
Summary of Global Slope Stability Results

Mine Area	Materials	Slope Configuration	Static Factor of Safety	Seismic Factor of Safety (with $K_h=0.15$)
Lillian Belle West slope	MS schist	200H @ 45 degrees	1.68	1.34
Lillian Belle Southeast slope	Alluvium MS schist	150H @ 35 to 45 degrees	1.85	1.35
East Deposit South slope	Carbonate	275H @ 45 degrees in rock cut 160H @ 33 degrees in native rock	2.17	1.75
West Deposit	MS breccia	275H @ 45 degrees	1.63	1.30

Source: *Slope Stability Investigation Report* prepared by Terracon May 2021 (see Appendix C, page 17)

Terracon recommended the following design/monitoring measures during operations and reclamation which have been included in the slope assessment:

- Inclusion of horizontal safety benches in final slope design per the Mine Reclamation Plan which will be an effective protection from rockfall, reduces tensional forces in surface rock, and reduces surface erosion rates.
- Quarry rims will be protected with berms as necessary to prevent slope erosion in areas where overland flow is toward slopes and also for public safety.
- Overall final cut slopes in the rock materials shall be no steeper than the slopes designed in the Reclamation Plan.
- Localized structures at the bench scale may form zones that require scaling and/or excavation to flatten or steepen face angles to achieve suitable reclamation conditions. At such time and locations as reclamation slopes are excavated, a qualified geotech professional should examine the slope conditions to determine conformance with the reclamation plan.
- Continued inspection and monitoring of mine benches and slope conditions for indications of potential instability and failure warning signs shall be implemented.
- Final reclaimed overburden stockpile slopes shall be no steeper than 2H:1V to the maximum proposed heights as shown on the Mine Reclamation Plan and surface drainage shall be conveyed away from slopes.

Plant and Mobile Equipment

The typical quarry and plant equipment listed in Table 6 are utilized for mining, hauling, and road maintenance activities on-site and ore crushing and separating. As operations progress over time, replacement equipment may be required to optimize operations and to meet equipment emissions' standards. The replacement equipment types would not substantively change over time. Haul trucks, diesel equipment, and the processing plant meet requirements of the MDAQMD and the California Air Resources Board's (CARB) off-road diesel vehicles regulations to reduce diesel pollutants. The portable processing plant is operated under MDAQMD Permit No. 12469 and the generator set under Permit No. 12473.

Table 6
Typical Plant and Quarry Equipment for Baxter Quarry

Equipment	Typical No.	Current Days & Hrs./Year	Purpose
Front-End Loader (CAT 980 typ.)	1	250 - 300 days/ 2,500 hours	Mining & loading of excavated materials into the processing plant, loading mine trucks and on-road haul trucks.
Front-End Loader (CAT 988 typ.)	1	250 - 300 days/ 2,500 hours	Mining & loading of excavated materials into the processing plant, loading mine trucks and on-road haul trucks.
Off-Road Haul Trucks (CAT 745) (45-ton)	3	250 - 300 days/ 2,500 hrs. each	Transportation of ore and overburden to stockpiles.
Water Truck (4,000 gal. typ.)	1	250 - 300 days/ 1,250 hours	Water spray roads, active quarry and overburden areas, & general dust control.
Drill Rig (varies)	1	250 - 300 days/ 2,000 hours	Drill holes for placement of explosives.
Generator Set	1	250 - 300 days/ 2,500 hours	Supplies power to trailer and plant. Permitted per MDAQMD Permit No. B012473.
Light plant	1	varies	Utilized as needed.
Crushing & magnetic separator plant (crusher, hopper, magnetic separator & and conveyors)	1	250 - 300 days/ 2,000 hours	Portable tracked crushing & magnetic separator plant (currently KPI-JCI FT4250) to process ore. Permitted per MDAQMD Permit No. B012469.
Ancillary Equip.	Varies	Varies	Maintenance vehicles, pick-ups, SUVs.

Source: CalPortland 2022

List above is typical equipment to be used on-site. Equipment types are not expected to vary. Specific equipment will change during the life of the project due to replacement of aging equipment and updated equipment and fleet emission standards.

Equipment maintenance, minor or emergency repairs, and re-fueling with portable maintenance/fuel trucks are conducted at the site by maintenance and fuel trucks with appropriate safeguards. Any used oil generated at the mine site is collected and transported for

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

Dust Control

Existing dust control measures are in compliance with MDAQMD Rules 401 (limiting visible emissions); 402 (avoid nuisance emissions to people or businesses or property); 403 (prohibits visible dust from crossing property lines and for controlling fugitive dust). The dust control measures are operative with periodic monitoring by MDAQMD and CalPortland personnel ensuring that the regulatory standards are met. The principal dust control measure is water spraying at the processing plant and of roads, operational quarry areas, and active overburden stockpiles. A 4,000 gallon water truck (typical) is used for dust control. Water for dust control will continue to be obtained from Baker and off-site private wells and no change in water usage is expected. On occasion, if deemed a more effective method for road dust, CalPortland may utilize approved dust suppressant agents on roads.

Sanitation

Portable toilets will be supplied for use by employees and will be located on-site at the operations area.

Site Access and Public Safety

The CalPortland Baxter Quarry area is accessed from I-15 south on Basin Road for 3.5 miles directly to the site. The road is signed and gated about 0.75 miles within the site. When operations move east, the gate and signage will be moved to the far eastern project boundary as shown on Figure 3 and Sheet 2.

The Baxter Quarry is in an isolated remote section of the Mojave Desert. There are no other roads, public access, or developments in the area or along the access road. Quarry areas will have warning signs, roads not used will be blocked or closed, and safety berms six feet in height will be constructed along the quarry rims. Any unauthorized roads will be blocked or closed at the property boundary.

There are currently no known portals, shafts, tunnels or openings on the mine site. A portal will be developed to access the Central Deposit. Underground mining is regulated by the DOI MSHA and is not part of SMARA except for surface disturbances related to the ongoing underground mining. All surface areas utilized during the underground mining phase will be reclaimed per the approved reclamation plan and SMARA. The portal will be closed per MSHA requirements and SMARA Regulations section 3713(b): "Prior to closure, all portals, shafts, tunnels, or other surface openings to underground workings shall be gated or otherwise protected from public entry in order to eliminate any threat to public safety and to preserve access for wildlife habitat." Final closure of the portal will be coordinated with MSHA and the County.

If any other portals, shafts, tunnels or openings re uncovered, they will be either closed or gated or protected from public entry but preserved for bat and other wildlife if applicable in consultation with County.

1.2 MINE WASTE (OVERBURDEN)

Overburden material is estimated to be approximately 25% of the total reserves, about 50,000 tpy that will vary year to year or 2 million tons for the life of mine. The existing overburden stockpile is located south and southeast of the West Deposit. Refer to Sheet 2 for additional information. The stockpile currently covers about 26 acres and will be expanded east on an additional 24 acres. The average height is approximately 100 feet up to a maximum of 150 feet with the top elevation of 1,500 feet amsl. Slopes will be 2H:1V. This configuration is considered stable by inspection/practice. In addition, the presence of large angular clasts in stockpile fill materials improves the stability of these slopes.

The top of the stockpile will be designed with inward drainage with a 5-foot deep depression to catch precipitation which will percolate and evaporate. This design will reduce potential runoff down the stockpile slopes or haul roads and potential erosion. The overburden material is compacted by tractor roll-over.

Hazardous Materials and Waste

Consistent with current practice, no hazardous materials are or will be used on-site with the exception of fuel and oil for the generator and mobile equipment. No hazardous waste is produced on the mine site. Scheduled equipment maintenance, repairs, and re-fueling is conducted with portable maintenance/fuel trucks implementing appropriate environmental safeguards. 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. There is a 2,000-gallon red dye (diesel for off-road equipment) and a 240-gallon clear diesel tank located currently to the south of the West Deposit along with an office and employee trailer. Approximately 850 gallons are consumed per operating week and are not expected to increase as a result of the project.

CalPortland has a Hazardous Materials Business Plan (HMBP) on file with the County that describes methods and procedures to minimize the potential for hazardous material and waste releases including an emergency response and contingency and spill response procedures. CalPortland has prepared a Spill Prevention Control and Countermeasure (SPCC) Plan. The SPCC is designed to minimize the potential for spills or releases of oil and fuel and outlines procedures to be followed in the event of a spill.

Safety measures for the use of blasting materials are discussed in Section 1.6.

1.3 ORE PROCESSING

Mining operations will continue in the existing West Deposit until ore is depleted and phased to the Lillian Belle Deposit, then to the West Deposit, and eventually underground. The iron ore is crushed and separated by a portable crusher and magnetic separation plant that is track-mounted.

The plant is currently within the West Deposit and will be moved to the active mining area as mining progresses. The iron ore is stockpiled currently to the east of the West Deposit for load-out into 25-ton street legal haul trucks. Future ore stockpiles will be located mainly in the staging area of Lillian Belle.

Mobile equipment and the generator run on diesel fuel. The plant and generator are operated under MDAQMD Permit No. B012469 and B012473, respectively. Diesel fuel is brought on-site by truck and is stored in two fuel tanks as listed above. There is also a small office/employee trailer onsite.

The listed equipment and portable processing plant facility are typical and the actual plant equipment, manufacturers, and configurations may vary. There are no changes proposed in the mining, processing, and shipment of iron ore at the site.

1.4 PRODUCTION WATER

Water will continue to be used for dust control measures only. No water is used for processing activities. Consistent with current practice, water will be applied to the working areas, roads, and material transfer points. A 4,000 gallon water truck (typical) transports water obtained from Baker and off-site private wells approximately five times per operating day. In 2020, approximately 2.5 acre-feet were used. No change in water usage is expected under the project. Water used for dust control will evaporate and therefore, the project will not produce any run-off water.

1.5 EROSION AND SEDIMENTATION CONTROL

Due to the hard bedrock material, lack of fine surface material, and low rainfall (approximately 4 inches/year), the site has little potential for erosion and sedimentation. No existing drainages are being substantially diverted and no additional runoff is expected as no impervious areas are being created. The pit areas will retain any direct precipitation to percolate or evaporate and berms along the rim will protect quarry slopes as needed. The stockpile top will be designed to drain inward and the rocky composition of the slopes will not be conducive for downward erosion. Any runoff will be directed into the pits or into existing drainages. Control of surface drainage, erosion, and sedimentation of the operations involves the following primary components:

- Limiting surface disturbance to the minimum area required for active operations;
- Allowing pits to capture precipitation and any sheet flow
- Diverting runoff from flowing down quarry slopes with rim berms and down stockpile slopes by creating inward drainage for top of stockpile; and
- Stabilizing disturbed areas through regrading, replacement of soils, revegetation, and erosion control practices.

All operations on-site will comply with the Storm Water Pollution Prevention Plan (SWPPP) to be updated periodically with mine site development and implementation of storm water BMPs.

1.6 BLASTING

Blasting operations involve drilling along the mining face, placement of charges, and detonation of the charges by a blaster licensed through the Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATF&E) for handling explosive materials. The transporting, handling, storage, and use of explosive materials, blasting agents, and blasting equipment is directed and supervised by a qualified blasting contractor. The blasting contractor and the explosive delivery company must be properly trained and licensed in accordance with all Federal, State, and local agencies and regulations and must show evidence of compliance with the California blasting license program, U.S. Department of Transportation hazardous materials (HAZMAT) Certificate of Registration, California HAZMAT Transportation License, and general liability insurance policy for explosive transportation. All vehicles and explosive transport magazines are to conform to all Federal, State, and local regulations associated with the transportation and handling of explosives. CalPortland and its contractors currently hold applicable licenses and permits.

The use and handling of all explosive materials are done by fully trained and experienced personnel. All blasters must possess a current blasting license issued by CAL-OSHA and be experienced in quarry blasting and hold applicable insurance. The blasting contractor's employees must be trained in accordance with CAL-OSHA and MSHA requirements and possess certification of such training.

Blasting is to only be conducted by a licensed blaster under the Office of Surface Mining (OSM) Blasting Performance standards (30 CFR Section 816.61-68). A blast design is required if conducted within 1,000 feet of any building used as a dwelling, public building, school, church, or community or institutional building outside the permit area and pre-blasting surveys are required for all residents or owners of dwellings or other structures located within 1/2 mile of the permit area (30 CFR Section 816.61-62). No such dwellings or residents exist within these distances to blasting operations.

Drilling is currently conducted 5 to 6 days a week, 8 hours/day with depths of 28 feet. Blasting currently takes place approximately 5 times per year. No substantial increase in the number of blasts per year is expected. Blasting activities typically take place between the hours of 8 AM and 2 PM on weekdays (Monday through Friday).

It is also important that basic safety requirements are practiced during blasting for on-site employees, equipment, and structures. Proper blasting design by qualified experts is the best method for eliminating the potential impacts of blasting operations. A proper blasting design involves efficient use of explosive delays and enough stemming or overburden material to confine fly rock. In addition, a number of safety measures specific to the project site will be required including removal of unstable boulders, stabilizing boulders, limiting the amount of explosive used in blasting, inspecting the site prior to blasting, posting lookouts and use of warning signals. The current blasting agents are ammonium nitrate and fuel oil (ANFO). No explosives will be stored onsite.

2.0 RECLAMATION PLAN

2.1 LAND USE

The Quarry is located in an isolated, remote area approximately 19 miles southwest of the Community of Baker and 40 miles east-northeast of Barstow within approximately 452 acres of vested, private lands mostly in Section 12, Township 11 North, Range 6 East, SBBM. The Baxter Quarry Reclamation Plan area totals 263 acres and is accessed from I-15 south on Basin Road for 3.5 miles directly to the site. Refer to Figures 1 and 2 for the Location and Vicinity Maps.

The site is an existing vested iron ore mine operating under a reclamation plan approved by the County in 1990 that covers approximately 130 acres of which approximately 49 acres are disturbed. The Quarry area is located on patented (private) lands owned by CalPortland and surrounded by a number of unpatented claims and mill sites held by CalPortland. Surrounding land uses include vacant public desert lands administered by the Bureau of Land Management (BLM) to the east, south, and north. The National Trails National Monument established in 2016, is adjacent to the site on the west and northwest. The main railroad line from Los Angeles to Las Vegas is located along the Mojave River to the south. There are no adjacent or nearby residences within 6 miles.

Existing elevations at the site range from 1,600 feet above mean sea level (amsl) in the east central areas to a low of approximately 1,200 feet amsl on the east where the site flattens into the Mojave River floodplain. The plant community within the boundary of the project site and adjacent open space areas is creosote desert scrub. The 2020 County Wide Policy Plan (November 2020) Designations are Land Use Categories (LUC) – Resource/Land Management (RLM); and Zoning - Resource Conservation (RC).

2.2 VISIBILITY

The site is not visible by any surrounding residences or roads. The site is not part of a scenic viewshed or visible from a scenic highway. The eventual reclamation of the site will aid in blending the site with the surrounding topography and vegetation.

2.3 VEGETATION

For a complete description of the onsite vegetation, refer to the *Biological Resource Assessment Baxter Quarry Project* prepared by ELMT Consulting, Inc. (February 2022) included in Appendix A of this Plan. The Assessment documented biological resources including sensitive plants, potential impacts to sensitive plant species, and recommended protection measures.

Active Mining Areas (Disturbed)

Active mining areas have been subject to a high level of disturbances from existing mining activities and no longer comprise a native plant community. These areas are entirely devoid of

vegetation, or support ruderal/weedy plant species. Disturbed areas included the existing mining pit, dirt access roads, and stockpile areas.

Proposed Reclamation Areas

The creosote scrub bush scrub plant community occurs throughout the undeveloped/undisturbed portions of the project site and is the dominant plant community within the surrounding landscape, and overall underlying plant community in the area. This plant community is dominated by creosote (*Larrea tridentata*) corresponds with Sawyer et al.'s (2009) *Larrea tridentata* shrubland alliance. Other plant species observed include devil's spineflower (*Chorizanthe rigida*), burro weed (*Ambrosia dumosa*), desert dicoria (*Dicoria canascens*), brittlebush (*Encelia farinosa*), turtleback (*Psathyrotes ramosissima*), wire lettuce (*Stephanomeria pauciflora*), desert willow (*Chilopsis linearis*), silver cholla (*Cylindropuntia echinocarpa*), branched pencil cholla (*Cylindropuntia ramosissima*), cottontop (*Echinocactus polycephalus* var. *polycephalus*), frost mat (*Achyronychia cooperi*), California juniper (*Juniperus californica*), desert croton (*Croton californicus*), catclaw (*Senegalia greggii*), (*Hilaria rigida*), Arabian schismus (*Schismus arabicus*), brittle spine flower (*Chorizanthe brevicornu*), and thick-leaved ground cherry (*Phsalis crassifolia*).

The desert willow scrub (Chilopsis Woodland Alliance) is found on the northeast portion of the site in association with the Mojave River floodplain. This plant community is dominated by desert willow (*Chilopsis linearis* ssp. *arcuata*) closely corresponding with Sawyer et al.'s (2009) *Chilopsis linearis* woodland alliance. These areas are outside the planned project footprint. Other plant species found within this plant community include smoke tree (*Psorothamnus spinosus*), and plant species associated with the creosote bush scrub plant community.

Special-Status Plants

No special-status plant species (federally or state listed as endangered or threatened or ranked by the CNPS Rare Plant Rank Species considered to be significant under CEQA) were observed on-site during the survey. There are no western Joshua trees (*Yucca brevifolia*) located on the site as it is outside the range of this species.

2.4 WILDLIFE

Plant communities provide foraging habitat, nesting and denning sites, and shelter from adverse weather or predation. A detailed assessment of wildlife species that were observed during the field survey or that are expected to occur within the project site is included in the *Biological Resource Assessment Baxter Quarry Project* prepared by ELMT Consulting in Appendix A. Special status species are discussed in a separate heading below.

No fish, amphibians, or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) with frequent sources of water that would provide suitable habitat for fish and amphibians were observed on the project site.

The project area provides suitable foraging habitat for a variety of reptilian species adapted to conditions within the Mojave Desert. The only reptile species observed within the Project area was the desert iguana (*Dipsoarus dorsalis*). Other common reptile species expected to occur

within the Project area include desert glossy snake (*Arizona elegans eburnata*), Mohave shovel-nosed snake (*Chionactis occipitalis*), desert banded gecko (*Coleonyx variegatus variegatus*), and northern Mohave rattlesnake (*C. scutulatus scutulatus*). No desert tortoise (*Gopherus agassizii*) (Fed./CA threatened) or signs were observed within the project areas during protocol field surveys mainly due to steep, rocky terrain.

The project area provides suitable foraging and denning habitat for a variety of mammalian species adapted to conditions within the Mojave Desert. Identification of mammals within the Project area was generally determined by physical evidence rather than direct visual identification. This is because: 1) many of the mammal species that potentially occur onsite are nocturnal and would not have been active during the survey; and 2) no mammal trapping was performed. No mammals were visually observed during surveys, but active kangaroo rat burrows were detected during surveys.

The project site provides suitable foraging and cover habitat for a variety of resident and migrant bird species adapted to conditions within the Mojave Desert. Avian species detected during the survey included red-tailed hawk (*Buteo jamaicensis*), ash-throated flycatcher (*Myiarchus cinerascens*), and common raven (*Corvus corax*).

No active nests or birds displaying nesting behavior were observed during the field survey, which was conducted during breeding season. The project site and surrounding area provides foraging and nesting habitat for year-round and seasonal avian residents, as well as migrating songbirds that could occur in the area.

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds, their nests or eggs). If new ground clearance or grading occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds shall be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during clearing.

State and Federal Jurisdictional Waters

The Project site was evaluated for the limits of state and Federal jurisdictional waters, i.e. waters of the US (WoUS) as regulated by the US Army Corps of Engineers (USACE) and waters of the State the Regional Water Quality Control Board (RWQCB), and streambed and associated riparian habitat as regulated by the California Department of Fish and Wildlife (CDFW).

The USFWS NWI and the USGS National Hydrography Dataset were reviewed to determine if any blueline streams or riverine resources have been documented within or immediate surrounding the project site. Based on this review and field investigation, four (4) riverine resources were identified within the boundaries of the project site. These features are ephemeral features that follow topography within the canyon bottoms of the rolling hills. Surface flows within with these features are only provided by direct precipitation from storm events. No surface water was observed during the field investigation.

The Mojave River floodplain and six (6) unnamed drainage features were observed within the boundaries of the project site during the field investigation (Exhibit 5, *Jurisdictional Areas*). The Mojave River floodplain is located on the northeastern boundaries of the project site outside of the proposed limits of disturbance. The Mojave River floodplain is characterized by dynamic braided channel and is generally unvegetated or vegetated with a mix of creosote bush scrub and desert willow scrub. Mining activities are expected to avoid the Mojave River floodplain.

Two of the ephemeral drainage features extend west to east on the northern boundary of the project site and generally follow Basin Road. These features have been subject to routine grading activities associated with maintenance of Basin Road. The other four ephemeral drainage features are found on the southwest portion of the project site. These features generally flow in a north to south direction. These ephemeral drainage features are unvegetated or vegetated with the creosote bush scrub plant species. The unnamed drainage features all flow into the Mojave River Floodplain.

Mining activities will avoid the riverine resources on-site to the extent possible including drainage areas to the east of the site. However, proposed mining activities will potentially encroach into the riverine features along the access road and to the south of the overburden stockpile. Potential impacts to on-site waters of the U.S., Regional Board waters of the State and CDFW jurisdiction streambed will need to be defined and regulatory approvals from the Corps, Regional Board, and CDFW will need to be obtained as applicable prior to new disturbance within jurisdictional waters. The Project is expected to result in impacts to 1,115 linear feet and 1.15 acres of jurisdictional waters. Prior to impacts to the jurisdictional resources, the operator shall obtain any applicable permits from the Corps, Regional Board, and CDFW.

No hydrophitic vegetation, hydric soils and/or wetland hydrology, are present within the Project site. Therefore, no wetlands were identified during the survey.

Special-Status Wildlife

According to the CNDDB, twenty-two (22) special-status wildlife species have been reported in the *Bitter Spring*, *Cronese Lakes*, *West of Soda Lake*, *Dunn*, *Cave Mountain*, *Crucero Hill*, *Hidden Valley West*, *Hidden Valley East*, and *West of Broadwell Mesa* quadrangles (refer to Appendix C). Based on habitat requirements for the identified special-status species, and known distributions, it was determined that the undeveloped/undisturbed plant communities found onsite have the potential to support the following special-status wildlife species:

- pallid bat (*Antrozous pallidus*), a California Species of Special Concern – moderate potential to occur
- golden eagle (*Aquila chrysaetos*), a California fully protected and watch list species – moderate potential to occur. There is one golden eagle location documented approximately 1.7 miles northwest of the Project site. This location occurs on the northern portion of Cave Mountain. No GOEA were observed within the Project site boundaries during survey.
- spotted bat (*Euderma maculatum*), a California Species of Special Concern – moderate potential to occur

- prairie falcon (*Falco mexicanus*), a California watch list species – moderate potential to occur
- Mojave desert tortoise (*Gopherus agassizii*), and federally and State Threatened species – moderate potential to occur
- loggerhead shrike (*Lanius ludovicianus*), a California Species of Special Concern – high potential to occur
- fringed myotis (*Myotis thysanodes*), no formal status – low potential to occur
- desert bighorn sheep (*Ovis canadensis nelsoni*), California fully protected species – moderate potential to occur
- American badger (*Taxidea taxus*), a California Species of Special Concern – low potential to occur.

Based on regional significance and listing status, the potential occurrence of, Mojave desert tortoise, Mohave ground squirrel, and burrowing owl are described in further detail below.

The desert tortoise is a State- and federally listed threatened species. Surveys were conducted for the desert tortoise in 2019 per latest USFWS protocols and determined that there are no desert tortoise occurrences on site or directly adjacent to it. The result of the survey was that no evidence of desert tortoise was found within the project boundaries.

The Mojave ground squirrel is a State-listed threatened species. Although a focused MGS trapping survey was not performed, a Mohave ground squirrel habitat suitability assessment was conducted. The habitat assessment included a pedestrian field assessment, review of reported occurrences of the MGS in the region, and adherence to CDFW's criteria for assessing potential impacts to the Mohave ground squirrel. The criteria questions are as follows:

1. *Is the site within the range of the Mohave ground squirrel?;*
2. *Is there native habitat with a relatively diverse shrub component? and*
3. *Is the site surrounded by development and therefore isolated from potentially occupied habitat?*

There are no documented occurrences of Mohave ground squirrel within a 3-mile radius of the Project site; the closest recorded occurrence is approximately 16.5 miles northwest of the Project site within the jurisdiction of Fort Irwin. Mohave ground squirrel are thought to be extirpated east of the I-15, south of Barstow and west of Highway 247. The Project site occurs well east outside the established current range for this species and no further discussion or investigation is warranted.

The burrowing owl 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 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 by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California FGC (FGC #3513 & #3503.5).

BUOW are not documented within Project site, within a 3-mile radius, and are not documented in the *Cave Mountain* USGS quadrangle or the eight quadrangles that surround it. The

assessment survey was structured to detect burrowing owl. The survey consisted of walking transects spaced to provide 100% visual coverage of the project site, including survey buffer transects around the Project site. The result of the survey was that no evidence of burrowing owl was found within the project boundaries.

No special-status wildlife species were observed on-site during the habitat assessment. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the project site has a high potential to support loggerhead shrike; a moderate potential to support pallid bat, golden eagle, spotted bat, prairie falcon, desert tortoise, and desert bighorn sheep; and a low potential to support fringed myotis and American badger. Further it was determined that the Project site does not provide suitable habitat for any of the other special-status wildlife species known to occur in the area. Most of the steep cliff faces and rocky terrain that provide suitable habitat for pallid bat, spotted bat, fringed myotis will be avoided.

Protection Measures

Desert Tortoise - Though no desert tortoise sign were observed on-site, Out of an abundance of caution, it is recommended that pre-construction desert tortoise clearance surveys be conducted prior to ground disturbing activities to ensure no desert tortoise occur within the limits of disturbance. A pre-construction clearance survey be conducted thirty (30) days prior to ground disturbing areas in undeveloped areas to confirm the absence of desert tortoise within the boundaries of the survey area.

Although not anticipated, 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 obtained prepared and approved by the USFWS and CDFW.

In order to limit any potential impact, typical desert tortoise protection measures will be implemented during on-site operations and included as conditions of approval:

- *Worker/employee desert tortoise education program prior to working on-site;*
- *Disturbance shall be confined to the smallest practical areas;*
- *Vehicle speeds shall not exceed 25 miles per hour on-site;*
- *Cross-country travel with motorized vehicles outside of the project area by project personnel is prohibited;*
- *Vehicles and equipment parked shall be inspected immediately prior to being moved.*
- *To the extent possible, new disturbances on undisturbed areas shall be scheduled when tortoises are inactive (November 1 - March 15);*
- *All trash and food items shall be promptly contained within closed, common raven-proofed containers; and*
- *Firearms, dogs, or other pets shall be prohibited at the work site.*

Nesting Birds and Raptors – In order to comply with the Migratory Bird Treaty Act (MBTA) and Fish and Game Code, the following condition is required:

- *New mining activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season September 1st thorough January 31st.*
- *If new mining activities or ground clearing occurs inside the peak nesting season (between February 1 and August 31), a pre-construction survey by a qualified Biologist shall be conducted within 10 days prior to construction activities to identify any active nesting locations. If the Biologist does not find any active nests, the construction work shall be allowed to proceed. The biologist conducting the clearance survey shall document a negative survey with a report indicating that no impacts to active avian nests shall occur.*
- *If the Biologist finds an active nest within the pre-construction survey area and determines that the nest may be impacted, the Biologist shall delineate an appropriate buffer zone around the nest. The size of the buffer shall be determined by the Biologist and shall be based on the nesting species, its sensitivity to disturbance, expected types of disturbance, and location in relation to the construction activities. These buffers are typically 300 feet from the nests of non-listed species and 500 feet from the nests of raptors and listed species. Any active nests observed during the survey shall be mapped on an aerial photograph. Only construction activities (if any) that have been approved by a Biological Monitor shall take place within the buffer zone until the nest is vacated. The Biologist shall serve as a Construction Monitor when construction activities take place near active nest areas to ensure that no inadvertent impacts on these nests occur. Results of the pre-construction survey and any subsequent monitoring shall be provided to the Property Owner/Developer and the City. The monitoring report shall summarize the results of the nest monitoring, describe construction restrictions currently in place, and confirm that construction activities can proceed within the buffer area without jeopardizing the survival of the young birds.*

With implementation of the above conditions, impacts to these special-status species will be less than significant.

Critical Habitat

Under the federal Endangered Species Act, “Critical Habitat” is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. The project site is not located within federally designated Critical Habitat. The closest Critical Habitat designation is located 2.5 miles northeast of the site for desert tortoise. Therefore, the loss or adverse modification of Critical Habitat from site development will not occur and consultation with the USFWS will not be required for implementation of the proposed project.

2.5 RECLAMATION

The Amended Plan addresses reclamation of mining operations over portions of CalPortland's vested quarry. CalPortland proposes to reclaim the site to meet SMARA requirements implemented by the County that will minimize impacts to the surrounding environment and provide public safety. The objectives of this Reclamation Plan are to:

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

Reclamation starts with the initiation of mining and development of new quarry areas, roads or new overburden stockpiles and includes the following:

- Stockpile available surface material for future use as a seed bed in separate identified stockpiles seeded with an erosion control ground cover, water sprayed to create a crust, and/or covered with a larger rock material to limit wind and water erosion;
- Sloping and grading of completed quarry and stockpile slopes for safety, slope stability, and erosion control;
- Ripping of compacted areas and roads prior to revegetation;
- Covering disturbed areas with salvaged soil and alluvium overburden to aid in revegetation;
- Revegetation – hydroseeding and broadcast seeding followed by covering seed with layer of soil or alluvium by pulling chains or screens over the area;
- Upon completion of mining, remaining equipment, any structures, and internal roads not needed for site access will be reclaimed, and
- Monitoring and remediation until success criteria achieved.

The development of the deposits and timing for reclamation are linked to operational parameters and product demand. Mining operations experience unscheduled development changes due to market/economic demands and variation in ore. The County will be updated in the annual monitoring report on the status of operational and reclamation timing.

Final reclamation will include the removal of all equipment, any structures, and debris from the site within two years of the termination of all mining onsite. Any remaining overburden or ore stockpiles will be deposited into the quarry benches or floor or transported to the overburden stockpile. Compacted surfaces in the staging areas and roads to be reclaimed will be loosened by mechanical means and seeded with native plant species.

CalPortland's vested quarry comprises of approximately 452 acres. The project would amend the existing reclamation plan to cover approximately 263 acres of the vested quarry. Within the 263 - acre reclamation plan boundary, CalPortland's mining activities would disturb approximately 118 acres which will be reclaimed except for the access roads and internal quarry and overburden stockpile roads needed for revegetation access and site maintenance. Mining of the surface deposits may continue until approximately 2040. Revegetation will take place thereafter on the upper benches of the Lillian Belle Deposit. The finished benches will be solid rock; portions as feasible will be ripped, covered with soil and alluvium, and revegetated. The staging areas will be revegetated upon removal of all equipment and recontouring the surface. Approximately 50 acres will be revegetated (Lillian Belle, pit floors, overburden stockpile top, roads, and staging areas) minus the remaining roads and the slopes composed of hard rock faces.

The finished quarry benches shall be inclined 1H:1V (horizontal to vertical), with the vertical faces approximately 25 feet in height at an 80° slope. The 18 to 21-foot wide horizontal benches shall be inclined 2 percent toward the faces to capture precipitation and falling rock material. Bench heights also may vary with material encountered during excavations. A protective berm will be maintained around the deposits' rims and accessible benches and shall be posted with warning signs of steep slope hazard. The ends of the benches will be blocked with large rock (larger than ¼ ton) to prevent access. Refer to Figure 5 and Sheet 3 for the Reclamation Plan.

All the stockpile slopes will be reclaimed with 2H:1V slopes. The Slope Stability Report determined that the stockpile slopes at 2H:1V will meet or exceed static and seismic factors of safety in conformance with DMR criteria suitable for use as open space.

The stockpile slopes will be graded concurrently when a bench is completed, the final slopes will be graded as needed to create more natural surfaces to blend into or conform with the surrounding hills and topography and to create islands and pockets to place salvaged soil. This practice will enhance the capture of seeds and rainfall to facilitate revegetation and stability. The tops of stockpiles will be designed with inward drainage with a 5-foot deep depression to catch precipitation which will percolate and evaporate and avoid runoff down the stockpile slopes and reduce potential erosion. The top of the stockpile will be covered with soil and revegetated.

The access roads will be left on-site for use during revegetation and monitoring activities and for overall future site access and public safety as shown on the Reclamation Plan. Roads not needed for site and pits' access will have any road base material removed, surface ripped and covered with available soil and revegetated. Other on-site roads needed for site access will be reclaimed after reclamation of pits and stockpiles to allow access to all reclamation areas.

After revegetation, CalPortland will maintain erosion control and safety features; monitor revegetation progress; and conduct remediation as necessary until success criteria achieved. Ongoing maintenance of fencing, signs, and erosion control will be conducted.

2.6 REVEGETATION

A *Revegetation Plan* for the Baxter Quarry was prepared by Jericho Systems, INC., February 2020 and is included as Appendix B. It includes detailed procedures and methodologies for the revegetation effort. This section includes a summary of the Revegetation Plan.

Existing Baseline Vegetation

The existing vegetative conditions of the site were documented by a biological survey included within the *Revegetation Plan*. The majority of the proposed project footprint is on Cave Mountain and the rugged rocky hills to the south and southeast, which have little vegetation. The site consists of creosote bush shrubland. The more level areas within the Mojave River Wash to the extreme east of the mining activities consist of scattered desert willow woodland. These areas will not be disturbed by the proposed project. The goal of the revegetation plan is to establish the guidelines to monitor, maintain, and assess the results of the completed revegetation program through comparison to the established baseline data and recommended success criteria.

In order to accurately define baseline conditions of the creosote desert shrub community and to adequately measure the success of the revegetation over time, plant transects were conducted. Baseline vegetation data was obtained by sampling three 50-meter (m) long and 20 m wide transects (1,000 m²) divided into 30-100 m² subplots. One-m² plots were sampled but due to the sparsity of vegetation, this size plot was not informative and not carried forward. All native and non-native plant species within plots were recorded.

Table 7 show the results of the plant transect data gathered on-site in terms of cover, density and species diversity. The transect data confirmed the sparsity of vegetation onsite. Creosote is the dominant species found in all 30 subplots along with big galletta grass. Acacea was observed in one subplot and cholla in three subplots. These are the only plants recorded. See Table 7 for the transect results.

Table 7
Plant Community Composition (Native Perennials per 100 m²)

Transects	Shrub/Grasses Percent Cover	Shrub/Grasses Species Density	Species Diversity
30 transects – 100 m ² each	9.4	6.3	2.1

Source: Jericho 2020; Lilburn 2021

Soil Salvage and Storage

The top foot of alluvium from mainly the Lillian Belle area will be salvaged and stored in separate identified soil stockpiles to the north and south of the pit and in the staging area to the northeast as shown on the Mine Plan (Figure 3 and Sheet 2). These stockpiles may be seeded with a native erosion control ground cover, water sprayed to form a soil crust, and/or covered with a larger rock material to limit wind and water erosion. The West Deposit is totally disturbed

with no additional soil available and the East Deposit and overburden stockpile areas are rocky steep slopes with minimal soil.

Revegetation

The revegetation procedures may be modified or changed should new information or techniques that would improve the results of the revegetation activities become available. The effort will focus on the perennial pioneer shrubs, herbs, and annuals found in the area that aid in providing organic material, holding moisture, and breaking up the surface. To implement revegetation, only native seeds will be used. Due to the minimal number of naturally occurring plants, native seeds may be purchased from commercial suppliers.

Site Preparation

- Rip or scarify compacted areas including closed roads to a 0.5 to 1-foot depth (if possible due to rock benches in quarries), with surface rills and furrows left to aid in water and wind-blown seed collection;
- Place soils that have been stockpiled in a uniform layer across the benches of Lillian Belle and for each deposit's floor and staging areas, top of OB stockpile, and roads to be reclaimed, partially mixed with underlying scarified material;
- Shape or contour final slopes and benches on the overburden stockpile for drainage and for natural appearing slopes and landforms;
- Seed with locally native species and revegetate per methods described below and as listed in Table 8;
- Stake or flag reclaimed areas to eliminate additional disturbance;
- Monitoring and maintenance; and
- Application of remedial activities, if necessary, including but not limited to additional seeding and change of seed mix.

Seed Mix

The seeds to be used for revegetation purposes include species that are either present on the site already or are present in the surrounding area as part of the creosote bush shrub plant community. The proposed seed mix or palette (see Table 8) is based on native species found in this plant community. However, the list may be revised based on the information collected from the reference site at the time of revegetation. While the shrubs (creosote) will eventually dominate the habitat type, the forbs and annuals provide early successional species that stabilize the soil.

Table 8
Proposed Native Plant Species Revegetation

Species		Pounds Per Acre
Scientific Name	Common Name	
<i>Amsinckia tessellata</i> var. <i>tessellata</i>	Fiddleneck	0.25
<i>Chorizanthe brevicornu</i>	Brittle spine flower	0.25
<i>Chorizanthe rigida</i>	Rigid spiny herb	0.25
<i>Stillingia spinulosa</i>	Broad leaved stillingia	0.5
<i>Hilaria rigida</i>	Big galleta	1.0
<i>Stephanomeria pauciflora</i>	Wire lettuce	0.25
<i>Ambrosia dumosa</i>	Burro weed	2.5
<i>Ambrosia salsola</i>	Burrobrush	2.5
<i>Encelia farinosa</i>	Brittlebush	2.0
<i>Larrea tridentata</i>	Creosote bush	3.0
<i>Senegalia greggii</i>	Catclaw, devil's claw	1.0
<i>Cylindropuntia echinocarpa</i>	Silver cholla	1.0
<i>Cylindropuntia ramosissima</i>	Branched pencil cholla	0.5
<i>Echinocactus polycephalus</i> var. <i>polycephalus</i>	Cottontop	0.5
TOTAL pounds per acre		15.5

Source: Jericho, Lilburn 2021

Seeding

The revegetation areas will be hydroseeded with a certified weed-free seed mix. Seed will be delivered to the site in sealed and labeled packaging, along with a California State Agricultural Code seed certification. The seed mix will be applied by hydroseeding with a low nitrogen hydroseed slurry containing seed, natural fiber mulch, and organic tackifier. The hydroseed mulch will help more of the seed stay in place and germinate compared to hand seeding.

A seed mix should be a subset of the native plants identified during surveys as listed in Table 8. Seed mix can be supplemented with locally confirmed native herbaceous species as needed based on seed availability. Species recommended were the most commonly encountered on the site and accounted for the majority of the vegetative coverage. Selection of species at the time of revegetation should be a balance of availability. Seeds will be distributed throughout an area scheduled for revegetation during the rainy season, generally between November and March, or during a suitable period based on weather forecasts and rainfall.

Where hydroseeding is not feasible due to access issues, steepness of slopes or due to potential damage to surrounding habitat, broadcast seeding will be used. Broadcasting will be conducted by hand and should not occur when there are detectable winds that might carry seed away from its intended location. Seed should be broadcast twice: first, half of the seed should be spread while moving in one direction, and then the other half of the seed should be spread while moving

perpendicular to the original direction. Seeds will be hand raked or mechanically covered by a tractor with a chain attachment.

Test Plots

Test plots will be used to provide data for ensuring revegetation efforts of mined areas are successful. The operator shall establish a minimum four-100 m² test plots representative of where mining will occur in areas consisting of creosote scrub habitat. Test plots would include surface ripping/no seeding (control plot); surface ripping, soil cover/no seeding; surface ripping, soil cover/seeding as described above; and surface ripping, soil cover/seeding as described above using mycorrhizal fungi. Additional tests would be conducted if the initial tests and any active revegetation are not successful and may include various types and amounts of seeds and different surface/soil preparation.

Irrigation

The revegetation planned for the site utilizes native seeds. The average precipitation in the area should be sufficient for seed germination and root establishment of native species. Planting in the fall or early winter, prior to anticipated winter precipitation events, 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.

Fertilization

No fertilization of the site is recommended. All revegetation will utilize native seeds tolerant to existing soil conditions.

Non-Native Invasive Weed Control

The purpose of the non-native invasive species control plan is to reduce or limit the occurrence of non-native invasive plant species that may invade the site where active and natural 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.

No non-native species occurred within the sampled plots but *Schismus barbatus* (Old han schismus) occurred patchily across the site. It is important that non-native grass species be monitored and/or controlled to prevent their spread into mined areas. Non-native grasses, if their populations exceed 10%, should be removed or treated.

The occurrence of non-native invasive species on-site shall be monitored by visual inspection quarterly for the first year and then annually thereafter. No areas will be allowed to have more than 10 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.

Non-native vegetation will be removed using the most efficient method as determined by the site conditions. 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 instance where there is an aggressive and extensive weed invasion on site. At this time, it is anticipated the herbicide to be used will be Fusillade and Roundup (glyphosate). The Biologist would also oversee their application.

Once the weed growth is under control, weeding will take on a more selective approach and be completed with hand tools and such as hoes, shovels and rakes and spraying, if essential to meet success criteria. Reports of inspections and weed control implementation shall be part of the revegetation monitoring as kept on file by the operator.

Success Criteria

Composition of the native creosote scrub plant community was determined using vegetation transects conducted within of the existing, undisturbed native habitat. Vegetation composition data, a series of performance standards or success criteria were derived. Success criteria for native perennial shrub cover was based on 45% of baseline values, while species density and species diversity were based on 40% of baselines values. Fulfillment of the performance standards is expected to indicate that revegetated areas are progressing toward the long-term goal of becoming a functioning, self-sustaining creosote scrub plant community. Refer to Table 9 for the Plant Species Composition and the Performance Standards.

Table 9
Revegetation Performance Standards or Success Criteria*
(45% of Baseline Cover, 40% of Baseline Species Density & Diversity)

	Shrub/Grasses Percent Cover	Shrub/Grasses Species Density	Species Diversity
Composition*	9.4	6.3	2.1
Success Criteria	4.25%	2.5	1

*Native perennial shrubs/grasses from the 2020 baseline surveys of 30 lots - 100 m² each.

Sources: Jericho February 2020; Lilburn 2021

It is anticipated that each revegetated area will meet the Performance Standards at a different time. A five-year monitoring period is recommended for determination if the revegetation is successful and if not, remediation may be recommended. Monitoring will continue until success criteria met. If the performance standards are not being met, corrective measures will be implemented.

Revegetation Monitoring and Remediation

Revegetation monitoring will be conducted for three purposes: 1) to ensure that the site preparation, seeding and weed eradication follows the Revegetation Plan (implementation

monitoring), 2) to evaluate native plant establishment and vigor, and to identify and make recommendations for correcting problems (qualitative monitoring) and 3) to quantitatively measure development of the creosote scrub habitat (quantitative monitoring) to determine its progress with respect to the established success criteria. The success of the revegetation effort will be measured primarily by the analysis of the quantitatively collected data compared to the success criteria.

Implementation Monitoring - The biological monitor will ensure that the revegetation and weed control plans are followed and assist in making necessary modifications to the plan, if necessary. Monitoring records will be kept for all revegetation activities including weed control, soil preparation, and seeding activities. The monitoring records will include dates for each activity, location of each activity, the type of treatments or actions taken, any problems encountered, and modifications made to the revegetation effort. This information will be documented and used to develop an implementation (as-built) report that will be included in the annual monitoring report.

Qualitative monitoring is necessary to subjectively evaluate the general health of reseeded areas and to identify and correct any problems such as proliferation of non-native invasive species. Under qualitative monitoring, revegetated areas will be visited by the monitor on a defined schedule to evaluate the effectiveness of nonnative species control and to document the growth and vigor of seeded vegetation. The monitor will record and report observations on the qualitative monitoring and make specific recommendations for correcting any identified problems, including issues with seed germination and growth, erosion concerns, and weed control.

Quantitative monitoring will be used to annually quantify specific attributes of the revegetated habitat. Revegetation in the desert can take several years to accomplish depending on climatic conditions, rain vs. drought, and other unpredictable variables. The quantitative monitoring is designed to determine whether the revegetated site demonstrates a trend toward development of a self-sustaining creosote bush scrub habitat and to assess when the revegetated areas achieve the prescribed success criteria. Quantitative monitoring will commence after qualitative monitoring indicates that the vegetative cover within each of the revegetated areas is approaching the performance standards. This should occur between years 2 and 5 after the initial revegetation effort and continue until success criteria are achieved. This monitoring will occur annually during the spring, when the creosote bush scrub habitat is normally the most diverse.

Each revegetation site will be sampled by selecting transect locations to measure vegetation along the transect method line. Data will be collected on each area at the same time each year, in the spring, to ensure consistency between years. The monitoring data from each revegetation area will be analyzed for changes or trends in densities/cover of the most common perennial and annual species.

Revegetated area will be monitored for up to 5 years or until performance standards are met. If restoration performance standards have been met prior to 5 years, then the project will be considered successful and no further monitoring will be conducted and closure procedures can be initiated with the County. If performance standards have not been met, CalPortland will

implement alternative corrective actions based on the revegetation efforts and results of the monitoring efforts.

The Annual Revegetation Report will be prepared to summarize revegetation and monitoring efforts over the past year and to assess the results of revegetation on the disturbed areas of the site.

2.7 CLEANUP

All clean-up operations will be conducted within two years of the termination of mining. Structures, tanks, scrap material, refuse, and surplus materials will be removed, recycled, and/or disposed of at an appropriate landfill site. Excess material piles and disturbed areas will be regraded for positive drainage, scarified, and revegetated. Any spillage of fuel, oil, grease, or hazardous materials will be cleaned up in a proper and legally acceptable manner.

There are no wells on-site to be closed. A portal will be developed to access the Central Deposit. Underground mining is regulated by the DOI MSHA and is not part of SMARA except for surface disturbances related to the ongoing underground mining. All surface areas utilized during the underground mining phase will be reclaimed per the approved reclamation plan and SMARA. The portal will be closed per MSHA requirements and SMARA Regulations section 3713(b): "Prior to closure, all portals, shafts, tunnels, or other surface openings to underground workings shall be gated or otherwise protected from public entry in order to eliminate any threat to public safety and to preserve access for wildlife habitat." Final closure of the portal will be coordinated with MSHA and the County.

There are no other known portals, shafts, tunnels or openings on the mine site. If any are uncovered, they will be either closed or gated or protected from public entry but preserved for bat and other wildlife with County consultation.

2.8 POST RECLAMATION AND FUTURE MINING

The reclaimed site will allow for future exploration and development of additional resources located onsite. The reclaimed site will not preclude or necessitate any future mining activities or surface modification.

2.9 SLOPE AND SLOPE TREATMENT

The *Slope Stability Evaluation Report* prepared by Terracon May 2020 (see Section 1.1 above for a summation and Appendix C for a detailed assessment) calculated slope stability for potential failure geometries in representative slopes for the future quarry and overburden stockpiles and reclamation.

Static factors of safety calculated for representative walls were 1.63 to 2.17 with seismic factor of safety ranging from 1.3 to 1.75. Based on the results of the stability analyses, the proposed rock slope configurations are considered stable under static and seismic conditions as reclaimed slopes. Sufficient static factors of safety (FS) in excess of 1.5 and seismic factors of safety at or

greater than 1.1, which are in conformance with Division of Mine Reclamation (DMR) criteria, were indicated for the modeled scenario rock slopes configurations.

Overall highwall slopes formed in the rock units are stable by calculation at angles between 45 and 55 degrees (specific to rock unit) utilizing 275-foot-tall slopes. Consideration of local structural conditions in reclamation may include modification of geometry to achieve suitable face performance (preservation of sufficient bench width) and overall slope angles in the various rock materials.

The mine may have reclaimed rock slopes with a maximum height of approximately 275 feet based on comparison of the project boundary elevations with the proposed pit bottom elevations. The overall slope angles would be on the order of 45 degrees, using a 25-foot high, 25-foot wide face to bench ratio. The south wall of the East Deposit area is planned at 55 degrees which can be achieved using 25-foot faces and 18-foot wide benches. The slope models used vertical bench faces in global calculations. Typical face angles are between 65 degrees and 80 degrees in rock slopes; therefore, the modeled global configuration is based on a more conservative geometry.

Stockpile slopes are planned at a ratio of 2V:1V or flatter. This configuration is considered stable by inspection/practice. In addition, the presence of large angular clasts in stockpile fill materials improves the stability of these slopes.

Terracon recommended the following design/monitoring measures during operations and reclamation which have been included in the slope assessment:

- Inclusion of horizontal safety benches in final slope design per the Mine Reclamation Plan which will be an effective protection from rockfall, reduces tensional forces in surface rock, and reduces surface erosion rates.
- Quarry rims will be protected with berms as necessary to prevent slope erosion in areas where overland flow is toward slopes and also for public safety.
- Overall final cut slopes in the rock materials shall be no steeper than the slopes designed in the Reclamation Plan.
- Localized structures at the bench scale may form zones that require scaling and/or excavation to flatten or steepen face angles to achieve suitable reclamation conditions. At such time and locations as reclamation slopes are excavated, a qualified geotech professional should examine the slope conditions to determine conformance with the reclamation plan.
- Continued inspection and monitoring of mine benches and slope conditions for indications of potential instability and failure warning signs shall be implemented.
- Final reclaimed overburden stockpile slopes shall be no steeper than 2H:1V to the maximum proposed heights as shown on the Mine Reclamation Plan and surface drainage shall be conveyed away from slopes.

2.10 PONDS, WASTES

No operational ponds, reservoirs or tailings are utilized or produced at the project site. No “waste” is produced on-site. Overburden has and will be deposited in the existing overburden stockpile as detailed in Section 1.3.

No water is used in ore processing or for washing except for dust control. Therefore, no wastewater is produced. All iron ore will be crushed and separated and placed in temporary stockpiles awaiting transfer to markets. The overburden material is and will be stockpiled as shown on the mining and reclamation plan sheets and in accordance with PRC, Section 2773.3 and CCR, Section 3704.1 (h).

2.11 SOILS

Soils in the area have not been mapped or defined by the USGS Natural Resource Conservation Service (NRCS); however, soils in the ecoregion are derived from limestone and igneous rock and a nearby soil series around Fort Irwin has been described.

Cronese Series:

- The Cronese series consists of very deep, well-drained soils of igneous rock parent material on alluvial fans, fan aprons, and fan remnants. Soils are primarily gravelly loamy coarse sand.

Elevations on-site range from approximately 1,220 feet to 2,050 feet above mean sea level. On-site surface elevations within the mine areas range from 1,600 feet above mean sea level (amsl) in the east central areas to a low of approximately 1,200 feet amsl on the east where the site flattens into the Mojave River Wash. Most the western half of the site is naturally around 1,400 feet amsl. Topography on-site generally consists of rocky outcrops and rugged hills with an existing quarry and overburden stockpile and other mine activities on approximately 49 acres. The planned footprints of the overburden stockpile and the East Deposit are rugged rock hills and slopes with minimal soil available for salvage.

The Lillian Belle Deposit has an alluvium cover. The alluvium from this area will be salvaged to a depth up to 1-foot and pushed into soil stockpiles on the north and south and in the staging area to the northeast. It is estimated that the approximately 24,200 cy could be salvaged. This would cover approximately 30 acres to 0.5 feet. The areas to be recovered would be the Lillian Belle upper benches, pit floors, the overburden stockpile top, and the three staging areas.

Due to the rocky steep conditions on-site, there will not be sufficient “topsoil” or growth media to recover 100% of the site per a uniform depth as suggested by SMARA Section 3711 (e) *“Topsoil and suitable growth media shall be redistributed in a manner that results in a stable, uniform thickness consistent with the approved end use, site configuration, and drainage patterns.”* The other two deposits’ benches and the overburden stockpile slopes would be too rocky to cover with alluvium.

Most areas will be ripped as feasible to provide a rough surface for holding additional salvaged “topsoil” and seeds. It is not recommended to import other growth media from off-site as it could include nonnative seeds and non-local seeds not conducive to the site. To enhance the revegetation effort, “topsoil” will be augmented as needed by native material crushed and screened for use as growth media spread in a uniform manner to hold moisture and seeds.

2.12 DRAINAGE AND EROSION CONTROLS

Due to the hard bedrock material, lack of fine surface material, and low rainfall (approximately 4 inches/year), the site has little potential for erosion and sedimentation. No existing drainages are being substantially diverted and no additional runoff is expected as no impervious areas are being created. The pit areas will retain any direct precipitation to percolate or evaporate and berms along the rim will protect quarry slopes as needed. The stockpile top will be designed to drain inward and the rocky composition of the slopes will not be conducive for substantial downward erosion. Any runoff will be directed into the pits or into existing drainages. Control of surface drainage, erosion, and sedimentation of the operations involves the following primary components:

- Limiting surface disturbance to the minimum area required for active operations;
- Allowing pits to capture precipitation and any sheet flow
- Diverting runoff from flowing down quarry slopes with rim berms and down stockpile slopes by creating inward drainage for top of stockpile; and
- Stabilizing disturbed areas through regrading, replacement of soils, revegetation, and erosion control practices.

All operations on-site will comply with the SWPPP to be updated periodically with mine site development and implementation of storm water BMPs.

Long-term stabilization or reclamation will generally involve final benching and grading disturbed areas, establishing effective drainage, placement of soil, and revegetation. Following reclamation, surface runoff from deposit areas will be retained in the quarry limits where it will either infiltrate or evaporate. No substantial change in off-site run-off is expected as no impervious areas are being created.

2.13 PUBLIC SAFETY

Access to the Baxter Quarry on Basin Road with an intersection on the I-15 Freeway is restricted to authorized personnel. The entrance is gated with appropriate warning signs that notify the public that the mining area has restricted access and that the roads are not open to the public. During non-operating hours, gates are closed and locked. Other potential access roads are blocked or closed at the project boundary and have signs informing the public that the roads are closed to public access.

Quarry areas have warning signs, roads not used will be blocked or closed, and safety berms six feet high and 12 feet wide will be constructed along the quarry rims where there is potential access. Active mining areas comply with all federal (MSHA) and state (Cal-OSHA) mine safety regulations. Workers, including contractor labor, are trained in mine safety and first aid. Access and haul roads have safety berms per MSHA requirements, quarries have safety benches with berms, and inactive ramps and roads in mining areas are blocked to prevent access.

Prior to blasting activities, employees working in the area are notified, and a visual search of the area is done prior to blasts to verify that no one is present in the area. Access to the blasting area is restricted while blasting activity is in progress. Standard horn signals are used to notify personnel before and after blasts (all clear).

Once mining has been completed, equipment and debris will be removed from the site upon project completion. The quarry rims and benches will have a safety berm and/or rock barriers to restrict access with warning signs to prevent anyone from entering into the pit area. Typical warning signs will be at least 18" by 18" with contrasting background lettering every 500 feet and shall read "Danger," "Open Pit Mine" or "Steep Slope" or similar.

2.14 MONITORING AND MAINTENANCE

After termination of mining, monitoring will include site monitoring to assess access 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) will include monthly inspection by CalPortland personnel to check access control and signs and to schedule removal of illegal dumping. Biological monitoring to qualitatively and quantitatively evaluate overall conditions of the revegetated site with respect to native plant conditions and monitoring of weed growth and control effectiveness as detailed in Section 2.6.

SMARA requires annual reporting of Mining and Reclamation activities. The reports are filed with the State Division of Mining Reclamation and the County. Revegetated areas will be monitored over a 5-year period or until success criteria is achieved following initial seeding and/or planting. Data on plant species diversity, cover, survival and vigor will be collected on revegetated sites and compared to baseline data from undisturbed sites to evaluate project success and documented in an annual report.

Monitoring and maintenance of reclamation is an ongoing responsibility of CalPortland. The project site is inspected annually by the County.

2.15 RECLAMATION ASSURANCE

CalPortland currently maintains a reclamation financial assurance mechanism/bond of \$229,712 for the Baxter Quarry. Once the proposed revision to the reclamation plan is approved by the County, CalPortland will post a revised reclamation assurance in an amount sufficient to pay for the cost of revised reclamation as outlined in Section 2. The reclamation assurance is reviewed by the County annually. The County is the lead agency for SMARA compliance and will review the Reclamation Assurance and inspect the mine site annually.

STATEMENT OF RESPONSIBILITY

The statement of responsibility for the reclamation of the site (below) will be signed by CalPortland's representative and included as a separate form upon project approval. .

I, the undersigned, hereby agree to accept full responsibility for reclamation of all mined lands as described and submitted herein and in conformance with the applicable requirements of Articles 1 and 9 (commencing with Sections 3500 et. seq. and 3700 et. seq., respectively) of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations, the Surface Mining and Reclamation Act commencing with Section 2710 et. seq., and with any modifications requested by the administering agency as conditions of approval.

Signed this _____ day of _____, 20____ by:

Signature: _____ Title: _____

Printed Name: _____

3.0 GEOLOGY

The following description of the iron ore deposits is from *Mineral Land Classification of the Calmat Land Co. Baxter Iron/Carbonate Rock Deposit* (OFR 90-02), CA Dept. of Conservation, Division of Mines and Geology; San Bernardino County, California, 1990. Refer to Figure 6 for a General Geology Map from this report.

Geologic Setting

The Baxter mine area is situated within a northeasterly trending foothill range on the south flank of Cave Mountain. The range consists of an assortment of rocks which include: a metasedimentary sequence made up of biotite-quartz schists, metaquartzite; carbonate rocks composed of crystalline limestone and dolomite; diorite porphyry, granitoid rock and hornfels - all of which in places are covered by fanglomerate and younger alluvium.

The two oldest rock types in the area are carbonate rocks and metasedimentary rocks which are in contact. The relative ages of these two rock types are in question because of structural complexities of the area. If it is assumed that the small exposures of metasedimentary rocks which lie above the carbonate rock near the top of the range is not in fault contact, it would indicate that the metamorphic rocks are younger. The dip of the bedding in the carbonate rock suggests the range is an anticlinal feature and therefore would account for the aerial distribution of the metasedimentary sequences bordering the north and south flanks of the range. A tentative Precambrian age is assigned to these rocks because of the wide scale distribution of similar rocks of known Precambrian age a few miles to the west. These older rocks were subsequently intruded by Jurassic age diorite porphyry followed by emplacement of a larger body of granitoid rock (Burchfiel, B.C., and Davis, 1981). Locally, emplacement of these magmatic rocks resulted in converting the host rock into hornfels and brought about development of skarn iron ore deposits through replacement of carbonate rock. There appears to be a spatial relationship between distribution of diorite porphyry and occurrences of skarn magnetite/hematite ore bodies. Typically the iron bearing skarns are in contact with diorite on one margin of the ore body and carbonate rock, which it has replaced, on its other margin.

Fanglomerate is particularly well developed in the eastern portion of the study area and younger alluvium generally fills the drainage and drapes the foothills of the ranges.

Iron Ore Deposits

Three distinct iron ore bodies occur in the Baxter Mine area - a northern ore body (Lillian Belle), an eastern body (Monarch – defined in this Plan as the East Deposit)) and a western one (Cave Canyon – defined in this Plan as the West Deposit).

The northern ore body (Lillian Belle) is mostly covered by alluvium and has generally been outlined by drilling. A minimum of 600 feet in length has been defined with an inferred width of a few tens of feet. The deposit trends in a northeasterly direction.

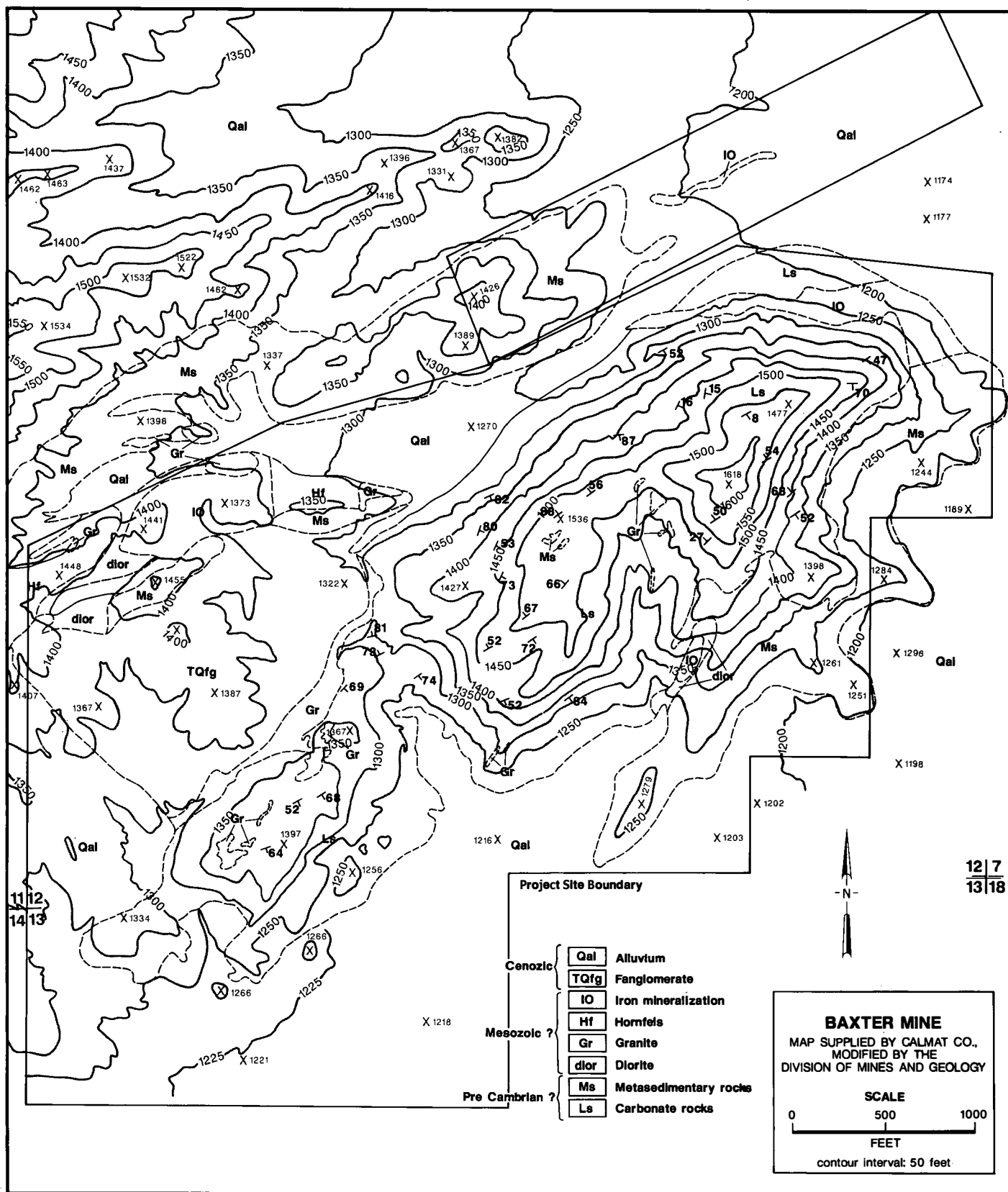


Figure 6 **Geologic Map of Baxter Mine Area.** Source: Mineral Land Classification of the Calmat Land Co. Baxter Iron/Carbonate Rock Deposit (OFR 90-021, CA Dept. of Conservation, Division of Mines and Geology; San Bernardino County, CA, 1990

The eastern ore body (East Deposit or Monarch) trends for about 1,800 feet in an easterly direction and displays an exposed width which ranges from a few tens of feet to about 300 feet and averages about 150 feet. Its eastern and western ends are covered by alluvium. The deposit is in contact with carbonate rock on its footwall and hanging wall and abuts against metasedimentary rocks at its southern exposure.

The western ore body (West Deposit or Cave Canyon) follows a northeasterly trend for about 300 feet and ranges in exposed width from a few tens of feet to over 350 feet. The ore body is mostly bound by diorite porphyry with a small body of granitoid rock on its northeastern margin and about 600 feet of metasedimentary rock on its southern border.

The ore bodies are generally extensively fractured and admixed with calc-silicate rock and consequently has a dilution effect upon the magnetite and hematite, which makes up the ore bodies.

Mineral Land Classification

Pursuant to the mandate of the Surface Mining and Reclamation Act of 1975 in accordance with the guidelines set forth by SMGB, the property was classified as follows:

MRZ-2A - (Areas where geologic data indicate significant measured or indicated resources are present). The East Deposit or Monarch and the West Deposit or Cave Canyon iron ore bodies were given this classification based upon drill hole and assay data and geologic field evaluation which shows significant iron ore deposits exist.

MRZ-2b - (Areas where geologic information indicates that significant inferred resources are present). The Lillian iron ore body was given this classification based upon limited drilling and assay data and geologic field evaluation.

Slope Stability Investigation Report (Terracon May 2021)

The following discussions are from the *Slope Stability Investigation Report* (Terracon May 2021). (See Appendix C and Sections 1.1 and 2.9).

The Baxter Quarry is located in San Bernardino County, northwest of the Mojave River where it emerges from the Afton Canyon area. The Mojave Desert is dominated by broad alluviated basins that receive sediments from adjacent uplands that bury the older topography. Playa lakes (internally drained) are a common feature of the region. The site is located in the southern foothills terrain of Cave Mountain, an area of moderate to steep slopes and moderate relief formed in Paleozoic and Mesozoic granitic and metasedimentary rocks. An alluviated plain extends east from the site area and is dominated by eolian and alluvial sands of the Mojave River floodplain.

Site Geology

Geologic units within the amended reclamation area include stockpile fill, alluvium, recent wash deposits, talus, sand deposits of two ages, younger and older alluvial fan deposits, granitic bedrock, mixed metamorphic rocks including carbonates, and metamorphic breccia. The units summarized below form the primary geologic materials in the project area and adjacent areas. The rock unit designations are based on our field mapping. Field relations show intrusive bodies of felsic (feldspar-rich) and mafic types within the metamorphic unit. Breccia derived from the metamorphic units that appear to overlie ore bodies is exposed in the West Deposit pit. The project area includes primarily alluvial cover within the Lillian Belle pit footprint and carbonate rocks within the East Deposit quarry footprint.

A detailed discussion of the onsite geological units with geologic site mapping is included in Appendix C starting on page 5.

Seismic Considerations

The ground-shaking hazard at the site was evaluated from a deterministic standpoint for use as a guide to formulate an appropriate seismic coefficient for use in slope stability analysis. The deterministic calculation of peak ground acceleration (PGA) was made using attenuation relations of Abrahamson and others (2014), Boore and others (2014), Campbell and Bozorgnia (2014) and Chiou and Youngs (2014). Refer to Appendix C for details.

Slope Stability

The results of global slope stability analyses are assessed in Appendix C and summarized in Sections 1.1 and 2.9 above.

4.0 HYDROLOGY

The USFWS NWI and the USGS National Hydrography Dataset were reviewed to determine if any blueline streams or riverine resources have been documented within or immediate surrounding the project site. Based on this review and field investigation, four (4) riverine resources were identified within the boundaries of the project site. These features are ephemeral features that follow topography within the canyon bottoms of the rolling hills. Surface flows within with these features are only provided by direct precipitation from storm events. No surface water was observed during the field investigation.

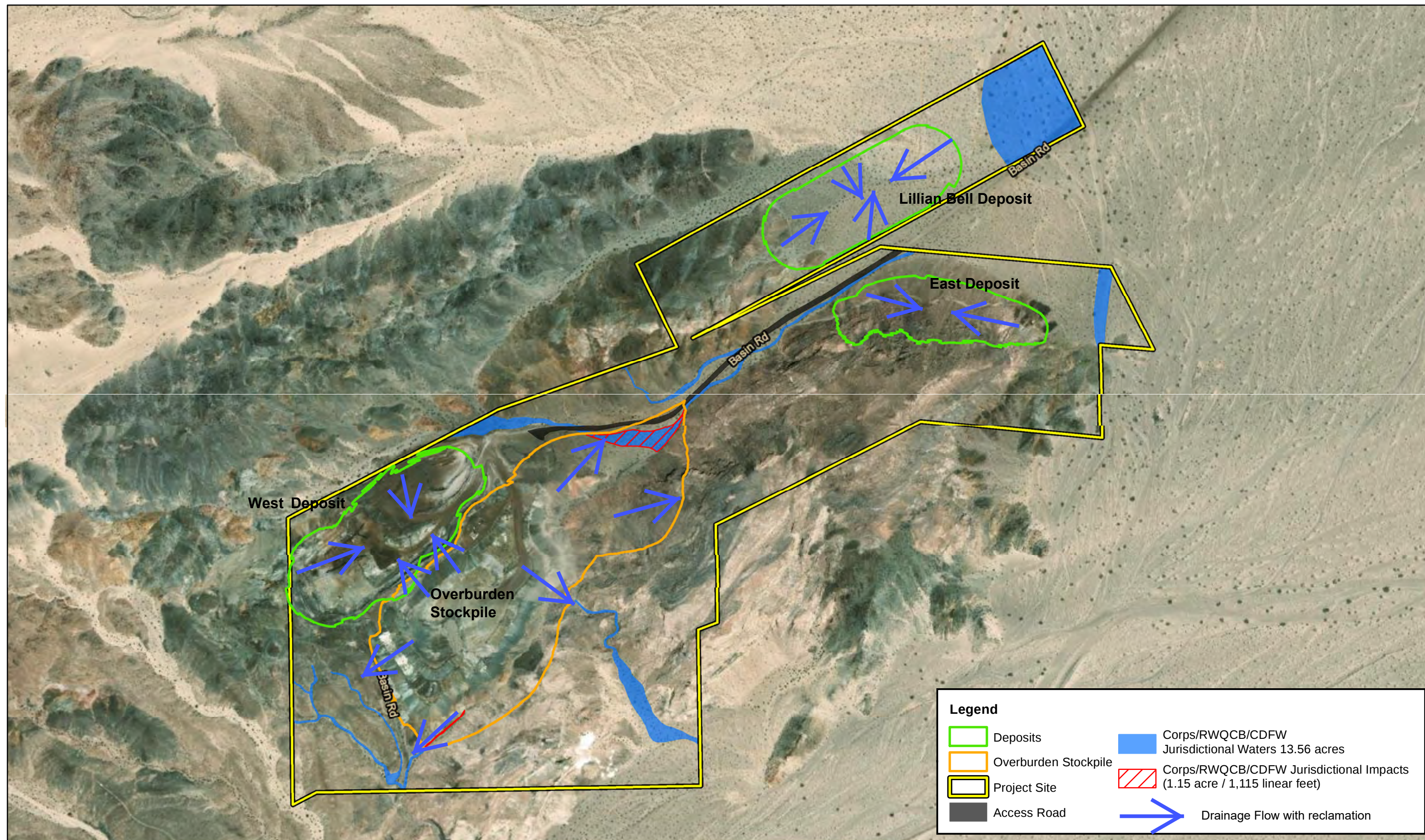
The Mojave River floodplain and six (6) unnamed drainage features were observed within the boundaries of the project site during the field investigation (see Figure 7). The Mojave River floodplain is located on the eastern boundary of the project site outside of the proposed limits of disturbance. The Mojave River floodplain is characterized by dynamic braided channel and is generally unvegetated or vegetated with a mix of creosote bush scrub and desert willow scrub. Mining activities will avoid the Mojave River floodplain.

Two of the ephemeral drainage features extend west to east on the northern boundary of the project site and generally follow Basin Road. These features have been subject to routine grading activities associated with maintenance of Basin Road. The other four ephemeral drainage features are found on the southwest portion of the project site. These features generally flow in a north to south direction. These ephemeral drainage features are unvegetated or vegetated with the creosote bush scrub plant species. The six unnamed drainage features all flow into the Mojave River Floodplain.

The Mojave River is considered a Traditional Navigable Water and is considered a Water of the United States. As a result, the Mojave River floodplain and six unnamed drainage features will likely fall under the regulatory authority of the Corps, Regional Board, and CDFW. The Project is expected to result in impacts to 1.15 acres and 1,115 linear feet of jurisdictional waters as shown in red on Figure 7. Prior to impacts to the jurisdictional resources, the operator shall obtain any applicable permits from the Corps, Regional Board, and CDFW.

Based on lack of evidence of springs or seeps within the reclamation footprint, the arid site conditions and site geology, it is unlikely that a static water table exists at or above the elevation of the existing and planned pits at the site. Groundwater conditions at completion of mining (reclamation stage) may include water seepage after periods of precipitation and ponding in pits of limited extent. However, groundwater is not anticipated to significantly affect the stability of the proposed reclamation slopes.

Due to the hard bedrock material, lack of fine surface material, and low rainfall (approximately 4 inches/year), the site has little potential for erosion and sedimentation. No existing drainages are being substantially diverted and no additional runoff is expected as no impervious areas are being created. The pit areas will retain any direct precipitation to percolate or evaporate and berms along the rim will protect quarry slopes as needed. The stockpile top will be designed to drain inward and the rocky composition of the slopes will not be conducive for substantial downward erosion. Any runoff will be directed into the pits or into existing drainages. Control of



surface drainage, erosion, and sedimentation of the operations involves the following primary components:

- Limiting surface disturbance to the minimum area required for active operations;
- Allowing pits to capture precipitation and any sheet flow
- Diverting runoff from flowing down quarry slopes with rim berms and down stockpile slopes by creating inward drainage for top of stockpile; and
- Stabilizing disturbed areas through regrading, replacement of soils, revegetation, and erosion control practices.

All operations on-site will comply with the SWPPP to be updated periodically with mine site development and implementation of storm water BMPs.

Long-term stabilization or reclamation will generally involve final benching and grading disturbed areas, establishing effective drainage, placement of soil, and revegetation. Following reclamation, surface runoff from deposit areas will be retained in the quarry limits where it will either infiltrate or evaporate. No substantial change in off-site run-off is expected as no impervious areas are being created.

REFERENCES, ACRONYMS, and GLOSSARY

REFERENCES

Biological Resources Assessment, ELMT Consulting, Inc., February 2022

Mineral Land Classification of the Calmat Land Co. Baxter Iron/Carbonate Rock Deposit (OFR 90-02), CA Dept. of Conservation, Division of Mines and Geology; Thomas P. Anderson, Senior Geologist, San Bernardino County, California, 1990.

Mining/Reclamation Plan (90M-02) for Baxter Quarry, approved by San Bernardino County, June 1990.

Record of Survey for Baxter Quarry, CASC, May 2021.

Revegetation Plan - Jericho Systems, Inc., February 2020.

Rules and Regulations, Mojave Desert Air Quality Management District, 2020.

San Bernardino County Wide Policy Plan, San Bernardino County, November 2020.

Slope Stability Investigation Report – Terracon Consultants Inc., May 2021.

Storm Water Pollution Prevention Plan, CalPortland Company, April 2020 (reviewed annually).

Surface Mining and Reclamation Act (SMARA), California Department of Conservation, State Mines and Geology Board, 2020.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2016. *Web Soil Survey*. Online at <http://websoilsurvey.nrcs.usda.gov/app/>.

ACRONYMS

af	acre-feet
amsl	above mean sea level
ANFO	ammonium nitrate and fuel oil
BATF&E	Bureau of Alcohol, Tobacco, Firearms and Explosives (federal agency)
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

CUPA	Certified Unified Program Agency (Hazardous Materials Division of the San Bernardino County Fire Department is designated as the "CUPA.")
CWA	Clean Water Act
CY, cy	Cubic yards
DEHS	Department of Environmental Health (County)
DMR	Division of Mine Reclamation
DOC	Department of Conservation
DRECP	Desert Renewable Energy Conservation Plan (BLM 2016)
FESA	Federal Endangered Species Act
HAZMAT	hazardous materials
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
NPDES	National Pollutant Discharge Elimination System
OSM	Office of Surface Mining
PM₁₀	10-micron or less particulate matter
RWQCB	Regional Water Quality Control Board
SMARA	Surface Mining and Reclamation Act
SPCC	Spill Prevention, Control, and Counter-measure
SWPPP	Storm Water Pollution Prevention Plan
USACE	US Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

GLOSSARY OF TERMS

BACT: Best Available Control Technology – Air quality term used to describe air pollutant control equipment for equipment and facilities that produce air emissions.

Bench: Terrace or leveled area breaking the continuity of a slope.

Berm: An elongated earthen structure which acts as a barrier; e.g., to make it difficult for a vehicle or ORV to cross along the rim of a quarry or along a haul road, or to redirect the flow of water.

California Environmental Quality Act (CEQA): Policies enacted in 1970, and subsequently amended, the intent of which is the maintenance of a quality environment for the people of California now and in the future.

Endangered species: A species whose prospects of survival and reproduction in the wild are in immediate jeopardy from one or more causes.

Factor of safety: Ratio of forces resisting slope failure over forces driving slope failure.

Fine Particulate Matter: Extremely small air pollutants less than 2.5 microns in diameter and that form primarily from engine combustion sources, not from fugitive dust sources (PM_{2.5}).

Haul road: A road used by haul trucks to haul ore and waste rock from the open pit to other locations usually to the processing plant or to the waste rock stockpiles.

Hazardous material: Substance with potential for corrosivity, toxicity, ignitability, chemical reactivity, or explosiveness, which may cause injury to persons or damage to property.

Hazardous waste: Defined in Section 1004(5) of the federal Resource Conservation and Recovery Act (RCRA) as, "...a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may: (a) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

Hydrogeology: The study of surface and subsurface water.

Ore body: A generally continuous mass of ore distinct from the surrounding rock.

Overburden: Material which does not meet quality specifications and other rock types encountered during excavations which will be hauled directly to overburden stockpiles.

Rare species: A species, which, although not presently threatened with extinction, is in such small numbers throughout its range that it may become endangered if its present environment worsens.

Reclamation: The combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations (SMARA).

Reclamation Plan: A restoration plan for the stabilization and recovery of a mine site after cessation of mining operations for another use; generally open space or other low intensity use.

Revegetation: Establishment of native vegetation on lands that have been disturbed.

Regional Water Quality Control Board (RWQCB): Agency which administers the requirements of the California Administrative Code, Title 23, Division 3, Chapter 15 (Section 2595,g,7) to ensure the highest possible water quality consistent with all demands.

Sensitive species: A plant or animal species, which is recognized by the government or by a conservation group, as being depleted, rare, threatened, or endangered.

Threatened species: Species are likely to become endangered in the foreseeable future in the absence of special protection and management efforts.

Water table: The upper water level of a body of groundwater.

CROSS REFERENCE MATRIX

Amended Baxter Quarry Reclamation Plan (90M-02) (CA Mine ID# 91-36-0036) & Surface Mining and Reclamation Act

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 PRACTICE. 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.		6	1.0
SMARA 2772 (c) (2)	Quantity & type of minerals to be mined.		4, 10	1.0, 1.1 Table 3
SMARA 2772 (c) (3)	Initiation and termination date.		7	1.0
SMARA 2772 (c) (4)	Maximum anticipated depth of mining.		11, 12	1.1
SMARA 2772 (c) (5)	Description, including map with boundaries, topographic details, geology, streams, roads, utilities.		1-18	1.0, 1.1
SMARA 2772 (c) (6)	Mining plan and time, schedule for reclamation (concurrent or phased reclamation).		9 - 10	1.0 Table 3
SMARA 2772 (c) (7)	Proposed subsequent use.		37	2.8
SMARA 2772 (c) (8)	Description of reclamation measures adequate for proposed end use.		28-30	2.5
SMARA 2772 (c) (8) (a)	Description of containment control and mine waste disposal.		18	1.2

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
SMARA 2772 (c) (8) (b)	Rehabilitation of stream banks/beds to minimize erosion	X	---	---
SMARA 2772 (c) (9)	Impact of reclamation on future mining.		37	2.8
SMARA 2772 (c) (10)	Applicant statement accepting responsibility for reclamation per the reclamation plan.		41	2.15
SMARA 2773 (a)	Water quality monitoring plan specific to property.		19	1.5; SWPPP
SMARA 2773 (a)	Sediment and erosion control monitoring plan specific to property.		19, 39	1.5, 2.12
SMARA 2773 (a)	Revegetation plan specific to property. Monitoring Plan.		31-37	2.6; Appendix B
SMARA 2773.1	Performance (financial) assurances.		41	2.15
SMARA 2777	Amended reclamation plans required prior to substantial deviations to approved plans.		This application is for an Amended Reclamation Plan.	---
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.).		21-28	2.1-2.4
CCR 3502 (b) (2)	Public health and safety (exposure).		17, 40	1.1, 2.13
CCR 3502 (b) (3)	Slopes: critical gradient, consider physical properties and landscaping.		14-16, 37-38	1.1, Tables 4 & 5; 2.9; App. C
CCR 3502 (b) (4)	Fill materials in conformance with current engineering practice.	X	---	---
CCR 3502 (b) (5)	Disposition of old equipment		37	2.7
CCR 3502 (b) (6)	Temporary stream and water diversions shown.	X	---	---

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3503 (a) (1)	Removal of vegetation and overburden preceding mining kept to a minimum.		28-37	2.5 – 2.6
CCR 3503 (a) (2)	Overburden stockpiles managed to minimize water and wind erosion.		18	1.2
CCR 3503 (a) (3)	Erosion control facilities (dikes, ditches, etc.) as necessary.		19, 40	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).		23-27	2.4
CCR 3503 (d)	Disposal of mine waste and overburden (stable-no natural drainage restrictions without suitable provisions for diversion).		18, 19, 39	1.2; 1.5; 2.10
CCR 3503 (e)	Erosion and drainage (grading to drain to natural courses or interior basins).		19, 40	1.5; 2.12
CCR 3503 (f)	Resoiling (fine material on top plus mulches).		28-37	2.5, 2.6
CCR 3503 (g)	Revegetation and plant survival (use available research).		31-37	2.6
CCR 3703 (a)	Sensitive species conserved or mitigated		21-22, 31-37	2.3; 2.6
CCR 3703 (b)	Wildlife habitat at least as good as pre-project if approved end use is habitat.		Wildlife Desc. 23-27; Reveg. 31-37	Wildlife Desc. 2.4; Reveg. 2.6
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		31-37	2.6

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3704 (c)	Mine waste stockpiled to facilitate phased reclamation and separate from growth media.		28-37	2.5; 2.6
CCR 3704 (d)	Final reclamation fill slopes 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.		28-30, 37	2.5; 2.9
CCR 3704 (f)	Cut slopes have minimum factor of safety for end use and conform with surrounding topography.		14-16, 28-30, 37	1.1; Tables 4 & 5; 2.5; 2.9; App. C
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.		31-37	2.6
CCR 3705 (b)	Test plots if success has not been proven previously		31-37	2.6
CCR 3705 (c)	Decompaction of site.		28-37	2.5; 2.6
CCR 3705 (d)	Roads stripped of road base materials, resoiled and revegetated, unless exempted.		31-37	2.6
CCR 3705 (e)	Soil altered or other than native topsoil, required soil analysis. Amend if necessary.		31-37	2.6
CCR 3705 (f)	Temporary access not bladed. Barriers installed.	X	---	---
CCR 3705 (g)	Use native plant species unless exotic species meet end use.		31-37	2.6
CCR 3705 (h)	Plant during correct season.		31-37	2.6
CCR 3705 (i)	Erosion control and irrigation, when necessary.	X	---	---
CCR 3705 (j)	If irrigated, demonstrate self-sustaining without for two-year minimum.	X	---	---
CCR 3705 (k)	Weeds managed.		31-37	2.6

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3705 (l)	Plant protection measures, fencing, caging.	X	---	---
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.		31-37	2.6
CCR 3706 (a)	Mining and reclamation to protect downstream beneficial uses.		19, 40, 47-49	1.5; 2.12; 4.0 SWPPP
CCR 3706 (b)	Water quality, recharge, and groundwater storage shall not be diminished, except as allowed by plan.		19, 40, 47-49	1.5; 2.12; 4.0 SWPPP
CCR 3706 (c)	Erosion and sedimentation controlled during all phases as per RWQCB/SWRCB.		19, 40, 47-49	1.5; 2.12; 4.0 SWPPP
CCR 3706 (d)	Surface runoff and drainage controlled and methods designed for not less than 20 year/1 hour intensity storm event.		19, 40, 47-49	1.5; 2.12; 4.0 SWPPP
CCR 3706 (e)	Altered drainages shall not cause increased erosion or sedimentation.		19, 40, 47-49	1.5; 2.12; 4.0 SWPPP
CCR 3706 (f)	Stream diversions constructed in accordance with DFG 1603, EPA 404, Sec. 10 Rivers and Harbors.		19, 22-27, 47-49	1.5; 2.4; 2.12; 4.0 SWPPP
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		

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
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.		37	2.7
CCR 3709 (b)	Structures and equipment dismantled and removed.		37	2.7
CCR 3710 (a)	Surface and groundwater protected.		19, 40, 47-49	1.5; 2.12; 4.0
CCR 3710 (a)	Surface and groundwater projected in accordance with Porter Cologne and Clean Water Acts (RWQCB/SWRCB).		19, 40, 47-49	1.5; 2.12; 4.0
CCR 3710 (b)	In-stream in accordance with CFG 1600, EPA 404, and Sec. 10 Rivers and Harbors.	X		
CCR 3710 (c)	In-stream channel elevations and bank erosion evaluated annually using extraction quantities, cross-sections, and aerial photos.	X		
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		
CCR 3711(a)	All salvageable topsoil removed. Topsoil and vegetation removal does not proceed mining by more than one year.		31-37	2.6
CCR 3711 (b)	Topsoil resources mapped prior to stripping, location of stockpiles on map. Topsoil and growth media in separate stockpiles.		31-37	2.6
CCR 3711 (c)	Soil salvage and phases set forth in plan, minimize disturbance, designed to achieve revegetation success.		31-37	2.6

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3711 (d)	Topsoiling phased ASAP. Stockpiles not to be disturbed until needed. Stockpiles clearly identified and planted with vegetation or otherwise protected.		31-37	2.6
CCR 3711 (e)	Topsoil redistributed in stable site and consistent thickness.		31-37	2.6
CCR 3712	Waste and tailings, and waste disposal governed by SWRCB (Article 7, Chapter 15, Title 23, CCR).		19, 40	1.2; 2.13
CCR 3713 (a)	Drill holes, water wells, monitoring wells abandoned in accordance with laws.		37	2.7
CCR 3713 (b)	All portals, shafts, tunnels or openings, gated or protected from public entry, but preserve access for wildlife.		11-13, 37	1.1; 2.7